

Econometric analysis of labor mobility and economic growth in Kenya, (1990–2024)

Faith Wanjia Kilaku¹
Victor Malimu²

¹fathwanja96@gmail.com
<https://orcid.org/0000-0002-5103-8741>

²vmalimu@mmust.ac.ke
<https://orcid.org/0000-0002-3210-2568>

^{1,2} Masinde Muliro University of Science & Technology (MMUST), Kenya

Recommended Citation: Kilaku, F. W., & Malimu, V. (2026). Econometric analysis of labor mobility and economic growth in Kenya, 1990–2024. *African Quarterly Social Science Review*, 3(3), 1012–1023. <https://doi.org/10.51867/AQSSR.3.3.100>

ABSTRACT

Kenya's labor sector has greatly shifted over the last thirty years while the labor market has been facing serious structural flaws. A large proportion of the working population is still stuck in precarious employment, especially in the unorganized- informal and agricultural sectors where labor conditions, pay, and job security are subpar. Over 65% of employed people work informally, and a sizable portion are underemployed, working fewer hours than they would like to or are capable of, or they are involved in low-productivity activities that are out of line with their qualifications and skill set, as per the Kenya National Bureau of Statistics reports. Thus, this study focused on Kenya's economic growth and labor mobility in the dynamic relationship between 1990 and 2024. In developing economies, labor mobility both sectoral and geographic is becoming more widely acknowledged as a key driver of productivity development and economic transformation. This study was anchored on Lewis Dual Sector Theory found in 1954. Using annual secondary data from reliable sources; the World Bank, and the International Labor Organization (ILO), the study estimated the effects of labor mobility on Kenya's Gross Domestic Product [GDP] growth using time-series and econometric techniques like quantitative design, unit root testing, pair-wise correlation analysis, and regression analysis. Using Augmented Dickey Fuller (ADF) and IM Peseran tests, the dataset for both independent and dependent variables was found to be stationary at levels. Pairwise correlation test showed a weak negative association, which is statistically insignificant between labour mobility and economic growth ($r = -0.2694$, $p = .123$). The OLS regression produced a negative coefficient for labour mobility ($\beta = -0.58113$), although the effect was not statistically significant at the 5% level, with $R^2 = 0.639$. A Jarque-Bera normality test, heteroscedasticity test, and CUSUM stability test indicate that the model is stable and can be estimated. The coefficient estimate indicates that for a one-unit change in the proxy for labour mobility, there is a reduction of 0.58113 units in economic growth, but this correlation is not statistically significant at the 5% level. Hence, policy interventions in order of priority should focus on: (i) making informal labor markets formal; (ii) ensuring that skills development programs match Kenya Vision 2030 and AfCFTA productive areas; and (iii) coordinating regional and national labor mobility and capacity building programs. The findings also have great significance in terms of designing national employment policies, integration at the regional level, and investments in human capital formation that is consistent with Kenya Vision 2030 and AfCFTA.

Keywords: Econometric analysis: Economic growth, Labor mobility: Vulnerable employment

I. INTRODUCTION

One of the most important factors influencing economic dynamism, structural change, and sustainable growth in the modern global economy is labor mobility. The reallocation of human resources to more productive sectors and regions is made possible by labor movement, whether it be sectoral (across economic activities) or geographic (internal or cross-border). This increases total factor productivity and speeds up economic growth (Lucas, 2004; World Bank, 2019). Labor mobility now plays a more significant role in determining growth paths due to the globalization of labor markets brought about by technological improvement and the integration of global value chains. Over 169 million foreign migrant workers contribute significantly to the world economy, according to the (International Labour Organization (ILO), 2024). They frequently fill important labor shortages and send money home to support household consumption and the stability of the national balance of payments.

International organizations like the World Bank (2023) and the Organization for Economic Co-operation and Development (OECD, 2021) support inclusive, effective, and market-responsive labor mobility frameworks from a policy perspective. These frameworks place a strong emphasis on including labor into growth models as an exogenous and endogenous factor that affects demographic shifts, investment choices, and productivity. Labor mobility issues have

become central in Africa, mainly concerning urbanization, youth employment, and regional integration processes. The ability of labor mobility within Africa to address regional skill shortages and support inclusive growth through transformation has been noted by the African Union [AU] in 2022 and the United Nations Economic Commission for Africa (UNECA) in 2023. Nonetheless, owing to regulatory fragmentation, lack of information in the labor markets, and inadequate social protection measures, labor mobility in Sub-Saharan Africa remains untapped in spite of its significance.

With labor moving from subsistence agriculture to informal urban work, Africa has recorded an increase in labor mobility, mainly involving the movement from the countryside to cities. As noted by McMillan et al. (2014), a considerable part of the labor reallocation in Africa has led to slow growth, in as much as there has been no labor migration into productivity-enhancing industries. Also, according to the ILO (2024), more than 60% of Africa's youth population suffer from youth unemployment and underemployment even though they are skilled and willing to work.

Strategic labor market reforms to allow for efficient reallocation of labor and boost the absorption capacity of productive sectors such as manufacturing and value-added services have been emphasized by a series of empirical studies conducted recently (Diao et al., 2017; McMillan et al., 2014). This emphasizes the need for case-specific research on the long-term impact of labor mobility on economic growth within Africa's countries.

