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Healthcare Inflation and Child Mortality in Nigeria: An Investigation into the Moderating Role of GDP per Capita Growth

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Abstract

This study examined the impact of healthcare inflation on child mortality in Nigeria focusing on moderating roles of GDP per capita growth. This study used the Autoregressive Distributed Lag (ARDL) model and the data covers from 1985 to 2023. The short-run dynamics show that increase in healthcare inflation significantly raise child mortality while the lagged health expenditure and moderating variable reveal delayed but reduce child mortality. The interaction variable constantly reduces child mortality. Long-run estimates further confirm that healthcare inflation worsens child mortality. However, health expenditure and the interaction variable significantly reduce child mortality. Moderating variable exhibits a weak and counterintuitive insignificant positive relationship with child mortality. The coefficient of interacting variable is statistically significant. Hence the variable serves as reliable moderator. This study recommends the need to control healthcare inflation, increase health expenditure, and promote even distribution of income to achieve sustainable reductions in child mortality.

Keywords*:* Healthcare Inflation, Child Mortality, Health Expenditure

JEL Classification: I10, I12, I15, E31, O47, C22

1. Introduction

Health outcomes comprise life expectancy, maternal mortality, child mortality, and vulnerability index are pivotal for assessing the general well-being of people and the effectiveness of healthcare systems. Globally, child mortality rate drops significantly to 26 in 2025 from 65 deaths per 1,000 live births (World Health Organisation, 2025). Despite the global improvement in children health, significant disparities still exist amongst regions in Nigeria and Sub-Saharan Africa (Nnamdi & Ngwu, 2025).

In Africa, the child mortality is 47 deaths for every 1,000 live birth which nearly doubled the global average (World Health Organisation, 2025). Meanwhile, the child mortality is 54 deaths for every 1,000 live birth in Nigeria which is more than double the global average (World Health Organisation, 2025). The rates are higher in rural areas than in urban areas (National Population Commission, 2024). This signifies poor health, education, and living conditions and makes more than 63% of Nigerians vulnerable, according to the Multidimensional Poverty Index (MPI) (Nnamdi & Ngwu, 2025).

In Nigeria, the healthcare system feels like two different worlds that is, one for the wealthy and another for the poor. Families with low incomes often live on the edge. Most times, they are unable to set aside savings for medical needs. Difficult choices such as delay treatment, borrow at high cost or go without healthcare is/are faced by the vulnerable whenever sickness strikes. This makes deeper the inequality access to healthcare services as rural communities struggle with scarce facilities while urban

dwellers are held by rising healthcare costs. The result is a painful reality as access to quality healthcare depends on income more than on need. This widens the gap and compounds the hardship face by the households. Summarily, Nigeria condition could be described as human lives caught in a system that often fails to protect them.

Healthcare inflation is rising at a pace faster than prices in many other sectors of the economy (Vincent, et al., 2023). For example, the composite consumer price index (CPI) for all goods increased to 31.26% (National Bureau of Statistics, 2024) . Whereas, the rural and urban healthcare inflation were 25.9% and 23% respectively (National Bureau of Statistics, 2024). Household purchasing power is being eroded by this menace (Meadows, et al., 2024). Also, it limits access to essential and reproductive health which might affect the vulnerable populations (World Health Organisation, 2025) . As a result of the above-mentioned menace, realizing the 2030 agenda might suffer due to deep structural weaknesses in the healthcare system in Nigeria (UNDESA, 2015).

2. Literature Review

Hussien, Hagabdulla, Ahmed, Abdallah and Alotaibi, (2025) found that economic growth improved child health and life expectancy in Saudi Arabia. Similarly, Yeboah, Omonaiye and Yaya (2025) conducted a methodical review of studies examining the relationship between economic growth and maternal and child health in sub-Saharan Africa. The study revealed mixed findings in the relationship between economic growth and health outcomes. Some studies reviewed show economic growth has a negative effect on health outcome and infant/maternal mortality.

