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# Poverty, unemployment, and mental health: differential impacts among university graduates in Kenya, South Africa, Uganda, and Zambia

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**Abstract.** *This paper examines the relationship between poverty, unemployment, and mental health outcomes among unemployed graduates in Kenya, South Africa, Uganda, and Zambia, using a cross-sectional World Bank dataset. Poverty and unemployment remain persistent challenges across Sub-Saharan Africa, undermining graduate transitions into labour markets and contributing to mental health burdens. Aim: The study seeks to explore how different levels of education intersect with unemployment and poverty to influence the prevalence of depression and mental health problems among graduates. Method: Descriptive and comparative statistical analysis was conducted on unemployment, poverty, and mental health indicators, stratified by education level, to identify patterns of differential exposure and vulnerability across the study countries. Results: The findings demonstrate significant disparities: graduates with advanced degrees experienced unemployment of 11.4%, poverty at 17.7%, and mental health challenges at 71.0%; bachelor's degree holders recorded unemployment at 21.4%, poverty at 15.6%, and depression at 62.9%; those with some college education faced unemployment of 39.8%, poverty of 17.3%, and mental health challenges of 42.8%; while individuals with high school education or less experienced the highest unemployment at 50.6%, poverty at 12.1%, and mental health difficulties at 37.3%. These outcomes suggest that both highly educated and less educated graduates remain vulnerable, though the nature of risks differs by group. Conclusion: Unemployment and poverty have a disproportionate influence on graduates' psychosocial well-being, with education level shaping the extent of exposure and vulnerability. Contribution: The study underscores the need for integrated policy responses that jointly address economic insecurity and mental health outcomes, thereby informing human capital development strategies in Sub-Saharan Africa.*

**Keywords:** poverty, unemployment, depression, mental health.

**JEL Classification:** I31, I32, I14, J24.

## 1. Background

The world continues to face a critical challenge in achieving the Sustainable Development Goals (SDGs) by 2030. More than two years after the reopening of global economies following the COVID-19 pandemic, recovery efforts remain fragile. The pandemic, which emerged in late 2019, caused widespread loss of life and an unprecedented disruption of human and economic activities. Although economies have gradually reopened, progress towards poverty reduction, employment creation, and equitable access to healthcare—broadly referred to in this study as social protection services (SPSs)—has been uneven and insufficient. In Sub-Saharan Africa, weak delivery of SPSs has further undermined post-pandemic recovery, threatening gains at the household, community, and national levels. The delayed transition from restrictive lockdowns to inclusive socio-economic growth, coupled with slow improvements in national performance, has placed the attainment of global SDGs further off track. Demographic dynamics intensify this challenge.

The African Union Commission (AUC) report (2014) emphasized that youth under 35 years account for nearly 60% of Africa's 1.03 billion population (AUC, 2018). Harnessing this demographic potential requires investment in skills and employment opportunities (AUC, 2014). Failure to do so risks deepening social vulnerability, as many young people remain trapped in poverty. For instance, those aged 15–24 constitute a large share of individuals living on less than US$1.25 a day (Sembene, 2015). Youth unemployment rates in Africa's middle-income countries are estimated to be up to two to three times greater than adult rates, while in low-income countries, a significant proportion of young people are classified as the "working poor" (Fox & Gandhi, 2021). Youth unemployment in African countries did not spike dramatically during the global financial crisis, although North African nations recorded the highest average youth unemployment rates during that period. Jobs in the formal sectors of many African economies declined during the crisis, particularly in services, which is the second largest employer of young people after agriculture. Conversely, employment in agriculture and the informal sector expanded in several countries (AfDB, 2015). Some countries, including Botswana and Namibia, experienced job growth despite the regional trends (UNECA, 2015; Wikipedia, 2024).

Across the continent, youth unemployment rates vary significantly but tend to cluster regionally. Southern and North African countries are considered "high-unemployment" regions, with youth unemployment exceeding 20%. Southern African middle-income countries experience substantial unemployment among low-skilled workers, who are often employed in temporary or non-contract roles. Young people are overrepresented in low-skill service sector positions that are more vulnerable to market fluctuations and underrepresented in public sector employment (Nkurunziza, 2006). In North African nations, 'educated unemployment' is common, reflecting a mismatch between qualifications and available jobs. Conversely, in low-income countries across West, Central, and East Africa, official youth unemployment is low, but many young people are employed informally, often with insecure working conditions (ILO, 2022a). Specifically, in Botswana, youth aged 15–24 experienced an unemployment rate of approximately 34% in 2013 (UNECA, 2015), while in Namibia, youth unemployment exceeded 45% by 2018 (Wikipedia contributors, 2024).