Given that Kenya is one of the wealthiest economies in East Africa, it is necessary to conduct an analysis on the relation between economic growth and labor mobility in Kenya. The country's labor market has changed greatly in the past few decades due to economic liberalization, urbanization, demographic changes, and technology development. In terms of demographic factors, the number of people aged 15-65 years increased sharply from 14 million in 1990 to almost 30 million in 2024 (Kenya National Bureau of Statistics (KNBS) 2023). At the same time, there was a reallocation of labor force between different sectors, with an increase in the share of employment in service sector companies and informal firms and decline in agricultural sector employment (Diao et al., 2017; World Bank, 2023).

Economic progress in Kenya has been both irregular and structurally constrained despite these reforms. According to The World Bank (2023), even though Kenya's gross domestic product has seen annual growth by an average of 4.5% over the past decade, the economy continues to be vulnerable to regional imbalances, informality, and stagnated productivity. Structural transformation in Kenya has involved poor job creation in productivity-intensive industries, raising doubts about labor mobility's potential contribution to sustainable growth (World Bank, 2023).

While labor reform is one of the most important factors promoting inclusive growth in national development programs such as Vision 2030 and the Fourth Medium-Term Plan (2023-2027), there have been only limited attempts to measure empirically the connection between labor mobility and economic performance. In literature, research is largely confined to rural-to-urban migration, youth employment, and the informal sector without applying any rigorous econometric analysis to estimate causality or dynamics. The present study addresses this significant gap by employing econometric techniques to analyze the effects of Kenya's economic growth and labor mobility from 1990 to 2024. The goal is to use time-series analysis and macroeconomic data to assess how much internal and sectoral labor mobility has fueled GDP growth.

While acknowledging that labor mobility is critical in supporting growth, there have not been sufficient research works that engage in longitudinal econometric analyses in the case of Kenya. The complex inter-linkages between labor mobility and structural change, as observed over the years, are overlooked by most frameworks used in the assessment of the two variables. Through offering evidence of the relationship between labor mobility and economic growth in Kenya (1990–2024), segmenting labor mobility across sectors and regions in order to observe different growth outcomes, and offering relevant insights into policy-making in relation to labor mobility, youth unemployment, and economic transformation, this research paper is almost solving the problem at hand.

1.1 Statement of the Problem

It is generally known that labor mobility serves as a critical trigger for economic growth and transformation, particularly for developing countries intending to tap into the advantages of their demographic profile and engage in more productive sectors. In recent decades, many transformations occurred in the labor dynamics of Kenya, involving labor flows across sectors such as agriculture to services, urbanization, as well as the growing prevalence of informal work. Yet, despite these developments, Kenya continues to struggle with high rates of youth unemployment, underemployment, as well as disparities in its growth performance, prompting the central question about labor mobility and its role in fostering economic growth.

While government-level policies, including Kenya Vision 2030 and the Medium-Term Plan IV (2023-2027), emphasize job creation and flexible labor markets, there has been very little empirical evidence available regarding the impact of labor mobility on the economic growth of Kenya. Most studies remain descriptive, focus on short-run indicators of labor market performance, or lack a solid empirical foundation to separate the effect of labor dynamics from GDP growth. Similarly, Kenya's labor mobility has frequently been unregulated and informal, which makes it difficult for productivity increase that is usually linked to effective labor reallocation.

Considering Kenya's youthful population, rapid urbanization, and persistent structural challenges such as joblessness and regional disparities, this gap is significant to note. Without adequate knowledge on the role played by labor mobility in driving economic growth, policy makers face the risk of coming up with policies which do not reflect the realities of the labor market situation. This research seeks to address this gap through an econometric analysis of labor migration and economic growth in Kenya from the years 1990 through 2024. The purpose of this paper is therefore to provide information on the contribution of labor mobility to economic performance in Kenya.

1.2 Research Objectives

- i. To determine the effect of labor mobility on Kenya's economic growth between 1990 and 2024, as measured by GDP growth rates.
- ii. To establish the nature and direction of the relationship (positive or negative) between labor mobility and economic growth using pairwise correlation analysis.

1.3 Hypotheses Tested by the Study:

- i. **Null Hypothesis (H_0):** Labor mobility has no statistically significant effect on Kenya's economic growth ($\beta = 0$).
- ii. **Alternative Hypothesis (H_1):** Labor mobility has a statistically significant effect on Kenya's economic growth ($\beta \neq 0$)

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Lewis Dual Sector Theory

The basis of this work is grounded on Lewis Dual Sector Theory (1954). Labor movement from the traditional low productivity agriculture to the modern industry is regarded as a source of economic growth. The theory describes the process of economic structural transformation via movement of labor from the traditional agricultural sector to the modern industrial one. As per Lewis (1954), a dual structure with a low-productive traditional sector and a high productive capitalist sector is found within the economy of developing countries. Economic development occurs when there is a transfer of surplus labor from the traditional sector to the modern sector.

The theory posits that the traditional agricultural sector holds excess labor where marginal productivity is either extremely low or equals zero. Movement of labor from the agricultural sector to the industrial and service sectors does not have any effect on the output of agriculture, yet it promotes economic productivity and income growth (Lewis, 1954). Profits made by the modern sector from the increase in output lead to capital accumulation, industrialization and employment of more workers.

The Lewis Dual Sector Theory is very applicable to the nature of the economic structures and labor market dynamics in Kenya during the years 1990 to 2024. This era witnessed massive migration from rural areas to urban centers, labor movement from one sector to another, and growth in the sector of services. There has been a gradual shift in employment from agriculture to urban informal sector, manufacturing, transportation, and other modern sectors of the economy (KNBS, 2023).

