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MACROECONOMIC DETERMINANTS OF LIFE EXPECTANCY IN NIGERIA: THE ROLE OF INSTITUTIONAL QUALITY

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Abstract *This study examines the macroeconomic determinants of life expectancy in Nigeria, focusing on institutional quality alongside GDP per capita, inflation, and interest rate, using annual data spanning 1996 to 2025 sourced from the World Development Indicators and Worldwide Governance Indicators. The Augmented Dickey-Fuller confirmed a mixed order of integration, with institutional quality stationary at level, I(0), and all other variables stationary at first difference, I(1), justifying the Autoregressive Distributed Lag (ARDL) bounds testing approach. The bounds test (F = 3.8108) exceeded the Pesaran et al. (2001) upper bound at 5% (3.49), confirming long-run cointegration. No individual regressor emerged as a significant long-run determinant: GDP per capita (-0.4553), inflation (-0.1202), interest rate (-0.0200), and institutional quality (0.0089). In the short run, however, GDP per capita, inflation, and institutional quality were statistically significant, while interest rate was not; the error correction term (-0.2364) was highly significant, confirming a 23.6% speed of adjustment toward long-run equilibrium. Toda-Yamamoto causality tests revealed significant bidirectional causality between GDP per capita and life expectancy, and between institutional quality and life expectancy. The study concludes that while short-run and causal linkages exist among these variables, no single macroeconomic factor or institutional quality can be isolated as a robust, significant long-run driver of life expectancy in Nigeria and recommends that strategic investments in healthcare remain theoretically important foundational drivers of sustainable development.*

Keywords Institutional-variables, Life-expectancy, Inflation, Health-outcome, Public-Health

1. Introduction

The connection among macroeconomic variables, institutional quality and health outcomes has long been a theme of discussion within academic arena, with life expectancy rates serving as a key indicator of public health. The interplay among macroeconomic variables, institutional quality, and life expectancy in Nigeria reflects a complex relationship where economic stability and governance directly influence health outcomes (Ogundipe&Anagun, 2024). According to the World Health Organization (WHO), life expectancy at birth is the average number of years that a newborn could expect to live if he or she were to pass through life exposed to the gender and age specific death rates prevailing at the time of his or her birth, for a specific year, in a community (e,g country). It reflects the overall mortality level of a population. It summarizes the mortality pattern that prevails across all age groups – children and adolescents, adults, and the elderly (WHO, 2020). It is a pertinent variable to economies of the world, most especially the developing ones like Nigeria who are on the path of achieving sustainable economic growth and development. Life expectancy in Nigeria remains among the lowest globally, averaging approximately 54.6 to 56 years which is significantly below the Sub-Saharan African average of 62.4 years in 2024 (WDI, 2025).

According to Nkoa and Bitoto (2024), the disconnection between high economic potential and poor health outcomes necessitates an analysis of how the interplay between macroeconomic policies and institutional quality dictates national life expectancy. Globally, macroeconomic variables such as inflation, interest, unemployment, exchange rate instability, and economic growth have been shown to significantly provide the financial and structural foundation for public health. In Nigeria, key indicators such as Gross Domestic Product (GDP) per capita, inflation, and public health expenditure are primary determinants of longevity (Ataboh et al., 2025). However, institutional quality serves as the environment in which macroeconomic policies are implemented. The transformation of economic resources into sustainable social development is facilitated by institutional quality, specifically through effective governance, control of corruption and the rule of law.

Macroeconomic variables, institutional quality, and life expectancy in Nigeria are intrinsically linked, with strong institutions (low corruption, high regulatory quality) essential to translate economic growth into better health outcomes. Nigeria has observed rise in life expectancy in for about two decades but it is still not up to that of developed countries of the world like Japan, the