While others emphasized the importance of female education, equitable income distribution, and governance in shaping health outcomes Bala (2024) investigated how fixed-income earners in Niger State fared with inflation and rising healthcare demands. The study found that inflation and rising healthcare costs have strained households which imposes trade-offs between healthcare and food, reliance on substandard services, and worsening child health in Nigeria. Adewale (2024) explored how healthcare costs affect the health and well-being of rural residents. The study found that distance from hospitals impedes access to timely care. The findings revealed that road infrastructure alone does not determine facility choice but occupation also influences drug affordability.

Meadows, et al., (2024) show how the COVID-19 pandemic, and the Ukraine-Russia war exacerbated poor housing conditions lead to respiratory illnesses, malnutrition, cardiovascular problems, and mental health challenges in the United Kingdom. In Nigeria, government health expenditure has a statistically significant negative effect on the child mortality and positive effect on life expectancy (Awoyemi, Makanju, Mpapalika, & Ekpeyo, 2023). Similarly, evidence from OECD countries confirms that increased health expenditure reduces infant mortality and boosts life expectancy, though physician availability, GDP, and environmental factors also play roles (Anwar, Hyder, Nor, & Younis, 2023) . However, inflation has been found to worsen healthcare costs and service quality in Nigeria (Ipinnimo, et al., 2023) . While in developed countries, housing rents were positively associated with better health outcomes though inflation effects remained mixed (Wensheng, Ran, Anees, & Hazar, 2022).

Evidence from West Africa and other regions reinforces the importance of sustained public health investment. Government expenditure has been shown to reduce infant mortality and improve GDP in West African countries (Mustapha, Onikosi-Alliyu, & Babalola, 2021) . While EU studies found that every 1% increase in public healthcare expenditure reduces infant mortality by 0.64% and boosts average lifespan (Onofrei, Vatamanu, Vintilă, & Cigu, 2021). Nigerian studies confirm that increase in healthcare expenditure has a positive effect on life expectancy and negative effect on mortality rates while environmental pollution and macroeconomic instability worsen outcomes (Ochiaka & Akuma, 2021) and (Olayiwola, Adedokun, & Olusanya, 2020) . Evidence from OECD countries also shows that public healthcare expenditure reduces maternal and infant mortality (Karaman, Ürek, Demir, Uğurluoğlu, & Işık',

2020). Cesar, Lívia, Nathiéle and Fernanda (2019) emphasized that economic downturns, inflation, and unemployment increase child mortality, but consistent public health spending mitigates these effects. Andinet, Daniel and Abebe (2017) revealed that food price inflation in Ethiopia was found to harm child growth, particularly during pregnancy and early infancy which highlights the need for nutritional support and safety-net programs.

Although, healthcare inflation, health expenditure and GDP growth have been investigated in literature such as Vincent et al. (2023) and Adewale (2024). However, these variables were treated in isolation. The way the variables interact to shape health outcome such as child mortality was either omitted or ignored. Bala (2024) investigated coping strategies among fixed-income earners in the presence of inflation but the study was limited in scope. Thus it failed to capture the long-run trend. These inadequacies leave policymakers with half-baked knowledge of the reality to authorize decision that balance affordability, financing, and resilience. This study fills this important gap by using an Autoregressive Distributed Lag (ARDL) model to unravel the inadequacies associated with previous studies.

3. Methods and Materials

Grossman Health Capital Model (1972) emphasizes this study. The model considers health as a valuable asset that individuals and societies can invest in over time (Grossman, 1972). The model treats health as a form of capital stock which can be improved through spending on medical care, proper nutrition, and other health-related activities. However, this health stock can decline if it is not appropriately preserved.