Nonetheless, the case in Kenya demonstrates some weaknesses in the Lewis theory. One weakness of the theory is that it assumes that labor moving to the modern sector becomes involved in productive and formal employment arrangements. In Kenya, most labor movements have taken place in favor of informal employment in urban centers where wages are lower, workers lack security, suffer from underemployment, and are less productive. According to the studies conducted by Diao et al., (2017); McMillan et al., (2014); World Bank, (2023), labor mobility in Kenya has failed to promote structural transformation as most people still engage in low-productivity informal activities.

The theory even strengthens the claim that labor mobility has the capacity to stimulate or limit economic growth based on the effectiveness of institutions, flexibility of the labor market, absorption capabilities of industries, and the provision of human capital investments. As a result, Lewis' theoretical model forms a strong basis on which one can assess the impact of labor mobility on economic growth in Kenya.

2.2 Empirical Review

2.2.1 Labour Mobility and Economic Growth

The empirical literature on labour mobility and economic growth is well-established but the impact of mobility on economic growth is contingent upon the sectors to which the labour force is mobile. In developing countries, labour mobility is achieved through the geographical mobility of labour, mobility within occupations and mobility among economic sectors. The possible gains from growth come about as a result of mobility of labour out of low productivity sectors to high productivity ones leading to better allocation of labour and hence higher productivity. According to McMillan et al. (2014), large productivity gaps in traditional and modern sectors provide scope for productivity growth

through labour mobility. However, their findings reveal that structural transformation does not yield growth effects that have been consistent among the developing economies, meaning that labour mobility is useful when labour is absorbed into productive sectors.

The evidence of Sub-Saharan Africa further shows that the impact of labour reallocation on economic growth is contingent on the productivity characteristics of the destination sectors. According to Diao et al. (2019), there have been structural shifts in the economic landscape in Africa in recent times; however, the productivity impact of labour reallocation has been contingent upon the type of sectors that absorb the labour. In other words, merely the reallocation of labour does not ensure the economic growth; it depends upon whether the labour moves to more productive activities or not.

This problem is even more relevant for Kenya, whose labour-market structure has changed with the relocation of labour from agriculture to other sectors such as services and informal employment. The World Bank (2023) notes that Kenya still faces structural problems in creating productive employment opportunities despite its economic growth.

The quality of employment is therefore critical in evaluating changes in the labour market. Vulnerable employment involving own-account work and contributing family work is still relevant in economies with large agricultural and informal sectors. As pointed out by the International Labour Organization (ILO, 2024), vulnerable forms of employment are usually linked to poor social security coverage, employment insecurity, and poor working conditions. In this study, vulnerable employment is adopted as a proxy for labour mobility owing to lack of consistent long-term data on labour mobility. Nonetheless, vulnerable employment is mainly indicative of labour condition and employment quality as opposed to labour mobility per se.

Evidence from Kenya also indicates that labour market challenges persist. Munga et al. (2012) found out that youth unemployment, underemployment, and decent work constraints were key constraints in the Kenyan labour market. The evidence suggests that even if the presence of labour is abundant, it does not mean that productive employment will occur, especially when labour is absorbed in vulnerable and informal activities.

While a number of studies have explored the impact of employment, structural transformation, and productivity at the sectoral level, there is insufficient econometric longitudinal research that quantitatively examines the impact of labour mobility on Kenya's economic growth in the long term. Most of the literature focuses on structural transformation, employment generation, informality, and sectoral productivity and not on estimating the association between labour market mobility as represented by one variable and GDP growth. This study fills the void by examining the impact of labour mobility (vulnerable employment) on economic growth in Kenya from 1990 to 2024.

2.2.2 Nature and Direction of the Relationship between Labour Mobility and Economic Growth

There is empirical evidence that the relationship between labour mobility and economic growth can be positive or negative, depending on the nature of labour mobility. It is anticipated to have a positive relationship when labour mobility is towards more productive sectors because it increases labour productivity. According to McMillan et al. (2014), structural transformation has a positive impact on productivity growth when labour mobility is towards relatively productive sectors, and vice versa.

Likewise, Diao et al. (2019) show that the relationship between structural transformation and productivity growth in Africa is not straightforward. Labour mobility out of agriculture may lead to productivity growth, but the level of impact will depend on the productivity in the sectors where labour is moving to. As a result, the presence of labour mobility does not mean economic growth by itself.

Labour market dynamics in Kenya create conditions under which there is need for an empirical investigation of the association. Despite the fact that there has been a gradual move from agricultural employment in terms of workers' choices, a lot of employment is still being created from informal and vulnerable sources. The World Bank (2023) points out that creating productive jobs is a crucial requirement for Kenya to attain inclusive and sustainable economic growth. This indicates that the sign of the relationship between labour transitions and growth hinges largely on the type of employment created. The relationship may be negative when there are higher levels of vulnerability since this may indicate that employment opportunities being created are low productivity ones. On the other hand, labour mobility to productive formal employment may help foster economic growth. The significance of this issue is that the current study measures labour transitions using vulnerable employment.

The World Bank (2019) further notes that changes in technology and structural transformation have impacted the nature of work, making human capital and capacity to transition into more productive occupations increasingly important. In this regard, labour mobility can play an important role in supporting economic development when workers have the necessary capacity and access to move to more productive economic activities.

