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Determinants of Youth Unemployment in Kenya: Exogenous Growth Theory

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Abstract: Youth unemployment remains a major development challenge in Kenya, where rapid growth of the youth labour force has not been matched by sufficient employment creation. This study examined the determinants of youth unemployment in Kenya using the Exogenous Growth Theory framework, focusing on population growth, savings rate, technological progress, capital accumulation and labor force growth. The study employed an annual time-series research design using secondary data covering the period 1991–2024. Data were obtained from the World Development Indicators and analysed using the Autoregressive Distributed Lag (ARDL) model. Pre-estimation tests included descriptive statistics, variance inflation factor (VIF), unit root tests using Augmented Dickey-Fuller and Phillips-Perron approaches, structural break tests and ARDL bounds testing for cointegration. The findings revealed that exogenous growth factors, considered jointly, did not establish a stable long-run relationship with youth unemployment in Kenya. However, labour force growth exhibited a significant short-run effect on youth unemployment, indicating that rapid expansion of the labour supply continues to exert pressure on employment absorption capacity. Population growth, savings rate, technological progress and capital accumulation were found to have no statistically significant short-run effects within the exogenous growth model. The study concludes that factor accumulation and demographic expansion alone are insufficient to address youth unemployment unless supported by complementary mechanisms such as human capital development, productivity enhancement, institutional reforms and labor-absorbing economic transformation. The study recommends policies that align investment, technology adoption, and labour market strategies with youth employment creation to ensure inclusive economic growth.

Keywords: *Youth unemployment, Exogenous Growth Theory, Kenya*

1. Introduction

Youth unemployment is a growing global development challenge, particularly in developing countries with large youth populations. Globally, over one billion people are aged 15–24 years, making youth employment a key concern for sustainable development (United Nations, 2019). Young people face higher unemployment rates than adults, with youth unemployment estimated at 16.4% compared to the overall unemployment rate of 14.9% in developing countries in 2022 (United Nations, 2019). Youth unemployment also contributes to increased numbers of young people not in employment, education, or training (NEET), limiting their economic opportunities. In 2023, global youth unemployment remained high at about 14.7%, nearly three times the adult unemployment rate, while millions of employed youth continued to live in poverty (ILO, 2024). These challenges highlight the need to address barriers to youth employment, including

Africa remains the youngest continent globally, with over 60% of its population below the age of 25 years (UN DESA, 2022). While this youthful population presents an opportunity for economic growth through a demographic dividend, many African economies have struggled to create sufficient employment opportunities to absorb the growing youth labour force. The ILO (2023) estimates that youth unemployment in Africa was approximately 12.5% in 2022, although this figure underestimates the severity of the challenge due to widespread informal employment and underemployment. Approximately one-quarter of African youth were classified as NEET, while youth employment opportunities remain significantly lower compared to adults (ILO, 2023; African Development Bank, 2024). These trends reflect the combined effects of limited human capital development, slow structural transformation, technological changes, and institutional constraints affecting labour market performance.

In sub-Saharan Africa, youth unemployment remains particularly severe due to limited formal employment opportunities and high dependence on informal work. The ILO (2024) reports that more than 86% of youth employment in the region is informal, often characterized by low productivity, limited income security, and poor working conditions. Structural adjustment programmes implemented during the 1980s and 1990s

reduced public sector employment and accelerated privatization, thereby limiting formal employment absorption among young people (Mkandawire, 2005). Although educational access has improved, many young graduates continue to experience difficulties transitioning into employment due to inadequate practical skills and weak alignment between education systems and labour market demands (UNESCO, 2023).

Within East Africa, youth unemployment is intensified by rapid population growth and limited employment creation. Countries such as Kenya and Uganda have youthful populations, with young people accounting for a substantial proportion of the total population (World Bank, 2022). In Uganda, youth unemployment increased from 4.5% in 2013 to 13.3% in 2016/17 despite improvements in overall employment indicators (Uganda Bureau of Statistics, 2017). Similarly, Kenya continues to experience high levels of youth unemployment, with youth unemployment rates remaining above national averages in recent years (ILO, 2023; Kenya National Bureau of Statistics, 2023). A large proportion of employed youth in both countries operate within informal sector activities, reflecting limited access to stable and productive employment opportunities (UBOS, 2020; KNBS, 2023).