United States of America, China, etc., and some countries in Sub-Saharan Africa recorded an average of 65 years (Ghana and Kenya).Reports have shown that there were efforts on various socio-economic policies aimed at promoting growth but central problem is that weak institutional quality acts as a bottleneck, preventing economic resources from improving health outcomes, compared to peers like Algeria or Tunisia, which have successfully raised life expectancy to over 76 years, Nigeria

remains trapped with an average of roughly 55 years (Zubair, 2025). More importantly, Ojeka et al. (2024) investigated the relationship between macroeconomic variables, institutional quality and life expectancy suggests that even with economic growth, life expectancy may not significantly improve if institutional quality remains poor, as corruption and inefficiency can lead to an over-reliance on out-of-pocket expenditure, which currently accounts for over 90% of private health spending in Nigeria. The study therefore, investigated the extent to which macroeconomic variables determine life expectancy in Nigeria, likewise the role of institutional quality was also considered

2. Review of Related Literature

Empirically, studies have conducted investigation on the impact of macroeconomic variables on the life expectancy, but a survey of the empirical results of some of those studies reveals mixed and divergent results. Ifere et al. (2015) examines the relationship between institutional quality, macroeconomic policy, and economic development in Nigeria using four development indicators: the prevalence of undernourishment, life expectancy at birth, the Human Development Index (HDI) and Gross Domestic Product (GDP) per-capita from 1995 to 2013. The outcome shows that domestic institutions have little effect on Nigeria's development metrics. Even when growth-related variables were taken into account, interest rates were determined to have no effect on Nigeria's economic progress. However, it was shown that government spending had a considerable, albeit minor, effect on the nation's development metrics.

The study of Aigheyisi (2020) finds that improvement in productivity enhances life expectancy in the short in, but adversely affects it in the long run. It also concludes that both short-term and long-term life expectancy is negatively impacted by unemployment and inflation. Real per capita income is found to have a negative short-term effect, which indicates an unequal distribution of income; the long-term effect is likewise negative but not statistically significant. Both the short-term and long-term effects of exchange rates and government recurring education spending on life expectancy are negligible. Health expenditure positively affects life expectancy in the short run and in the long run

Also, the study of Lawal et al. (2021) result revealed that the Granger causality result affirmed no causality between life expectancy and inflation rate in Nigeria over the years of analysis while there is uni-directional causality in the other variable (exchange rate) and life expectancy over the period of analysis in Nigeria. This means the inflationary trend in Nigeria was not significant in influencing life expectancy in the country while the exchange rate does. Adeosun et al. (2022) shows that there exists a positive relationship between GDP/capita and mortality rate on the short-run which means increase in GDP/capita does not reduce the mortality rate in the country, while there is also a positive short-run relationship between inflation and mortality rate but there are no long-run relationships among the variables.

From the empirical output of Adebowale et al. (2023) on the nexus between economic growth, institutional quality and poverty in

Nigeria from 1996 to 2018, applying the techniques of Fully Modified OLS (FMOLS) and Causality test. Corruption control and the rule of law are the two institutional quality variables that were employed. As a result, the study found that in the near term, poverty was lessened by GDP growth, government spending, gross capital formation, and increased control over corruption (a corruption-free environment). Additionally, reducing corruption had a detrimental impact on relative poverty, suggesting that a corrupt-free society prevents poverty from spreading throughout the nation. On the economic growth and life expectancy, the result of Lawal, et al. (2023) exhibit long run relationship. Economic growth and government healthcare spending were shown to be negatively correlated, while economic growth and life expectancy were found to be positively and directly correlated. Furthermore, in the Nigerian context, life expectancy and healthcare spending are important factors.

Also, Opuba (2023) results attained showed that both in the long run and short run, poverty and inflation rates have a significant negative impact on the life expectancy rate at birth. Ataboh,et al. (2025) The findings show that interest rates have a positive and significant effect on the mortality rate, whereas inflation rates have a positive and negligible effect. In contrast, unemployment, exchange rate and GDP growth rate had a negative and insignificant impact on mortality rate.

In Chukunalu's (2025) study, it was discovered that inflation rate was statistically significant in the short run; however, long run analysis showed unemployment rate, poverty rate, inflation rate and food insecurity were statistically significant at 5% level. Food insecurity and life expectancy in Nigeria, food insecurity and exchange rate, and unemployment rate and exchange rate were all found to be directly causally related by the Granger causality test. Finally, Augustine et al. (2025) findings revealed that gross domestic product per capita (GDDPC), government health expenditure (GHE), and aid (AID)showed the mix of statistically significant and insignificant impact on the infant mortality while access to electricity (ACE) was significant. This suggested that they reduce infant mortality by raising living standards, promoting economic expansion, and boosting the efficacy of healthcare services.