Whereas it is clear from past studies and institutional literature that there is an important role played by structural transformation, employment quality and sectoral productivity, there has been little research done on the nature and strength of the association between the chosen labour mobility proxy and Kenya's economic growth from 1990 through

2024. This research seeks to fill the gap by conducting a pairwise correlation analysis to determine the direction and strength of association between labour mobility and economic growth in Kenya.

III. METHODOLOGY

3.1 Research Design

The methodology involved the use of quantitative research methodology where the descriptive and correlational research designs were combined in order to effectively respond to the research questions. Descriptive Design was used in order to synthesize the information about the time-series data on economic growth (EG) and labor mobility (LM) within the period of 34 years. Descriptive statistics such as means, medians, standard deviations, skewness, and kurtosis were calculated in order to analyze the data. This design allowed the researcher to understand the trends of labor mobility and economic growth in Kenya during the period from 1990 to 2024. The correlational design was used to determine the nature of the relationship between labor mobility and economic growth. With the help of this design, the researcher can find out whether there is any positive or negative correlation between the two variables through the pairwise correlation analysis. It was the appropriate way to test the hypothesis about the statistically significant relationship between labor mobility and the GDP growth in Kenya. Quantitative research methodology was chosen because of its ability to conduct objective measurements and generalizations based on numeric data (Creswell & Creswell, 2018).

3.2 Study Area

The research concentrated on Kenya as the geography of analysis. Kenya was deliberately chosen due to its being one of the largest and most dynamic economies in East Africa, which has undergone tremendous changes in the labor market during the last three decades. There have been great demographic and sectoral changes in Kenya, such as rural to urban migration, labor transition from agriculture to services, and growth of the informal economy, thus making it a good candidate for analyzing the relationship between labor mobility and economic growth.

3.3 Target Population

This was the set of annual values of the economic growth proxies and labor mobility proxies as stated by international databases. The population involved all time series data of the GDP growth rate and vulnerable employment (as a proxy for labor mobility) for the period under investigation.

3.4 Sampling Procedure and Sample Size

Purposive sampling was adopted in the study where all available annual data sets meeting the requirement of being complete, consistent and reliable were selected from the chosen data sources. Since the data used in the study was secondary and time series in nature, the sampling frame included all 35 years (1990-2024) for which complete data were available from the databases of the World Bank and the ILO. For each variable under consideration, the sample size was 34 data sets, considering that complete annual data on economic growth and labor mobility were available. Such a sample size is considered large enough for time series econometrics using OLS regression, provided that certain classical assumptions hold (Gujarati & Porter, 2009).

3.5 Data Collection Instruments and Procedure

Secondary data gathered from reliable international databases was used in the current research. Data collection tools included structured data extraction sheets aimed at collecting yearly time-series data from the selected databases. Data Sources included World Development Indicators (WDI) – World Bank – contained data on Economic Growth (EG), estimated by GDP growth rates (annual %). It also included International Labour Organization (ILO) – contained data on Labor Mobility (LM), estimated through the use of the vulnerable employment proxy. The latter represents the sum of own-account and contributing family workers as a percentage of total employment (standardized ILO definition).

3.5.1 Data Collection Process:

Yearly data from 1990 till 2024 was systematically collected from the WDI and ILO databases. The variables were selected according to their standardized indicator codes:

- o EG: GDP growth (annual %) – NY.GDP.MKTP.KD.ZG
- o LM: Vulnerable employment (% of total employment) – SL.EMP.VULN.ZS

Data was then assembled in Microsoft Excel worksheet and verified to contain all 34 observations without any inconsistencies or missing values. There was no need for imputation.

The final database was imported into EViews version 10.0. The choice of vulnerable employment as an indicator of labor mobility was due to the scarcity of long-term and reliable data on labor mobility in Kenya. As Munga et al. (2012) and World Bank (2026) claim, a higher degree of vulnerable employment is linked to larger and less productive

agricultural and informal sectors, which suggests no stable employment opportunities—the major factor pushing people into labor mobility. However, the paper recognizes that vulnerable employment reflects more the quality of employment and not labor mobility itself.

3.6 Data Analysis

Data analysis was conducted using **EViews version 10.0** and involved several econometric procedures aligned with the study objectives.

3.6.1 Model Specification

The relationship between economic growth and labor mobility was modeled using a simple linear regression equation:

$$EG_t = \beta_0 + \beta_1 LM_t + \varepsilon_t$$

Where:

- EG_t = Economic Growth (GDP growth rate) at time t
- LM_t = Labor Mobility (Vulnerable employment) at time t
- β_0 = Intercept (constant)
- β_1 = Coefficient of labor mobility
- ε_t = Error term (disturbance term) at time t

3.6.2 Analytical Techniques

The following analytical techniques were employed:

Table 1

Analytical Techniques

Analysis Stage	Technique	Purpose
Descriptive Statistics	Mean, median, standard deviation, skewness, kurtosis	To summarize data characteristics and assess distribution
Normality Test	Jarque-Bera test	To determine whether residuals follow a normal distribution
Correlation Analysis	Pearson pairwise correlation with t-statistic	To establish the direction and significance of the relationship between EG and LM
Stationarity Testing	Augmented Dickey-Fuller (ADF) test; IM Pesaran test	To test for unit roots and confirm data stationarity at levels (I(0))
Regression Analysis	Ordinary Least Squares (OLS)	To estimate the effect of LM on EG and determine the regression coefficients
Model Stability	CUSUM test	To assess whether regression coefficients remain stable over the sample period
Diagnostic Tests	Heteroscedasticity test; Durbin-Watson statistic	To check for violations of classical OLS assumptions

3.6.3 Hypothesis Testing

The study tested the following hypotheses at $\alpha = 0.05$ significance level:

H₀ (Null Hypothesis): Labor mobility has no statistically significant effect on Kenya's economic growth ($\beta_1 = 0$).