The model explains how rising healthcare inflation can affect people's ability to invest in their health. Those with limited income may reduce how often they seek medical care or delay treatment when healthcare becomes more expensive. This leads to a decline in health. In the presence of huge economic growth, households are more likely to cope with increasing healthcare costs without reducing expenditure on basic needs. Hence, this study uses the Grossman model to show that child mortality in Nigeria are shaped not only by healthcare inflation but also by how those costs interact with the country's GDP per capita growth.

3.1 Data and Econometric Procedure

This study employed annual secondary time-series data covering the period from 1985 to 2023. World Development Indicators provides data for child mortality and GDP per capita growth (World Health Organisation, 2025). National Bureau of Statistics (NBS) provides healthcare-specific consumer price index data (National Bureau of Statistics, 2024). The data for health expenditure as percentage of GDP was obtained from the World Health Organization (WHO). Healthcare inflation represented by Consumer Price Index (CPI) serves as independent variable which is measured in percentage. The child mortality (CM) serves as the dependent variable and measured as deaths per 1,000 live births. The control variable is the health expenditure expressed as percentage of GDP (HE).

Kang, Chiang, Huangthanapan and Dowing (2015) asserted that a moderation analysis requires deliberate identification and integration of a suitable moderating variable (MO). This process involves a critical assessment of literature to determine how a potential moderator can meaningfully influence the relationship between healthcare inflation and child mortality (Kang, Chiang, Huangthanapan, & Dowing, 2015). Jetter, Laudage and Stadelmann (2019) established a strong link between national income levels and child mortality. GDP per capita growth is integrated in the model as a moderating variable. Therefore, moderation model is employed to assess whether the strength and direction of the relationship between healthcare inflation and child mortality depend on the level of GDP per capita growth (Baron & Kenny, 1986).

Methodologically, this is achieved through the introduction of an interaction term which is derived by multiplying the mean-centered values of healthcare inflation and GDP per capita growth. The process of mean-centering serves a crucial role to reduce the risk of multicollinearity between predictor and moderator variable and at the same time improving precision of the estimates (Namazi & Namazi, 2016).

$$HI_c = HI - \overline{HI} \qquad 1$$

$$GC_c = GC - \overline{GC} \qquad 2$$

Multiply the centered HI variable by the centered GC, to create the interaction variable and include it in the ARDL model,

$$IT = HI_c \times GC_c \qquad 3$$

If the interaction variable (IT) coefficient (φ_l) is statistically significant, it means GDP per capita growth serves as a strong moderator.

Establishing whether the variables are integrated at levels or at first differences is the first critical step. This analysis begins with the use of Augmented Dickey–Fuller (ADF) to test for unit roots (Gujarati & Porter, 2009). After the integration characteristics are confirmed as mixed orders of integration (at level and first difference), the Autoregressive Distributed Lag (ARDL) model is employed. The model is useful in this context because it accommodates variables with mixed orders of integration. The model for this work is a linear model as stated in Eq. 4.

$$CM_t = \alpha_0 + \theta_i \sum_{i=1}^{a} CM_{t-i} + \beta_j \sum_{j=0}^{b} HI_{t-j} + \delta_k \sum_{k=0}^{c} MO_{t-k} + \varphi_l \sum_{l=0}^{d} IT_{t-l} + \gamma_m \sum_{m=0}^{e} HE_{t-m} + u_t \qquad 4$$

Where:
CM_t = Child mortality
HI_t = Healthcare inflation
MO_t = GDP per capita growth (moderator)
IT_t = Interaction variable
HE_t = Health expenditure expressed as percentage of GDP
u_t = Error term

4. Results and Discussion

Table 1: Summary Statistics

Statistics	CM	HI	MO	IT	HE
Mean	86.4872	11.4761	1.4927	-1.2746	3.2561
Median	86.4	11.2860	1.4972	-2.2935	3.1895
Maximum	105.9	40.8639	12.2104	314.969	5.0536
Minimum	60.1	-17.5128	-4.5972	-138.3520	0.3594