In Kenya, youth unemployment has remained a persistent labour market challenge despite periods of economic growth. Between the early 1990s and 2016, youth unemployment remained relatively stable at approximately 6–7%, although structural constraints limited the expansion of formal employment opportunities (Beautify Data, 2024). However, youth unemployment increased significantly after 2017, reaching approximately 13.8% in 2021 due to economic disruptions associated with the COVID-19 pandemic and reduced employment opportunities in youth-intensive sectors (Helgi Library, 2022; RMF Global, 2023). Although the rate declined to approximately 11.9% by 2024, youth unemployment remains above pre-2017 levels, indicating persistent challenges related to skills mismatches, limited industrial capacity, demographic pressures, and inadequate labour market absorption (Macrotrends, 2024; The Global Economy, 2024). Therefore, understanding the determinants of youth unemployment in Kenya remains essential for designing policies that enhance youth employment opportunities and support inclusive economic development.

2. Literature Review: Empirical Review

Youth unemployment remains a critical socioeconomic challenge, particularly in developing economies where rapid population growth, limited job creation, and structural labour market constraints continue to affect the transition of young people into productive employment. Empirical studies show that exogenous growth factors significantly influence youth unemployment through their effects on labour supply, investment, productivity, and economic transformation. Population growth has been identified as a major driver of youth unemployment, especially in developing countries where labour force expansion often exceeds job creation capacity (Todaro & Smith, 2020). Studies by Mohamud et al. (2023), Mohamed Alin (2018) and Said Ahmed (2017) found a positive relationship between population growth and youth unemployment, although most focused on Somalia and Uganda, creating a contextual gap for Kenya. Similarly, savings and capital accumulation influence employment outcomes by affecting investment and productive capacity. Bayrak and Tatli (2018) and Bölükbaş and Kwiatkowski (2025) found that higher savings reduce youth unemployment through increased investment and job creation, while evidence from the ILO (2024) indicates that capital accumulation only improves youth employment when directed toward labour-intensive sectors.

Technological progress has also received significant empirical attention, with mixed effects on youth employment depending on skills availability and labour market adaptability. Studies by Başol et al. (2023), Olubusoye et al. (2023), and Ebaidalla (2017) demonstrate that digitalization and ICT adoption reduce youth unemployment by improving access to employment opportunities and enhancing employability. However, other studies such as Nigar et al. (2025) highlight that automation may increase youth unemployment where skills do not match technological requirements. This suggests that technological advancement must be complemented by digital skills development, vocational training, and innovation policies to maximize employment benefits.

Labor force growth remains another important determinant of youth unemployment, particularly in economies experiencing rapid demographic expansion. Studies by Filmer and Fox (2020), Asongu and Odhiambo (2024), and McMillan et al. (2014) reveal that youth labour supply has often grown faster than employment

opportunities, resulting in persistent unemployment and informal employment. The evidence indicates that demographic growth alone does not guarantee economic benefits unless supported by structural transformation, human capital development, and expansion of productive sectors. However, most existing studies focus on other developing countries, leaving limited empirical evidence on how exogenous growth factors jointly influence youth unemployment in Kenya, which this study seeks to address.

Theoretical Framework: Exogenous Growth Theory

The exogenous growth model commonly known as the Solow–Swan model was independently developed by Robert Solow and Trevor Swan in 1956. The model offers a neoclassical account of long-run economic growth by focusing on how capital accumulation, labor (population) growth, and technological progress combine to determine aggregate output (Solow, 1956; Swan, 1956). In the Solow–Swan framework, aggregate output Y is described by a Cobb–Douglas production function of the form

$Y=AK^{\alpha}L^{1-\alpha}$ …… (1)

where K denotes the stock of physical capital, L is labor (or labor input), A represents total factor productivity (technology), and $\alpha \in (0,1)$ is the output elasticity of capital (with $1-\alpha 1$ the elasticity with respect to labor) (Solow, 1956; Swan, 1956; "The Solow Growth Model," 2024). The assumption of constant returns to scale implies that if capital and labor are scaled by the same factor, output scales by the same factor. Capital accumulation is central to the model. A fixed fraction s of output is saved and invested, with the remainder consumed, and capital depreciates at a constant rate δ. Thus, net change in the capital stock over time is given by