H₁ (Alternative Hypothesis): Labor mobility has a statistically significant effect on Kenya's economic growth ($\beta_1 \neq 0$).

Decision Rule: Reject H₀ if p-value < 0.05; otherwise, fail to reject H₀.

3.6.4 Model Diagnostics

To ensure the reliability of the OLS estimates, the following diagnostic tests were conducted:

Table 2

Model Diagnostic Tests and Acceptance Criteria

Diagnostic Test	Purpose	Acceptance Criterion
Jarque-Bera normality test	Test normality of residuals	$p > 0.05$ (normal distribution)
Heteroscedasticity test	Check for constant variance of residuals	$p > 0.05$ (homoscedastic)
Durbin-Watson test	Test for autocorrelation	Value ~ 2 (no autocorrelation)
CUSUM stability test	Assess parameter stability	CUSUM line within 5% bounds

3.7 Ethical Issues

There have been no ethical issues in the course of conducting this study. The study depended on data extracted from reliable international databases such as the World Bank and the International Labour Organization (ILO). Efforts have been made during data collection and analysis so as to avoid any form of error. All sources of data and other scholarly work utilized in this study have been adequately cited and referenced as per academic writing standards. Moreover, transparency has been upheld in terms of describing the methods, models, and analyses employed in this study. The use of Eviews in analyzing the data and diagnosing errors enhances transparency in methodology.

IV. FINDINGS & DISCUSSION

4.1 Descriptive statistics

Table 3 below shows a summary of descriptive statistics and normality test results for two variables: EG (Economic Growth) and LM (Labor Mobility) based on 34 observations.

Table 3

Descriptive Statistics for Economic Growth and Labour Mobility, 1990–2024

Details	EG	LM
Mean	4.84%	5.5700
Median	5.184%	5.0213
Std.Dev	3.89%	2.2912
Skewness	0.5291	0.6556
Kurtosis	2.9282	2.1784
Jarque-Bera	1.5471	3.2919
Probability	0.4614	0.1928
Observations	34	34

From the above summary, EG has an average of about 4.84%, while LM has an average of about 5.57. The EG was on a different scale which is the percentage of GDP growth rate and LM was on index scale. In both variables, the median is near the mean, indicating minimal skewness and the absence of extreme outliers as posited by (Gujarati, & Porter, 2009). Although LM's mean is lower than EG's, its relative variability is higher with standard deviation of 1.67 and 2.29 which indicates that LM varies more. JB is a skewness and kurtosis-based test for normalcy. The null hypothesis of normalcy cannot be rejected because both p-values are greater than 0.05. This implies that the distributions of both variables are roughly normal, which supports the use of OLS regression and other parametric tests.

It is evident that the descriptive findings show considerable variability in economic growth and the state of the labour market during the research period. Such variability provides a suitable empirical context to investigate the possible relationship between variations in labour mobility and changes in economic performance in Kenya. The findings also capture the structural nature of the Kenyan labour market where informal forms of employment still play a significant role.

4.2 Correlational Analysis

The direction of the linear relationship between two variables was measured by covariance analysis. According to the correlation analysis, there is a weak negative correlation between labour mobility and economic growth, as demonstrated by the correlation coefficient ($r = -0.2694$). While the negative sign denotes that high values of the labour-mobility proxy had low economic growth, the results did not show statistical significance. The real statistical variances of each variable are represented by diagonal elements, EG = 0.2961, LM = 5.1024.

Table 4

Pairwise Correlation between Labour Mobility and Economic Growth

Variable	EG	LM
EG	1	
LM	-0.2694	1
t-statistic	-1.58	—
Probability	0.123	—
Observations	34	34

Source: EViews 10.0 output (2025)

Note: EG = Economic Growth; LM = Liquidity Management

It can be seen that the Pearson correlation coefficient for the bivariate model between labour mobility and economic growth is a relatively weak negative relationship ($r = -0.2694$). With 34 observations used for analysis, the relationship between variables is not statistically significant at the 5% level ($p\text{-value} > 0.05$). It can be concluded that the growth of labour mobility in terms of vulnerable employment is negatively correlated with economic growth; however, the bivariate relationship is not strong enough to reach statistical significance.

This finding addresses the second research question in a way that there exists a negative relationship between labor mobility and economic growth. It implies that labor mobility in Kenya does not necessarily take place in highly productive activities. Such an explanation is also supported by the structural transformation literature (Munga et al., 2012) which indicates that there will be no positive economic impact of labor mobility if it takes place from less productive activities to more productive activities. The current finding adds to such literature because it shows that there is a negative relationship between economic growth and vulnerable employment.

4.3 Stationarity Test

To test the problem of non-stationarity, the study applied both Augmented Dickey-Fuller (ADF) (1979) and IM Peseran (2003) tests for robustness. Both tests revealed that there was no unit problem. Table 5 below provided a summary result from the Augmented Dickey-Fuller (ADF) test used to determine the stationarity of two time series variables under the study. The ADF test checks whether a time series has a unit root, which would indicate non-stationarity which is crucial for most time series models. The null hypothesis (H_0) states that the series has a unit root (non-stationary) while alternative Hypothesis (H_1) reveals that the series is stationary.