Std. Dev	16.4991	10.4957	3.5786	59.3576	0.7747
Skewness	-0.0906	-0.4912	0.5167	3.6385	-0.7522
Kurtosis	1.3872	5.3233	3.7167	22.5931	6.8105
Jarque-Bera	4.2001	10.3397	2.5702	709.8719	27.272
Probability	0.1177	0.0057	0.2766	0.0000	0.0000
Observations	39	39	39	39	39

Source: Author's Computation (2026)

Child mortality and moderating variable are approximately normally distributed. However, healthcare inflation average is 11.48% annually but exhibits volatility with wide fluctuations and a leptokurtic distribution.

Healthcare expenditure as percentage of GDP and the interaction variable show strong deviations from normality with negatively skewed and highly peaked distributions. The Jarque-Bera tests confirm non-normality for healthcare inflation, healthcare expenditure as percentage of GDP, and the interaction variable. Health expenditure as percentage of GDP and healthcare inflation reveal instability.

Table 2: Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	Exogenous	ADF Test Statistics	Critical Value	Probability	Order of integration
CM	Intercept and Trend	-7.6843	-4.2268 (1%) -3.5366 (5%) -3.2003 (10%)	0.0000	I(0)
HI	None	-12.4027	-2.6308(1%) -1.9504(5%) -1.6112(10%)	0.0000	I(1)
MO	None	-3.9132	-2.6272(1%) -1.9499(5%) -1.6115(10%)	0.0003	I(0)
IT	None	-6.1459	-2.6299(1%) -1.9501(5%) -1.6114(10%)	0.0000	I(0)
HE	Intercept	-2.8657	-3.6156(1%) -2.9411(5%) -2.6091(10%)	0.0589	I(1)

Source: Author's Computation (2026)

The results show that this study variables have mixed orders of integration. Child mortality (CM), GDP per capita growth (GC), and the moderating variable (MO) have no unit roots. While healthcare inflation (HI) and healthcare expenditure expressed as percentage of GDP (HE) have integration order of 1. These mixed orders of integration validate the choice of Autoregressive Distributed Lag (ARDL) model.

Table 3: Child Mortality (CM) Short-Run Estimates

Variable	Coefficient	Standard Error	t–Statistic	Probability
CM(-1)	1.4523	0.2232	6.5077	0.0000
CM (-2)	-0.2015	0.4156	-0.4847	0.6331
CM (-3)	-0.3032	0.2026	-1.4962	0.1502
HI	0.0096	0.0037	2.5908	0.0175
MO	0.0038	0.0116	0.3267	0.7473
MO(-1)	0.0153	0.0094	1.6256	0.1197
MO(-2)	0.0174	0.0085	2.0375	0.0550
MO(-3)	0.0189	0.0099	1.9011	0.0718
IT	-0.0023	0.0007	-3.0755	0.0059
IT(-1)	-0.0019	0.0007	-2.7946	0.0112
IT(-2)	-0.0002	0.0005	-0.4979	0.6243
IT(-3)	-0.0014	0.0005	-2.7223	0.0131
HE	-0.0465	0.0359	-1.2954	0.2099
HE(-1)	-0.2135	0.0848	-2.5162	0.0205
C	6.2895	1.4692	4.2810	0.0004
@TREND	-0.0686	0.0190	-3.6014	0.0018
R^2	0.9998			
$\overline{R^2}$	0.9996			
F-statistic	4,3326.76			
Prob (F-statistic)	0.0000			
Durbin – Watson stat	2.2522			
Jargue-Bera	0.2268			
Probability	0.8928			

Source: Author's Computation (2026)

Table 3 shows that child mortality is highly persistent. Rising healthcare inflation is also significant. The moderating variable has weak immediate effects but some lagged influence suggest its role may build gradually. The interaction variable is consistently negative and significant. Health expenditure shows no immediate effect, but its past value is negative and significant. The negative and significant trend variable suggests a slow but steady decline in child mortality over time.