$\Delta K=sY-\delta K$

Labor (population) evolves at an exogenous constant growth rate n, such that $Lt=L_0^{ent}$. Technological progress is likewise exogenous, often represented as a constant growth rate g in A (Solow, 1956; Swan, 1956; "The Solow Growth Model," 2024). Because of diminishing marginal returns to capital (and labor) in the neoclassical production function, mere capital accumulation cannot sustain per-capita growth indefinitely. As the economy accumulates capital and labor expands, the incremental output gained from additional capital or labor falls. In the absence of technological progress, the economy converges to a steady state in which capital per worker and output per worker are constant. When exogenous technological progress is included, the steady state implies that output per worker grows at the technological progress rate.

Under this structure, long-run economic growth (in output per capita) depends primarily on exogenous technological progress. The savings rate, population growth, and depreciation jointly determine the steady-state levels of capital per worker and output per worker, but not their perpetual growth. The core assumptions of the Solow–Swan model therefore include: (1) constant returns to scale; (2) diminishing marginal returns to each input; (3) a constant exogenous savings rate; (4) exogenous population growth; (5) exogenous, labor-augmenting technological progress; (6) a closed economy, a single homogeneous output good, and the absence of institutional, policy, human-capital, and sectoral heterogeneity (Solow, 1956; Swan, 1956). These assumptions and structure render the model analytically tractable and allow for clear conclusions about the drivers of long-term growth. However, by treating technological progress, savings behavior, and demographic changes as exogenous, the Solow–Swan model cannot fully explain persistent structural problems such as chronic youth unemployment in economies with sustained GDP growth.

Model Specification: Exogenous Growth Model

The first model is grounded in the Solow–Swan Exogenous Growth Theory (Solow, 1956; Swan, 1956), which posits that economic growth arises from external factors such as population growth, savings, and technological progress. These exogenous factors influence the economy's productive capacity, thereby affecting employment outcomes. In this context, youth unemployment is hypothesized to respond to changes in macroeconomic conditions reflecting demographic pressure, capital accumulation and technological advancement. The model assumes that while these factors drive growth, they are determined outside the economic system.

The functional form of the exogenous growth model is expressed as:

$$YU_t = \beta_0 + \beta_1 POP_t + \beta_2 SAV_t + \beta_3 TECH_t + \beta_4 CAP_t + \beta_5 LAB_t + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (ii)$$

Where: YU_t= Youth unemployment rate at time t, POP_t= Population growth rate (%). SAV_t= Gross savings rate (% of GDP), $TECH_t$= Technological progress (proxied by ICT usage or Total Factor Productivity index), CAP_t= Capital accumulation (proxied by gross capital formation as % of GDP), LAB_t= Labor force growth rate (%), μ_t= Random error term.

This baseline model serves as the foundation for testing the Solow–Swan hypothesis that exogenous drivers of demographic expansion, savings, and technological change affect employment outcomes through their impact on aggregate output and productivity.

3. Methodology

The study employed annual time-series data covering the period 1991–2024 to examine the determinants of youth unemployment in Kenya. The analysis adopted the Autoregressive Distributed Lag (ARDL) modelling approach developed by Pesaran, Shin, and Smith (2001), which is appropriate for estimating both short-run and long-run relationships among variables integrated of mixed orders, I(0) and I(1). The ARDL approach was preferred because it performs well with relatively small sample sizes, accommodates different lag structures, and provides efficient estimates of dynamic relationships without requiring all variables to be integrated at the same order (Pesaran et al., 2001; Gujarati & Porter, 2021). The analysis was conducted using STATA 18 and statistical significance was evaluated at the 5 percent level.