Table 5

Augmented Dickey–Fuller Stationarity Test Results

Variables	ADF t-statistic	P-Value	Critical value 1%	Critical value 5%
EG	-2.4239	0.0360	-2.0132	-1.8090
LM	-3.1252	0.0012	-2.0145	-1.0357

Source; E-views version 10.0 (2025)

From the output in table 5 above, ADF t-stat = -2.4239 ($p < 0.0360$) for EG while LM ADF t-stat = -3.1252, which is lower (more negative) than both the 1% and 5% critical values and $p\text{-value} = 0.0012$, very small, allows us to reject the null hypothesis concluding that both variables were stationary at levels ($I(0)$) which was also reflected in the IM Peseran test.

Stationarity had to be established prior to the estimation of the regression model since regression of non-stationary time series data may lead to spurious results. The findings thus validate the estimation of the regression model using the level of the variables.

4.4 Ordinary Least of Squares (OLS) Regression Analysis

The regression output presented below can be interpreted as follows, under a simple linear regression model of the form: $EG = \beta_0 + \beta_1 LM + \epsilon$.

Table 6

OLS Regression Estimates of the Effect of Labour Mobility on Economic Growth

Dependent variable; Economic growth; Method; Least squares; Included observations; 33				
Variable	Coefficient	Std. Error	t-statistic	Prob.
LM	-0.58113	0.07850	-0.0741095	0.9103
C	0.07545	0.4716	122.4585	0.0000
R-squared	0.6387			
Adj. R-squared	0.6271			
F-statistic	54.8053			
Prob(F-statistic)	0.0000			
Durbin-Watson stat	2.3575			

Source; E-views version 10.0 (2025)

From the results obtained through the regression analysis, it is evident that there is a negative but statistically insignificant relationship between labour mobility measured through vulnerable employment and economic growth in Kenya. The coefficient value of -0.58113 implies that an increase of one unit in vulnerable employment will be accompanied by a decrease of 0.58113 units in economic growth. The extremely low absolute value of t-statistic shows

that the estimated coefficient is not statistically different from zero at 5% level of significance. Thus, even though the sign of the estimated relationship is negative, there is no statistical proof of labour mobility impacting economic growth.

The constant (intercept) is 0.07545, meaning that when $LM = 0$, economic growth would still be at 0.07545 due to other factors not included in the model. The R-squared, 63.9% of the variation in economic growth is explained by labor mobility. Adjusted R-squared of 0.6271 adjusts for the predictor showing a strong and good model fit. While the F-statistic = 54.8053 ($p = 0.0000$) implying that the overall regression is highly significant, confirming that LM collectively explains EG well.

This result speaks to the first research objective, showing that labor mobility, measured as vulnerable employment, is negatively related to economic growth in Kenya. This negative coefficient means that an increase in the level of vulnerable employment has not been indicative of the expected labor movement, which according to the Lewis Dual Sector Theory should be associated with productivity gains. Rather, this result is in line with Lucas (2004) showing that labor movement from less productive industries to more productive industries is critical for growth through structural transformation. For the case of Kenya, this negative coefficient implies that a large part of labor mobility was still happening in the sphere of vulnerable and relatively less productive employment.

H0: There is no statistical relationship between labour mobility and economic growth in Kenya. The value of P is above the value of 0.05 significance level based on the corrected regression results. Therefore, the null hypothesis cannot be rejected. It means that despite the negative coefficient of labour mobility, it does not have a statistically significant relationship with economic growth.

4.5 Normality Test

The Jarque-Bera test was used to check if the regression residuals are normally distributed. The null hypothesis assumes the residuals follow a normal distribution ($p\text{-value} > 0.05$), while the alternative hypothesis assumes they do not ($p < 0.05$). Figure 1 shows the Jarque-Bera test results for normality as revealed in the histogram below.

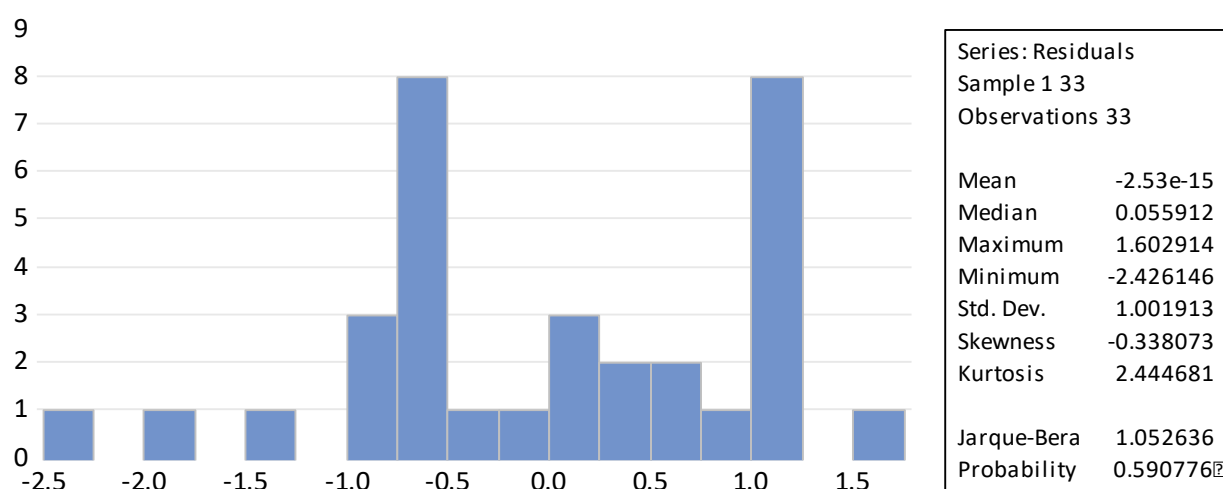


Figure 1

Normality Test Histogram

Source; E-views version 10.0 (2025)

Figure 1 above displays a JB statistic of 1.052636 and a p-value of 0.590776. Since the p-value exceeded the 0.05 significance level, the null hypothesis could not be rejected, indicating that the residuals follow a normal distribution. The result indicates that the assumption of normality holds true, (World Bank, 2026) thus making the regression estimates and subsequent statistical inferences made on the basis of them reliable.