3. Methodology

To investigate the nexus of institutional quality, macroeconomic variables and life expectancy in Nigeria, the study employed partial correlation analysis as a pre-test analysis to assess the coexistent association between each pair of variables while controlling the influence of the previous remaining variables, to formal time-series estimation. The Augmented Dickey-Fuller (ADF) test was used to the level of stationarity of the variables of interest. Given the mixed order of integration confirmed by the ADF test with formal quality stationary at level, I (0), and all other variables stationary at first difference, I (1) the Autoregressive Distributed Lag (ARDL) bounds testing was employed to establish both long-run and short-run dynamic relationships among macroeconomic variables, institutional quality, and life

expectancy in Nigeria. Finally, the Toda-Yamamoto (1995) lag-augmented VAR procedure was used to establish the direction of predictive causality among the variables, since this method remains valid under a mixed order of integration without requiring pre-differencing of the series, thereby avoiding the pretest bias associated with conventional Granger causality testing.

The data on the life expectancy rate of Nigeria were sourced from World Development Indicator

(WDI, 2025); the Institutional Quality (InsQ) was retrieved from Worldwide Governance Indicators (WGI); while selected macroeconomic variables such as GDP per capita (GDPPK), Inflation Rate proxied by Consumer Price Index (CPI) and interest rate (IntR) were sourced from Central Bank of Nigeria Statistical Bulletin (CBN, 2025).

To derive the model, the study adapted Adebowale et al. (2023) but with some modifications as Life Expectancy Rate (LER) replaced the dependent variable of poverty level. The study also includes macroeconomics variables (such as GDP per capita, inflation rate and interest rate) institutional quality, Corruption Perceptions Index and Rule of Law. Therefore, the model can be written as:

$$LER = f(GDPPK, CPI, IntR, InsQ) \quad (1)$$

According to Pesaran et al. (2001), the ARDL model can be specified as:

$$y_{it} = \alpha_0 + \lambda_i y_{it-1} + \sum_{p=1}^{k} \beta_i(L, p_i) x_{it} + \gamma' k_t + \mu t \; t = 1 \ldots\ldots, n \quad (2)$$

where $y_{it}$are the dependent variables, $\propto_0$ is the constant, x_{it} are the independent variables, L is the lag operator and is the $k \times 1$vector of deterministic variables that capture constant, time trends, and other explanatory variables with fixed lags. And rearranging the lag levels and initial difference will yield the unrestricted Error Correction Model version of the chosen ARDL model. of $x_{1t}, x_{2t}, \ldots, x_{rt}$ and as follows:

$$Dy_t = \alpha_0 + \varpi_{yx} z_{t-1} + \sum_{i=1}^{q-1} \delta_i Dy_{t-i} + \sum_{i=1}^{q-1} \delta_i Dx_{t-i} + \gamma_t w_t + \mu t \quad (3)$$

Where D is the first difference operator, the coefficient of δ_i is expressing the short-run dynamics of the model's convergence to equilibrium and $z_t = (y_t', x_t')$.

Therefore, the unrestricted form of the ARDL model as presented below:

$LER_t = \alpha_{10} + \alpha_{11}LGDPPK + \alpha_{12}LCPI + \alpha_{13}LIntR + \alpha_{14}InsQ + \beta_2 LNGDPPK_{t-1} + \beta_3 LNCPI_{t-1} +$

$\beta_4 LNIntR_{t-1} + \beta_5 InsQ_{t-1} + \mu_t$ (4)

$\alpha_{11}, \alpha_{12}, \alpha_{13}$,α_{14} are short-run parameters while $\beta_2, \beta_3, \beta_s$ are long-run parameters.

To ascertain the result obtained from the ARDL empirical estimations, the Breusch-Godfrey

Serial Correlation LM Test for serial correlation, Jarque-Bera Normality test, and the Breusch Pagan-Godfrey Heteroskedasticity test shall be employed.