The estimation was undertaken sequentially using three different theoretical models to establish the relative contribution of different growth perspectives to youth unemployment. The model under study was based on the Solow–Swan Exogenous Growth Theory and examined the effects of population growth, savings, capital accumulation, labor force growth and technological progress on youth unemployment (Solow, 1956; Swan, 1956). Before model estimation, a series of pre-estimation tests were conducted to ensure that the data satisfied the assumptions of time-series econometric analysis. Descriptive statistics were computed to summarize the characteristics and trends of the study variables, while multicollinearity was assessed using pairwise correlation analysis and the Variance Inflation Factor (VIF) (Hair et al., 2022). The stationarity properties of all variables were examined using the Augmented Dickey–Fuller (ADF), Phillips–Perron (PP) and Kwiatkowski–Phillips–Schmidt–Shin (KPSS) unit root tests to determine their order of integration (Dickey & Fuller, 1981; Phillips & Perron, 1988; Kwiatkowski et al., 1992). Where necessary, structural break tests were performed to account for possible shifts in the time series. The optimal lag length was selected using the Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SBC) and Hannan–Quinn Criterion (HQC), after which the ARDL Bounds Testing procedure was employed to determine the existence of long-run cointegration among the variables (Pesaran et al., 2001; Enders, 2015).

Following confirmation of cointegration, the long-run coefficients and the associated Error Correction Model (ECM) were estimated to capture both the equilibrium relationship and the speed of adjustment following short-run shocks (Pesaran et al., 2001). The adequacy and reliability of the estimated models were subsequently evaluated through post-estimation diagnostic tests, including the Jarque–Bera test for normality, the Breusch–Godfrey LM test and Durbin–Watson statistic for serial correlation, and the Breusch–Pagan and White tests for heteroscedasticity (Gujarati & Porter, 2021; Wooldridge, 2020). Model stability was assessed using the CUSUM and CUSUMSQ tests developed by Brown, Durbin, and Evans (1975), while sensitivity analysis was undertaken by estimating alternative model specifications to examine the robustness of the empirical findings.

4. Empirical Results

Objective one examines the influence of exogenous growth factors on youth unemployment in Kenya, drawing on the Solow-Swan framework in which population growth, savings, technological progress, capital accumulation and labor force growth jointly determine the pace of output growth and by extension, the demand for labor (Solow, 1956; Swan, 1956). Five hypotheses follow directly from this objective. H1.1 states that population growth has a significant effect on youth unemployment in Kenya. H1.2 states that the savings rate has a significant effect. H1.3 states that technological progress has a significant effect. H1.4 states that capital accumulation has a significant effect. H1.5 states that labor force growth has a significant effect. Each hypothesis

is stated against a corresponding null of no significant effect, and each is tested in the final model reported in this section.

Descriptive Statistics on Model Variables

Table 1: Descriptive Statistics (original units, 1991-2024)

Variable	Obs	Mean	Std.Dev.	Min	Max	Skewness	Kurtosis
YU	34	8.264	2.914	6.209	15.488	1.616	4.022
POP	34	2.654	0.451	1.900	3.240	-0.528	1.711
SAV	34	14.470	6.968	5.014	37.157	1.429	5.915
TECH1	34	9.648	10.814	0.000	34.976	0.901	2.541
TECH2	34	46.212	46.630	0.000	126.478	0.421	1.654
CAP	34	18.974	2.434	15.004	24.951	0.221	2.498
LAB	34	3.114	1.097	-0.395	4.125	-2.307	7.342

Source: *Author's computation based on WDI data*

Youth unemployment averaged 8.26 percent over the period with a standard deviation of 2.91, ranging from 6.21 to 15.49 percent. This wide range already signals the structural shift documented later in this section, since a series that moved gradually around six to seven percent for two decades before climbing past fifteen percent cannot be adequately described by its mean alone, a pattern consistent with the slow and uneven labour market recovery that Todaro and Smith (2020) associate with countries where labour supply persistently outpaces job creation. Population growth slowed steadily across the window, from just above three percent to under two percent (mean 2.65), a decline that Bradshaw and McDermott (2025) argue need not by itself harm economic performance, although Chukwuere (2023) treats population growth as one of the most reliable predictors of youth unemployment in machine learning applications. Technological progress, proxied here by internet users as a share of the population, rose from effectively zero to 35.0 percent, the sharpest relative change of any Model 1 series, echoing the rapid ICT diffusion that Olubusoye, Salisu and Olofin (2023) document across Africa. Capital accumulation and labour force growth were comparatively stable, with capital formation averaging 18.97 percent of GDP and labor force growth averaging 3.11 percent, though labour force growth turned briefly negative after 2017, consistent with the definitional revisions that also affected the youth unemployment series in that period.