Table 4: F-Bounds Test for Eq. 4

Test Statistic	Value	Significance	I(0)	I(1)
F–statistic	6.5824	10%	3.374	4.512
K	4	5%	4.036	5.304
		1%	5.604	7.092

Source: Author's Computation (2026)

The variables are co-integrated since the computed F–statistic is greater than the upper bound value at 5% significant level.

Table 5: CM ARDL Long Form for Eq. 4

Variable	Coefficient	Standard Error	t–Statistic	Probability
HI	0.1843	0.0714	2.5812	0.0178
MO	1.0585	0.6036	1.7536	0.0948
IT	-0.1108	0.0403	-2.7494	0.0123
HE	-4.9670	1.9724	-2.5183	0.0204
CoinEq(-1)	-0.0523	0.0083	-6.3012	0.0000

EC = CM – (0.1843*HI + 1.0585*MO - 0.1108*IT - 4.9670*HE)

Source: Author's Computation (2026)

The long-run estimates indicate that healthcare inflation has a positive and significant effect on child mortality. The moderating variable is positive but only marginally significant. The interaction term is negative and significant. Health expenditure is strongly negative and significant.

Table 6: Bresch-Pagan-Godfrey – Heteroskedasticity Test

F-statistic	0.5557	Prob. F(15, 20)	0.8752
Obs*R-squared	10.5902	Prob. Chi-square (10)	0.7811
Scaled explained SS	2.6619	Prob. Chi-square (10)	0.9998

Source: Author's Computation (2026)

Table 6 reveals homoscedasticity since all the probability values are greater than 5% significant level.

Table 7: Bresch-Godfrey Serial Correlation LM Test

F-statistic	1.1106	Prob. F(3,17)	0.3722
Scaled explained SS	5.8994	Prob. Chi-square (3)	0.1166

Source: Author's Computation (2026)

Table 7 reveals no serial correlation since all the probability values are greater than 5% significant level.

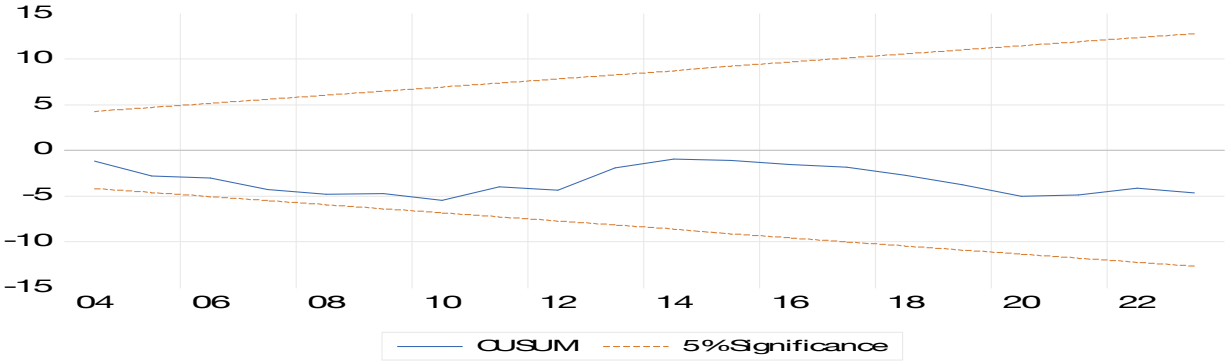
Table 8: Ramsey RESET Test

	Value	Df	Probability
t-statistic	0.4905	19	0.6294
F-statistic	0.2406	(1,19)	0.6294
Likelihood ratio	0.45300	1	0.5009

Source: Author's Computation (2026)

Table 8 shows there is no specification error in the model since all the probability values are greater than 5% significant level.

Figure 1: Cumulative Sum (CUSUM) Test



Source: Author's Computation (2026)

As shown in Figure 1, the CUSUM plot lies inside the 95% confidence limits to indicate stable model coefficients.