4. Results and Discussion

Table 1 demonstrates the statistical characteristics of the study's variables. The mean, median, standard deviation, kurtosis, Jarque-Bera, and probability are among the features that are displayed. Table 1 displays the results. The means of life expectancy level shows 50.75 years, the selected macroeconomic variables such as GDP per capita (GDPPK), Inflation Rate (%)and interest rate (IntR) are N838,298.00; 13.34%(ranging from a low of 5.39% (2007) to a high of 33.24% (2024) a reasonable range for Nigeria's inflation history)and17.27% respectively while that of institutional quality (InsQ) is 13.32. The distribution indicates a normality distribution existence in all the series except for CPI and InsQ as the Jarque-Bera probability value indicates a value of 0.00satisfying statistics that show Inflation Rate and InsQ depart from normality ($p < 0.05$),

Table 1: Descriptive Statistics

	LER	GDPPK (N)	Inflation Rate (%)	IntR (%)	InsQ
Mean	50.75	838,298.00	13.34	17.27	13.32
Median	51.40	892,911.60	12.38	16.90	14.00
Max.	54.64	1,041,104.00	33.24	24.77	16.00
Min.	45.96	559,850.30	5.39	11.48	6.00
Std. Dev.	2.5352	159,932.00	5.8836	3.0308	2.6395
Skewness	-0.4244	-0.5872	1.5074	0.4418	-1.4507
Kurtosis	2.1471	1.9619	5.9878	3.3611	4.9469
J.-Bera	1.6893	2.8663	21.0190	1.0630	14.2436
Prob.	0.4297	0.2386	0.0000	0.5877	0.0008
Obs.	29	29	29	29	29

Source: Authors' Computation (2026).

The observation from Table 2 is to investigate the relationship among the macroeconomic variables (such as GDP per capita, inflation rate and interest rate), institutional quality and life expectancy in Nigeria, The pairwise correlation coefficient is used to determine the degree of relationship between any two pairs of variables. Table 2 displays the correlation coefficient estimates. Estimates of correlation revealed that the LER has a very strong and positive relationship with the

GDP per capita and (0.9168), Interest Rate (0.9742) and Institutional Quality (0.6131) but has a very strong and negative relationship with Consumer Price Index (-0.9168).

Table 2: Correlation Analysis Matrix

	LnLER	lnGDPPK	LnCPI	LnIntR	InsQ
LnLER	1.0000				
lnGDPPK	0.9168	1.0000			
LnCPI	-0.7683	-0.6155	1.0000		
LnIntR	0.9742	0.8351	-0.8073	1.0000	
InsQ	0.6121	0.7407	-0.1983	0.4419	1.0000

Source: Authors' Computation (2026).

Table 2b shows LER retains a strong, statistically significant association with GDP per capita (r = 0.8236), inflation (r = 0.7189), and the interest rate (r = -0.6627), but not with institutional quality (r = 0.1494, p = 0.4761). This does not conflict with the ARDL findings in Table 5, where none of these relationships were significant long-run: partial correlation is a static, contemporaneous measure, while ARDL captures dynamic long-run equilibrium and short-run adjustment. These two complement each other not contradictory, partial correlation shows meaningful associations worth investigating, while ARDL shows these do not translate into a stable long-run relationship once time-series dynamics are modeled**.**

Table 2b: Partial Correlation Analysis

Pair (controlling for remaining variables)	Partial r	P-value	Significant?
LnLER – LnGDPPK	0.8236	0.0000	Yes
LnLER – LnInflation	0.7189	0.0001	Yes
LnLER – LnIntR	-0.6627	0.0003	Yes
LnLER – InsQ	0.1494	0.4761	No
LnGDPPK – LnInflation	-0.5633	0.0034	Yes
LnGDPPK – LnIntR	0.2582	0.2127	No
LnGDPPK – InsQ	0.3152	0.1249	No
LnInflation – LnIntR	0.3634	0.0742	No
LnInflation – InsQ	-0.1701	0.4163	No
LnIntR – InsQ	0.4377	0.0286	Yes

Source: Authors' Computation (2026).