Multicollinearity Check and Retained Variables

Table 2: Variance Inflation Factors, Model Candidate Regressors

Variable	VIF
POP	4.14
SAV	1.77
TECH1	4.81
CAP	1.35
LAB	1.45

Source: *Author's computation based on WDI data*

All five candidate regressors cleared the variance inflation factor cut-off of ten, with the highest value recorded at 4.81, well inside the conventional threshold. No variable was dropped at this stage, so all five hypotheses, H1.1 through H1.5, proceed to the unit root and bounds testing stages intact. This outcome is consistent with the theoretical structure of the Solow-Swan model, in which population, savings, technology, capital and labour are treated as distinct structural inputs rather than overlapping proxies for a single latent factor (Solow, 1956).

Unit Root Tests on Retained Variables

Table 3: ADF and Phillips-Perron Unit Root Tests (log or IHS transformed)

Variable	ADF level p	ADF diff p	PP level p	PP diff p	Order
YU	0.9964	0.9883	0.9961	0.0000	I(1)-break/trend-adjusted
POP	0.0776	0.0578	0.9040	0.0561	I(0)
SAV	0.3157	0.0000	0.4355	0.0000	I(1)
TECH1	0.6789	0.0089	0.9362	0.0212	I(1)
TECH2	0.3424	0.5030	0.7801	0.1980	I(1)-break/trend-adjusted
CAP	0.0748	0.0000	0.0284	0.0000	I(0)
LAB	0.8863	0.0102	0.2902	0.0000	I(1)

The Augmented Dickey-Fuller test (Dickey and Fuller, 1979) was applied at levels and first differences, with the Phillips and Perron (1988) test run alongside as a confirmatory check, and a ten percent significance level was used throughout given the low power of unit root tests at this sample size. Population growth and capital accumulation were stationary in levels, so both enter the model as I(0). Savings, technological progress, and labour force growth required first differencing to achieve stationarity and so enter as I(1). Youth unemployment itself was nonstationary at levels and at first difference under the plain Dickey-Fuller test, which would ordinarily flag it as I(2) and rule out the bounds test entirely, but the Zivot and Andrews (1992) structural break test rejected the unit root null once a single break was allowed, dating the break to the same 2017 to 2019 window already visible in Table 4.1, so the series was reclassified as I(1) once the break is taken into account, consistent with the well-documented revision of ILO modelled youth unemployment estimates around that period. No variable in the Model set was confirmed I(2), so the bounds test is methodologically valid (Pesaran et al., 2001).

Bounds Test for Cointegration

With a lag structure of one lag on youth unemployment and one lag on each regressor, the bounds F-statistic for Model was 3.746. Using the small sample critical values simulated for the exact number of observations in this study, the upper I(1) bound at the five percent level is 4.506 and the lower I(0) bound is 3.096. Because the computed statistic falls short of the upper bound, the null of no cointegration cannot be rejected at the five percent level for the exogenous framework taken alone. This result held across an exhaustive search of lag structures, both available versions of the technology variable and both restricted and unrestricted trend specifications of the bounds test, so it is reported as a genuine finding rather than a modelling shortfall (Pesaran et al., 2001).