4.1 Discussion

Table 3 presents the short-run dynamics of child mortality in Nigeria using the ARDL model. The results reveal how current child mortality is influenced by its past values and key economic and health-related factors. Child mortality shows strong persistence. The coefficient of CM(-1) is positive and highly significant. This shows that previous year's child mortality level strongly influences the current level. However, the second and third lags are not statistically significant which suggests that this influence weakens beyond the immediate past. For Healthcare inflation, the coefficient is positive and statistically significant. This indicates that, in the short run, rising healthcare costs lead to higher child mortality as access to healthcare services becomes more difficult.

The moderating variable did not show a consistent effect. Most of its coefficients are not statistically significant. However, some lagged values are close to significance. This indicates that its influence may build gradually over time. The current and lagged values of interaction variable are negative and statistically significant. This shows that GDP per capita growth reduces the negative impact of healthcare inflation on child mortality. Households are better able to cope with increasing healthcare

costs due to country's income level. The immediate effect of health expenditure is not significant, but its past value is negative and statistically significant. This shows that increased spending on healthcare reduces child mortality, but the effect is not immediate. That is, the investments in healthcare services and infrastructure takes time to translate into better outcomes.

Table 5 presents the long-run relationship between child mortality and its key determinants in Nigeria. The coefficient of healthcare inflation is positive and statistically significant. Consequently, many households might find it difficult to afford healthcare services. The moderating variable is positive but marginally significant. This shows that GDP per capita growth may be associated with higher child mortality although the evidence is not very strong. This unexpected result could reflect unequal income distribution (Irish, 2025).

The coefficient of interaction variable is negative and statistically significant. High significant value of the interaction term shows that GDP per capita growth functions as a robust moderating variable in the model (Baron & Kenny, 1986). The coefficient health expenditure is negative and significant. This shows that increased spending on healthcare reduces child mortality in the long run as a result of sustained investment in healthcare infrastructure, service delivery, and access to care. Hence significance of the coefficient of interaction variable underscores the hallmark of this study.

5. Conclusion and Policy Recommendations

This study clearly demonstrates that healthcare inflation has a direct and significant effect on child mortality in Nigeria. In both the short run and the long run, rising medical costs restrict access to essential services which leaves families. The increase in child mortality shows how rooted is this challenge. That is, when children die today, it signals risks that continue into tomorrow. GDP per capita growth serves an important indirect role. Thus higher income levels help households cope with rising healthcare costs. However, income is unevenly distributed in Nigeria. Child survival rates increase as the investment in the healthcare sector increase though its effects materialize over time. This lag shows the time it takes for investments in infrastructure, health workers and service delivery to translate into better outcomes. The findings emphasize that child mortality is not only a health issue but also a macroeconomic challenge.

Based on the above findings, this study recommends integrated strategies that stabilize healthcare costs, expand equitable access to healthcare services and ensure economic growth that benefits all households.

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Ethical Approval
This research article has not violated any ethical standards.

Author Contributions

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References

Adewale, L. (2024, April 2). Impact of Healthcare Cost on the Health and Well-Being of Rural Dwellers in Nigeria. *Biomedical Journal of Scientific & Technical Research*, 47494-47501. doi:10.26717/BJSTR.2024.55.008772

Andinet, W., Daniel, K., & Abebe, S. (2017, January). A Tax on Children? The Effects of Food Price Inflation on Child Health. *Journal of Economic Literature*. Retrieved October 13, 2024, from https://thedocs.worldbank.org/en/doc/766351495654703618-0010022017/original/B1InflationChildHealthABCA.pdf

Anwar, A., Hyder, S., Nor, N. M., & Younis, M. (2023, April 17). Government Health Expenditures and Health Outcome Nexus: A Study on OECD Countries. *Frontiers, 11*. doi:doi.org/10.3389/fpubh.2023.1123759