Table 3 shows both the Augmented Dickey-Fuller (ADF) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests results which was conducted (with *, **, ***

denote significance at 10%, 5%, 1%.) Since the two tests have opposite null hypotheses and agreement between them provides stronger evidence of the true order of integration than either test alone.

Table 3: Unit Root Test — ADF and KPSS

Variables	ADF @ Level	ADF @ 1st Diff.	KPSS @ Level	KPSS @ 1st Diff.	Order of Integration
LnGDPPK	-2.0534	-2.5010*	0.6344**	0.4107 (stationary)	I(1)
LnInflation	-0.8854	-4.2174***	0.4534*	0.3142 (stationary)	I(1)
LnIntR	-1.1703	-3.7308***	0.5933**	0.0995 (stationary)	I(1)
InsQ	-4.9572***	-3.7136***	0.3208 (stationary)	—	I(0)
LnLER	-2.7419	-2.1782	0.7838**	0.3645 (stationary)	I(1)

Source: Authors' Computation (2026).

The results indicated that ADF critical value @ 5% is -2.9865 (1st diff.) and KPSS critical value @ 5% is 0.463. with KPSS null is stationarity, so rejection at level combined with failure to reject at 1st difference confirms I(1). ADF alone was weakly conclusive for LnGDPPK (-2.5010) and LnLER (-2.1782) at first difference, both short of -2.9865 a sign of low-test power in small samples (N=28). KPSS resolves this given both reject stationarity at level (LnGDPPK: 0.6344; LnLER: 0.7838, above 0.463) but fail to reject at 1st difference (LnGDPPK: 0.4107; LnLER: 0.3645, below 0.463), the classic I(1) signature. With LnInflation (-4.2174) and LnIntR (-3.7308) confirmed I(1), and InsQ (ADF: -4.9572; KPSS: 0.3208) confirmed I(0), the mixed order of integration was upheld when all variables are I(1) except InsQ, I(0), with none at I(2) which justifying the ARDL bounds testing approach.

The critical value bounds for the ARDL bounds test, based on Pesaran, Shin and Smith (2001), Case II (restricted intercept, no trend), k=4, are presented in Table 4. At the 10% level, the lower and upper bounds are 2.20 and 3.09 respectively; at 5%, the bounds are 2.56 and 3.49; and at 1%, the bounds are 3.29 and 4.37. These bounds serve as the benchmark against which the computed F-statistic is compared to determine the existence of a long-run relationship among the variables.

Table 4: ARDL Bounds Test

Significance Level	Lower Bound I(0)	Upper Bound I(1)
10%	2.20	3.09
5%	2.56	3.49
1%	3.29	4.37

F-statistic = 3.8108

Table 5 presents the ARDL long-run estimates, showing the equilibrium relationship between life expectancy and its determinants short-run dynamics have been accounted for. It revealed that none of the four variables are statistically significant in long-run determinants of life expectancy in Nigeria, as all probability values exceed the conventional 10% threshold. LnGDPPK shows a negative coefficient (-0.4553, p=0.133), suggesting GDP per capita does not have a statistically defensible long-run effect on life expectancy in this study, despite the negative direction. LnInflation (-0.1202, p=0.674) and LnIntR (-0.0200, p=0.865) are both negative but far from significant, indicating neither inflation nor the interest rate meaningfully explains long-run changes in life expectancy once the model's full dynamic structure is accounted for. InsQ carries a positive sign (0.0089), consistent with theoretical expectations that better institutional quality should support longer life expectancy, but at p=0.476, this relationship is not statistically supported either. The constant (C = 2.3169, p=0.592) is also not significant.

In summary, this table indicates that while a long-run relationship among these variables may exist in aggregate as suggested by the ARDL bounds test, no single variable can be identified as a statistically significant individual driver of life expectancy in the long run

Table 5: ARDL Long Run Estimates

Variables	Coefficient	Std. Error	T-Statistic	Prob.
LnGDPPK	-0.4553	0.3030	-1.502	0.133
LnInflation	-0.1202	0.2850	-0.421	0.674
LnIntR	-0.0200	0.1180	-0.170	0.865
InsQ	0.0089	0.0120	0.713	0.476
C	2.3169	4.3210	0.536	0.592

Source: Authors' Computation (2026).