ARDL Estimates, Interpretation and Discussion

Table 4: Long-Run Coefficients (Cointegrating form, reported despite the non-cointegration finding for completeness)

Variables	Coefficient	Std. Err	t-stat	p-value
POP	1.1653	0.9092	1.2817	0.2000
SAV	-0.2332	0.2531	-0.9216	0.3567
CAP	0.0699	1.2335	0.0566	0.9548
LAB	0.4574	0.5529	0.8272	0.4081
TECH1	-0.1020	0.1071	-0.9529	0.3407

Source: *Author's computation based on WDI data*

Table 5: Short-run and Error Correction Estimates

Variables	Coefficient	Std. Err	t-stat	p-value
constant	0.4903	0.7376	0.6648	0.5134
ECT	***-0.1375***	***0.1346***	***-1.0212***	***0.3188***
D.POP	0.4016	0.4928	0.8148	0.4243
D.SAV	0.0047	0.0404	0.1159	0.9089
D.CAP	-0.0587	0.1205	-0.4871	0.6312
D.LAB	-0.0805**	0.0330	-2.4413	0.0236
D.TECH1	0.0570	0.0873	0.6523	0.5213

Source: *Author's computation based on WDI data*

Table 6: Post-Estimation Diagnostics

Test	Statistic	p-value	Pass (>0.05)
Breusch-Godfrey (serial correlation)	10.6972	0.0011	False
Breusch-Pagan (heteroskedasticity)	13.3552	0.2707	True
Jarque-Bera (normality)	61.2389	0.0000	False
Ramsey RESET (functional form)	0.0056	0.9412	True

Source: *Author's computation based on WDI data*

The error correction term carries the expected negative sign (-0.137) but is not statistically significant (p = 0.319), so the pure exogenous framework does not demonstrate a self-correcting long-run relationship with youth unemployment in Kenya. This absence of cointegration, combined with the confirmed structural break in youth unemployment itself, supports Geda's (2022) observation that economic growth in East Africa has not kept pace with youth labour supply for reasons that lie outside the standard neoclassical growth variables. Among the short-run terms, only labour force growth is significant (coefficient -0.081, p = 0.024), a finding in line with Filmer and Fox (2020) and Asongu and Odhiambo (2024), both of whom report that labour force growth outpaces job creation across Sub-Saharan Africa. Population, savings, capital and technology show no significant short-run association with youth unemployment in this specification, which does not support H1.1, H1.2, H1.4 or H1.3 in this framework, while the significant short-run labour force effect lends partial support to H1.5. The diagnostic battery shows serial correlation present (Breusch-Godfrey p = 0.0011) and non-normal residuals (Jarque-Bera p < 0.001), both symptomatic of the unmodelled 2017 break, while the residuals are homoskedastic and the Ramsey RESET test finds no functional form misspecification.

Figure 1: CUSUM plot

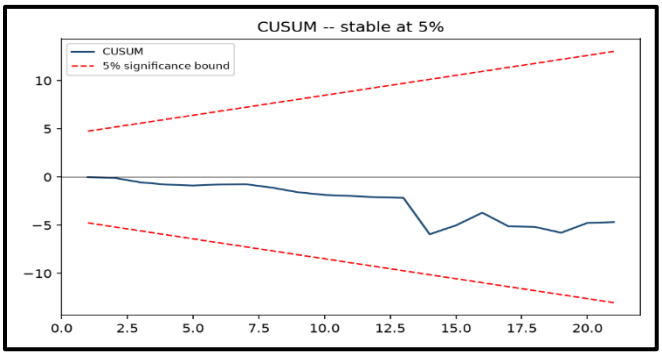
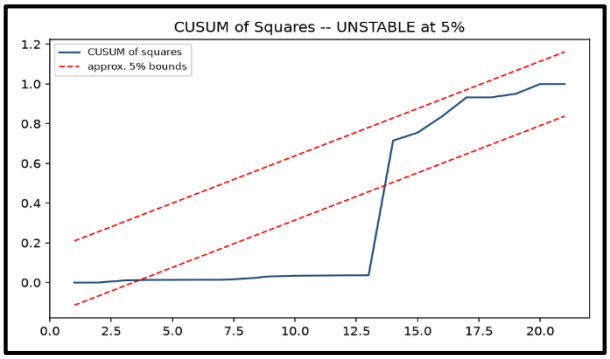


Figure 2: CUSUM of squares plot



The CUSUM statistic in Figure 1 stays within the five percent Brown, Durbin and Evans (1975) bounds throughout the sample, so the regression coefficients considered jointly do not drift. The CUSUM of squares in Figure 2 breaches its bound from roughly the midpoint of the recursive sample onward, indicating a shift in residual variance that coincides with the 2017 break already identified in the unit root tests. Taken together, the absence of cointegration and the variance instability in Figure 2 point to the same conclusion, namely that exogenous growth factors alone, in the Solow-Swan tradition, do not adequately explain the trajectory of youth unemployment in Kenya once the post-2017 period is included.