Awoyemi, B. O., Makanju, A. A., Mpapalika, J., & Ekpeyo, R. S. (2023, May 24). A Time Series Analysis of Government Expenditure and Health Outcomes in Nigeria. *Journal of Public Health in Africa, 14*(7), 1409. doi:10.4081/jphia.2023.1409

Bala, M. (2024). Inflation and the Demand for Healthcare in Nigeria: the implication of the Coping Strategies Among fixed-income Earners in Niger State . *International Journal Economics and Business Management, 1*(1), 34-46. Retrieved June 28, 2025, from https://ijebm.kiu.ac.ug/assets/articles/1736404867_inflation-and-the-demand-for-healthcare-in-nigeria-the-implication-of-the-coping-strategies-among-fixed-income-earners-in-niger-state.pdf

Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological rRsearch: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. Retrieved January 11, 2026, from https://www.statisticssolutions.com/baron-and-kennys-method-for-mediation/

Cesar, A. O., Lívia, M. T., Nathiéle, H. L., & Fernanda, E. (2019, November 25). Effects of Economic Crises on Child Mortality and the Protective Role of Public Health Expenditure Across 127 Countries from 1995–2014. *Public Health Science, XXIV*(12). doi:https://doi.org/10.1590/1413-812320182412.25082019

Grossman, M. (1972). The Demand for Health: A Theoretical and Empirical Investigation. *National Bureau of Economic Research*(1). Retrieved November 10, 2025, from https://www.nber.org/system/files/chapters/c3484/c3484.pdf

Gujarati, D. N., & Porter, D. C. (2009). Basic Econometrics. New York, New York, United States of America: McGraw-Hill/Irwin, a Business Unit of the McGraw-Hill Companies, Inc. Retrieved October 17, 2024, from https://cbpbu.ac.in/userfiles/file/2020/STUDY_MAT/ECO/1.pdf

Hussien, H. H., Hagabdulla, N. H., Ahmed, K. M., Abdallah, F. I., & Alotaibi, K. N. (2025, June). The Impact of Economic Growth on Public Health and Well-being: An Empirical Analysis of Saudi Arabia. *Journal of Open Innovation: Technology, Market, and Complexity, 11*(2). doi:https://doi.org/10.1016/j.joitmc.2025.100564

Ipinnimo, T. M., Adeniyi, I. O., Osuntuyi, O. M.-M., Ehizibue, P. E., Ipinnimo, M. T., & Omotoso, A. A. (2023, April). The Unspotted Impact of Global Inflation and Economic Crisis on the Nigerian Healthcare System. *Asia-Pacific Journal of Health Mangement, 18*(1), i2091. doi:10.24083/apjhm.v18i1.2091

Irish, .. A. (2025, October 29). Economic Inequality and Health: A Literature Review and Invitation to Social Work Researchers. *Journal of Policy Practice and Research, 6*, 244–256. doi:https://doi.org/10.1007/s42972-025-00129-z

Jetter, M., Laudage, S., & Stadelmann, D. (2019). The Intimate Link Between Income Levels and Life Expectancy: Global Evidence from 213 Years. *Social Science Quarterly, 100*(4), 1387–403. Retrieved February 8, 2026, from www.jstor.org/stable/26745541

Kang, J. S., Chiang, C. F., Huangthanapan, K., & Dowing, S. (2015). Corporate Social Responsibility and Sustainability Balanced Scorecard: The Case of Family Owned Hotels. *International Journal of Hospitability Management, 48*, 124-134. doi:http://dx.doi.org/10.1016/j.ijhm.2015.05.001

Karaman, S., Ürek, D., Demir, İ. B., Uğurluoğlu, Ö., & Işık', O. (2020, April 6). The Impacts of Healthcare Spending on Health Outcomes: New Evidence from OECD Countries. *Erciyes Medical Journal, 42*(2), 218-222. doi: 10.14744/etd.2020.80393