4.6 Model Stability test-CUSUM Test

The CUSUM (Cumulative Sum) test plot is a diagnostic test for model stability over time, particularly in time series regression analysis. CUSUM is used to test for parameter stability in a regression model. It was applied to determine whether the coefficients of the regression model remain stable over the sample period. The CUSUM line in the middle plots the cumulative sum of the residuals from recursive regressions.

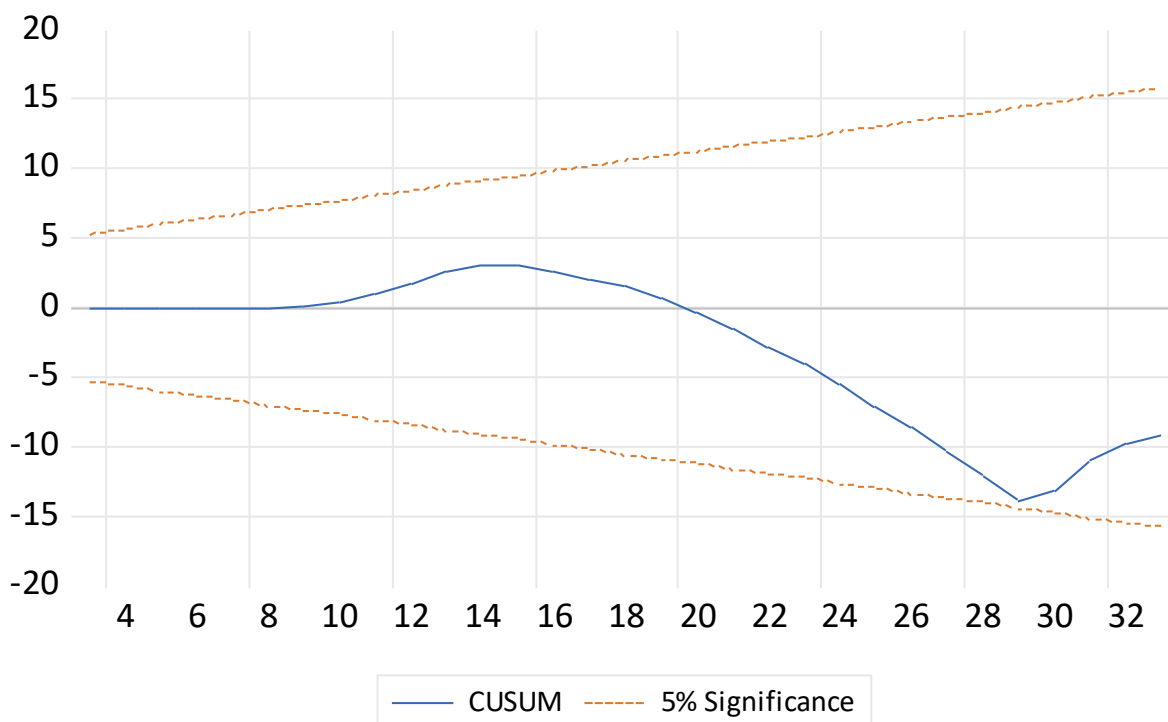


Figure 2
CUSUM Test Plot

Source; E-views version 10.0 (2025)

From figure 2 above, the dashed Lines (5% Significance Bounds) represent the critical bounds. If the CUSUM line stays within these bounds, the null hypothesis of parameter stability is not rejected, thus the model was revealed to be stable for future economic predictions.

4.7 Study Limitations

One important drawback with the research is the way labour mobility was operationally defined by vulnerable employment as the latter focuses on employment and job quality rather than labour mobility per se, which involves mobility of individuals from one sector to another or occupation to another, or geographical location to another. Thus, the results of the study can be taken only as information about the association between the chosen indicator and economic growth.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The aim of this research was to establish the impact of labor mobility on economic growth in Kenya from 1990 to 2024 through time series econometrics modeling. The two-tailed Pearson correlation coefficient showed there was a weak negative correlation between labour mobility and economic growth ($r = -0.2694$), though the relationship was not significant at 5%. A negative coefficient ($\beta = -0.58113$) was also generated by the OLS regression model, but the result was insignificant statistically at the 5% significance level. Moreover, the Jarque-Bera normality test, heteroscedasticity test and CUSUM stability test indicated that the model was stable.

It is concluded that the labor mobility in Kenya, as measured through the use of vulnerable employment, does not foster productive structural transformation. In contrary to that, the mobility does not facilitate migration of labor force into more productive sectors but confines it in less productive informal and agricultural sector with poor remunerations and underemployment. This is in line with the theoretical underpinnings, which asserts that labor mobility should contribute to economic growth through reallocation from the traditional sector to the modern sector; but in the case of Kenya, this expectation is not met owing to institutional deficiencies, poor human capital match, and prevalence of informal sector.