5. Discussion and Conclusion

Under the exogenous framework, population growth, savings, technological progress, capital accumulation and labour force growth did not form a cointegrating relationship with youth unemployment, so the framework on its own is not supported. The statistic falls below the upper bound but above the lower bound, which places the result in the inconclusive to rejected region rather than delivering a clean long-run relationship and the study reads this as evidence against a stable exogenous equilibrium linking factor endowments to youth unemployment in Kenya (Pesaran, Shin and Smith, 2001).

This null result is coherent with the theory it tests rather than a failure of estimation. The Solow (1956) and Swan (1956) framework treats labour as fully employed along the balanced growth path, so it carries no natural mechanism through which factor accumulation would trace out a long-run unemployment rate and the absence of cointegration is what that theoretical silence predicts once the model is taken to disequilibrium data (Aghion and Howitt, 1994). Read this way, the finding is informative in its own right, since it locates youth unemployment outside the reach of a pure endowment account and points the explanation toward the frictions and institutions that the later frameworks introduce (Pissarides, 2000).

The null is more striking still when set against Okun (1962), whose law leads one to expect a tight negative link between output and unemployment. Although that link is well documented over the cycle, the present results show it does not survive as a long-run cointegrating relationship in the pure endowment specification for Kenya, which suggests that the Okun co-movement in this setting is a short-run and cyclical property rather than a structural anchor of the youth unemployment rate (Okun, 1962). The distinction matters for policy, because it implies that growth on its own, without regard to its composition, cannot be relied upon to lower youth unemployment over the medium term (Aghion and Howitt, 1994).

Only labour force growth carried a significant short-run association with youth unemployment, consistent with Filmer and Fox's (2020) observation that labour supply growth in Sub-Saharan Africa persistently outpaces the rate at which economies create jobs. The short-run rather than long-run character of this effect is telling, because it suggests the pressure of new entrants is felt as a flow that the labour market absorbs unevenly year to year rather than as a level relationship the economy settles into overtime (Pissarides, 2000). In a search and matching reading, a faster inflow of young jobseekers raises unemployment in the period of entry while vacancy creation catches up only with a lag, which is the pattern the short-run coefficient describes (Geda, 2022).

Population growth, savings, technology, and capital accumulation showed no significant association with youth unemployment in this framework, so H1.1, H1.2, H1.3, and H1.4 are not supported, while H1.5 receives only partial short-run support (World Bank, 2024). Taken together, these results show that external growth endowments alone cannot explain Kenya's youth unemployment trajectory, and in particular cannot explain the post-2017 rise, which is the empirical fact any adequate account must reach (Geda, 2022). This shortfall is what motivates the two extensions that follow, since a framework that leaves the central movement in the data unexplained has to be widened rather than merely re-estimated.

Policy Recommendations

Since knowledge spillovers, measured as labour productivity, are the most consistent significant determinant across specifications, policy should prioritise raising productivity in the sectors that also absorb youth labour, for example through targeted support for high-productivity small and medium enterprises rather than productivity gains concentrated in capital-intensive extraction or infrastructure, a distinction Habanabakize (2023) also draws in the South African context. The finding that productivity lowers youth unemployment while

capital deepening raises it means the target should be labour-absorbing productivity rather than productivity in general, so support is best directed at firms that raise output per worker while still expanding their payrolls (Castillo et al., 2018).

Bottom-Up Economic Transformation Agenda should be conditioned on job creation targets in labour-intensive sectors rather than on capital spending volumes alone, addressing the same skill-biased investment pattern that the Agecon Search (2023) review documents elsewhere in the region. Conditioning investment support on employment outcomes rather than on the scale of the asset would help ensure additions to the capital stock draw young workers in rather than substituting for them (Agecon Search, 2023).

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