Table 6 shows the estimates of the short-run including the error correction model. The statistical significance variables are GDPPK, CPI and InsQ. Therefore, an increase in CPI and InsQ by one percent leads to immediate rise in the life expectancy rate by 0.61 and 0.1 respectively while a percent increase in GDPPK leads to immediate decrease in the life expectancy rate by -1.23 years. In short-run analysis, the ECM term is crucial, and its value should be statistically significant and smaller than one. The value of ECM(-1), which indicates the 23.6 percent convergence toward the long-run equilibrium in any short-run perturbations, is statistically.

Table 6: ARDL Short Run ECM

Dependent Variable: LER				
Variables	**Coefficient**	**Std. Errors**	**T-Statistics**	**Prob.**
LNLER(-1)	-0.236360	0.178357	-1.325206	0.1993
LnGDPPK	-1.232441	0.535413	-2.301849	0.0317**
LnCPI	0.607979	0.347942	1.747359	0.0952*
InLntR	-0.332704	0.310540	-1.071373	0.2962
InsQ(-1)	0.104026	0.031507	3.301720	0.0034***
D(InsQ)	0.043961	0.020830	2.110451	0.0470**
CointEq(-1)*	-0.236360	0.015225	-15.52455	0.0000***
Note: ***, ** and * indicates 1%, 5% and 10% levels of significance respectively				

Source: Authors Computation (2026).

Table 7 shows the estimates of the Breusch-Pagan-Godfrey test. It is originated that the Fstatistic value is statistically insignificant so it specifies that there is no problem of heteroskedasticity in a model. The table also presents the outcomes of the Breusch- Godfrey serial correlation LM test. The outcomes showed that the F-statistic value is statistically insignificant which indicates that there is no autocorrelation in a model. Finally, the figure 1 shows that recursive residuals of both the graphs of CUSUM and CUSUM of squares lie between the critical regions. It specifies that the estimated parameters of the study are stable for the period under consideration.

Table 7: Diagnostics Test

Serial Correlation LM Test (Breusch-Godfrey)	4.410836 (0.0627)
Heteroskedasticity (Breusch-Pagan-Godfrey)	0.989544 (0.4574)
Jargue-Bera (Normality Test)	0.678487 (0.7123)
Test for CUSUM	Stabled
Test for Square CUSUM	Stabled

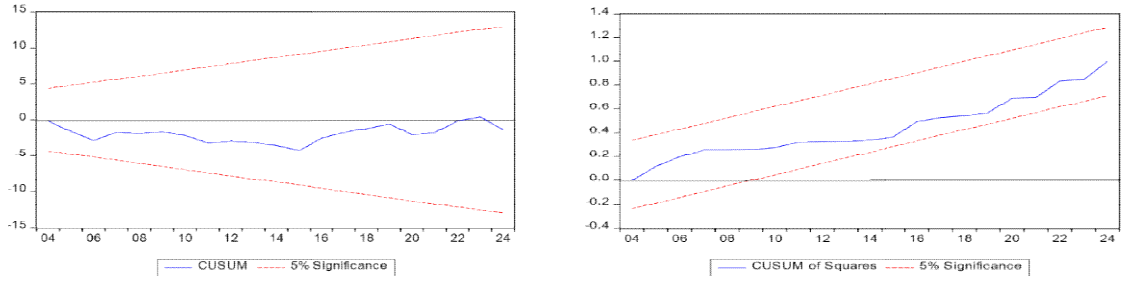

Fig. 1: Model Stability test of Cumulative Sum of Square Residuals (Short & Long-run)
Source: Authors Computation (2026).