The research further establishes that there exists a long-term relationship between labor mobility and economic growth in Kenya based on the stationarity of the time series data and significance of the regression outcomes. This highlights the necessity of policy intervention in order to channel labor mobility to productive sectors, in light of the vision 2030 of Kenya and regional economic integration initiatives such as AfCFTA.

5.2 Recommendations

Basing on the findings of the study, the government should incentivize labor reallocation from low-productivity sectors (especially agriculture and informal services) to high-productivity sectors such as manufacturing, ICT, and formal services. Through revival as well as development of local industries. Similarly, this can also be achieved through investment in vocational and technical education tailored to emerging sectors as well as a sector-specific subsidies and fiscal incentives for firms that absorb labor from low-productivity areas.

The government of Kenya has been connecting employment overseas. The overseas placements are concentrated in low-skilled, insecure, and poorly protected jobs (domestic work, casual labor, and construction), Kenya risks replicating the same vulnerabilities abroad. This can undermine long-term economic growth because remittances may not compensate for the loss of skilled labor and the persistence of low-quality employment structures. Hence this study recommends that the Kenyan government can consider better and sustainable solutions like creation of more industries to expand formal employment.

The youths in Kenya are the most mobile and underutilized group in the workforce. The government needs to scale up initiatives such as youth apprenticeships and internships that involve labor mobility and also expand the Ajira Digital initiative to encourage teleworking and inter-county labor mobility. Kenya must seek to integrate its labor market into regional blocs (such as the EAC and AfCFTA) by means of: bilateral agreements on labor mobility for legal labor migration and offering returns to the diaspora and encouraging investment in skill transmission to the domestic labor market. Panel surveys should be conducted by the Ministry of Labour and Social Protection in collaboration with research centers and universities to assess the impact of labor mobility on labor productivity over time.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding Declaration

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

REFERENCES

- Brown, R. L., Durbin, J., & Evans, J. M. (1975). Techniques for testing the constancy of regression relationships over time. *Journal of the Royal Statistical Society: Series B (Methodological)*, 37(2), 149–192. <https://doi.org/10.1111/j.2517-6161.1975.tb01532.x>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Diao, X., Harttgen, K., & McMillan, M. (2017). The changing structure of Africa's economies. *The World Bank Economic Review*, 31(2), 412–433. <https://doi.org/10.1093/wber/lhw070>
- Diao, X., McMillan, M., & Rodrik, D. (2019). The recent growth boom in developing economies: A structural-change perspective. In M. Nissanke & J. A. Ocampo (Eds.), *The Palgrave handbook of development economics: Critical reflections on globalisation and development*. Palgrave Macmillan.
- Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 74(366), 427–431. <https://doi.org/10.1080/01621459.1979.10482531>
- Durbin, J., & Watson, G. S. (1950). Testing for serial correlation in least squares regression: I. *Biometrika*, 37(3–4), 409–428. <https://doi.org/10.2307/2332391>
- Durbin, J., & Watson, G. S. (1951). Testing for serial correlation in least squares regression: II. *Biometrika*, 38(1–2), 159–177. <https://doi.org/10.2307/2332325>
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill/Irwin.
- Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, 115(1), 53–74. [https://doi.org/10.1016/S0304-4076\(03\)00092-7](https://doi.org/10.1016/S0304-4076(03)00092-7)
- International Labour Organization. (2024). *World employment and social outlook: Trends 2024*. International Labour Office. <https://doi.org/10.54394/HQAE1085>
- Jarque, C. M., & Bera, A. K. (1980). Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Economics Letters*, 6(3), 255–259. [https://doi.org/10.1016/0165-1765\(80\)90024-5](https://doi.org/10.1016/0165-1765(80)90024-5)
- Jarque, C. M., & Bera, A. K. (1987). A test for normality of observations and regression residuals. *International Statistical Review*, 55(2), 163–172. <https://doi.org/10.2307/1403192>



- Kenya National Bureau of Statistics. (2023). *Economic survey 2023*. Kenya National Bureau of Statistics.
- Lewis, W. A. (1954). Economic development with unlimited supplies of labour. *The Manchester School*, 22(2), 139–191. <https://doi.org/10.1111/j.1467-9957.1954.tb00021.x>
- Lucas, R. E., Jr. (2004). Life earnings and rural–urban migration. *Journal of Political Economy*, 112(S1), S29–S59. <https://doi.org/10.1086/379942>
- McMillan, M., Rodrik, D., & Verduzco-Gallo, Í. (2014). Globalization, structural change, and productivity growth, with an update on Africa. *World Development*, 63, 11–32. <https://doi.org/10.1016/j.worlddev.2013.10.012>
- Munga, B., Nyanjom, O., Onsomu, E. N., & Mwabu, G. (2012). *Youth unemployment, underemployment and decent work in Kenya*. Kenya Institute for Public Policy Research and Analysis.
- Organisation for Economic Co-operation and Development. (2021). *International migration outlook 2021*. OECD Publishing. <https://doi.org/10.1787/29f23e9d-en>
- World Bank. (2019). *World development report 2019: The changing nature of work*. World Bank. <https://doi.org/10.1596/978-1-4648-1328-3>
- World Bank. (2023). *Kenya country economic memorandum 2023: Seizing Kenya's services momentum*. World Bank.
- World Bank. (2026). *Vulnerable employment, total (% of total employment) (modeled ILO estimate) [Data set]*. World Development Indicators. World Bank.