Meadows, J., Montano, M., Alfar, A. J., Başkan, Ö. Y., De-Brún, C., Hill, J., . . . Fernandes, G. S. (2024, February 22). The Impact of the Cost-of-Living Crisis on Population Health in the UK: Rapid Evidence Review. *BMC Public Health , 24*, 561. doi:doi.org/10.1186/s12889-024-17940-0

Mustapha, R. A., Onikosi-Alliyu, S. O., & Babalola, A. (2021, June 1). Impact of Government Health Expenditure on Health Outcomes in the West African Sub-Region. *Folia Oeconomica Stetinensia, 21*(1), 48-59. doi:10.2478/foli-2021-0004

Namazi, M., & Namazi, N.-R. (2016). Conceptual Analysis of Moderator and Mediator Variables in Business Research. *Procedia Economics and Finance, 36*, 540-554. doi:https://doi.org/10.1016/S2212-5671(16)30064-8

National Bureau of Statistics. (2024, August). *CPI and Inflation Report*. Retrieved September 28, 2024, from National Bureau of Statistics: https://nigerianstat.gov.ng/elibrary/read/1241554

National Population Commission. (2024, September). *Nigeria Demographic and Health Survey*. Retrieved from Nigeria Demographic and Health Survey: https://preview.dhsprogram.com/pubs/pdf/PR157/PR157.pdf

Nnamdi, K. C., & Ngwu, F. N. (2025, March). Healthcare Expenditure and Development Indices of Health in Nigeria: A Time Series Econometric Approach. *The Nigeria Health Journal, 25*(1), 31 – 48. doi: https://doi.org/10.71637/tnhj.v25i1.954

Ochiaka, R. E., & Akuma, F. O. (2021, May 22). Impact of Government Health Expenditure on Health Outcoms in Nigeria. *Medical and Health Sciences European Journal, 5*(2). Retrieved June 12, 2025, from https://aspjournals.org/Journals/index.php/mhsej/article/view/42

Olayiwola, S. O., Adedokun, A. S., & Olusanya, S. O. (2020, September). Government Health Expenditure and Health Outcomes in Nigeria. *Journal of Economics and Policy Analysis, 5*(2). Retrieved June 12, 2025, from http://jepa.unilag.edu.ng/article/view/1563

Onofrei, M., Vatamanu, A.-F., Vintilă, G., & Cigu, E. (2021, October 13). Government Health Expenditure and Public Health Outcomes: A Comparative Study among EU Developing Countries. *International Journal of Environmental Resources and Public Health, 18*(20). doi:10.3390/ijerph182010725

UNDESA. (2015, January). *Sustenable Development*. Retrieved November 10, 2025, from UNDESA: https://sdgs.un.org/goals

Vincent, A. A., Thaddeaus, L. D., Sitdang, C. A., Nimvyap, N., Omoche, E. G., & Zacharia, E. O. (2023, June). Analysis of the impact of Inflation on Health Expenditure in Nigeria (1984-2021). *International Journal of Innovative Science and Research Technology, 8*(6), 1535-1544. Retrieved October 18, 2025, from https://ijisrt.com/assets/upload/files/IJISRT23JUN1273.pdf

Wensheng, B., Ran, T., Anees, A., & Hazar, D. (2022, February 14). Real Estate Prices, Inflation, and Health Outcomes: Evidence From Developed Economies. *Frontiers in Public Health, 10*. doi:https://doi.org/10.3389/fpubh.2022.851388

World Health Organisation. (2025). *World Health Statistics*. Retrieved from World Health Organisation: https://www.who.int/publications/b/78420

Yeboah, H., Omonaiye, O., & Yaya, S. (2025, March 7). The Impact of Economic Growth and Recessions on Maternal and Child Health Outcomes in Sub-Saharan African Countries: A Systematic Literature Review. *Reproductive Health, 22*(1). doi:10.1186/s12978-025-01973-8