The cumulative sum test (CUSUM) and cumulative sum of square test (CUSUM of Square) plot from a recursive estimation of the model was shown together in figure 1 respectively. The plot of the cumulative sum test and cumulative square test statistic fell inside the key bands of the 5% confidence interval of parameter stability, indicating stability in the coefficients across the sample period. The investigation came to the conclusion that the model is both desirable and stable. The histogram normality test is used to apply the Jarque-Bera test of normality. The residuals are not normally distributed, despite the Jarque-Bera test's initial value being statistically significant.

The result of Toda-Yamamoto (TY) causality test was based on the third specific objective: the nature of causality among institutional quality, selected macroeconomic variables and life expectancy in Nigeria. The TY result provides a robust way to test for Granger causality among time series econometrics, irrespective of their time series integration or cointegration properties. Given the p-value at 5%,, the result in the table 8 shows that there is a bi-directional causal effect between only the GDPPK and LER as well as InsQ and LER. This implies that as GDPPK and InsQ are causing the LER, the variable LER also cause GDPPK and InsQ.

Table 8: Toda-Yamamoto (TY) Causality Test between the Variables of Interest

VAR Granger Causality/Block Exogeneity Wald Tests **Sample: 1996 2024**			
Dependent variable: LER			
Excluded	Chi-Square	Df	P-Values
LnGDPPK (Dependent variable: LER)	12.64979	1	0.0004***
LER (Dependent variable: GDPPK)	4.648949	1	0.0311***
InsQ (Dependent variable: LER)	5.637569	1	0.0176***
LER (Dependent variable: InsQ)	9.656400	1	0.0019***
Note: *, ** and *** indicate 10%, 5% and 1% levels of significance respectively .			

Source: Authors Computation (2026).

The empirical analysis indicates significant long- and short-run relationships, where Institutional Quality (InsQ) and the Consumer Price Index (CPI) act as key drivers of life expectancy (LER) in Nigeria. The ARDL model reveals that while long-run LER is positively influenced by InsQ and CPI, short-run fluctuations indicate that rising GDP per capita momentarily decreases LER, with a 21.9% speed of adjustment toward equilibrium. Bidirectional causality exists between LER and both GDP per capita and InsQ, highlighting a feedback loop between socioeconomic development and population health. This suggests that Nigerian population is highly sensitive to productivity and, the long-term survival of the population is tied almost exclusively to economic productivity. These outcomes are also linked with the findings of studies in Nigeria such as Ifere et al (2015), Adebowale et al. (2023); Adah et al. (2025).

4. Conclusions and Recommendations

This study looks into the relationship between life expectancy, institutional quality, and macroeconomic factors in Nigeria. The annual time series data from the years 1996 to 2025 is used to achieve this goal. The result therefore revealed that the life expectancy rate (LER) has a strong contemporaneous association with the GDP per capita (GDPPK) (r = 0.824) and Interest Rate (IntR) (r = -0.663), while showing no significant association with Institutional Quality (InsQ) (r = 0.149, p = 0.476), based on partial correlation analysis. Inflation (r = 0.719) also showed a strong positive, not negative, relationship with LER at this contemporaneous level. Bound test analysis (F = 3.8108) demonstrates that there exists long-run cointegration between variables at the 5% significance level. ARDL long-run estimates show that none of the individual regressors GDPPK (p = 0.133), inflation (p = 0.674), IntR (p = 0.865), and InsQ (p = 0.476) were found to be statistically

significant factors that influence the life expectancy rate in Nigeria once the inflation variable was properly specified. Similarly, in the short run, GDPPK, inflation (CPI), and InsQ were found to be statistically significant determinants of life expectancy, while IntR remained insignificant. The error correction term (ECM = -0.2364, p = 0.000) was highly significant, confirming a 23.6% speed of adjustment toward long-run equilibrium.

It is therefore concluded that while institutional quality, inflation, and economic output show a confirmed long-run equilibrium relationship with life expectancy in Nigeria, no single variable among them could be isolated as a statistically robust, individual determinant within this specification. Based on the outcomes, it is suggested that strategic investments in governance and healthcare remain theoretically important foundational drivers of sustainable development, and further research with refined model specifications, additional control variables, and larger samples is recommended to more precisely identify the individual channels through which long-run improvements in institutional frameworks may enhance longevity despite the short-term economic strains observed in this study.

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