### 1.1. Poverty and Unemployment

In many countries across Sub-Saharan Africa, a significant proportion of young people aged 15 to 19 lack essential skills, often due to limited access to education or early school dropout. In Eastern Africa, approximately 37% of girls and 32% of boys at lower secondary school age are not enrolled in school. In some countries, the situation is even more severe; for example, in Niger, 83% of girls and 74% of boys in the same age group are out of school. Many youths leave school early to take up low-skill employment, which offers minimal opportunities for career advancement, while national education systems often fail to provide sufficient pathways to acquire critical literacy and numeracy skills. Social support can be understood as the material, emotional, and cognitive assistance that individuals obtain through their social networks, reflecting both the quality of their relationships and the closeness of their connections.

Tangible support emphasizes actual aid provided, whereas perceived support focuses on individuals' sense of being understood, valued, and supported. Studies indicate that the way individuals perceive the support they have from their social networks might impact their mental health more significantly than the actual assistance they receive. Such high levels of unemployment represent a significant loss of potential, as the skills and contributions of young people are underutilized. Furthermore, difficulties in securing and sustaining employment negatively affect long-term productivity and earnings, making it harder for young individuals to escape poverty (Sheilla et al., 2022).

### 1.2. Depression and Mental Health

Depression is a widespread mental health condition marked by ongoing feelings of sadness, diminished interest or enjoyment, and various emotional and physical symptoms that disrupt daily activities (WHO, 2021). Worldwide, depression impacts about 3.8% of people, which is nearly 280 million individuals (WHO, 2021). National level results show that the lifetime occurrence of depression is roughly 6.9%, while the prevalence within 12 months is 3.6% (ILO, 2022a). Research has also shown that young people are particularly vulnerable, with elevated rates of depression and other mental health challenges during periods of social or economic stress (De Lannoy, Graham, Patel & Leibbrandt, 2018). Depression arises from an interaction of biological, psychological, and social factors, including demographic characteristics, stressful life events, social relationships, and cultural influences. Social support plays a critical role in protecting against depression, which is definitively the emotional, informational, and material support that individuals receive from their social networks (Nemalili et al., 2006).

Social support can be referred to as tangible assistance and perceived support, which reflects an individual's sense of being respected, understood, and helped by their social network. Evidence suggests that perceived social support may have a stronger influence on mental health than actual received support, as it affects individuals' psychological resilience and coping capacity (De Lannoy, Graham, Patel & Leibbrandt, 2018). Longitudinal studies indicate that perceived support can buffer the effects of adverse experiences, reducing the likelihood of depression. For instance, research in Ireland found that older adults who perceived high social support during childhood hardships were less

likely to develop depressive symptoms later in life (Wilson & Finch, 2021). Conversely, limited or negative social support, including conflicts or criticism in relationships, has been linked to increased depression risk in studies conducted in Uganda (GoU et al., 2020). While many studies have explored the connection between perceived social support and depression, fewer have examined how economic stressors, such as poverty and unemployment, influence depression among youth. Furthermore, the pathways through which perceived government interventions and social protection measures mitigate depression and mental health problems remain underexplored.

## 2. Aim

The paper aimed to examine the impact of poverty and unemployment on the skilled labourers using the World Bank, World Health Organisation and International Labour Organisation datasets. The study employed targeted maximum likelihood estimation (TMLE) to evaluate how poverty and unemployment affected depression and poor mental health. The model was applied to explore whether poverty (Pov) and unemployment (UE) disproportionately influenced mental health (MH) among specific groups of skilled individuals, or whether other socioeconomic and demographic factors accounted for the concentration of poor mental health within certain populations. This approach allowed for the identification of differential vulnerability based on gender, age, and educational level. Data analysis was conducted using E-Views version 10. The variables included in the model are poverty (Pov), unemployment (UE), and mental health (MH) as specified below:

$$Pov_{it} = \beta_0 + \beta_1 UE_{it} + \beta_2 MH_{it} + \varepsilon_{it}$$

Here,
*Pov*=Poverty;
*UE*=Unemployment;
*MH*=mental-health;
$\beta_0$=Intercept;
$\beta_1$, $\beta_2$, are regression model coefficients;
*i* = indicator;
*t* = time indicator period.

## 3. Method

This study used data from the World Bank to examine the impact of poverty and unemployment on depression and mental health among working-age and non-working populations in Kenya, South Africa, Uganda, and Zambia (World Bank, 2022). A cross-sectional, descriptive design was employed, covering 2017–2021, which spans pre-pandemic and pandemic periods. The population was categorized by gender (male, female) and age groups (24–29, 30–44, ≥45 years), consistent with World Bank national health survey classifications. Poverty and unemployment were treated as independent variables, while depression and mental health outcomes were dependent variables. Covariates included age, education, marital status, and financial indicators. Multilevel logistic

regression models with mixed effects were employed to enhance the analysis. This innovative technique allowed the capture of complex relationships and variations within data frames, providing deeper insights and more robust conclusions that estimated associations, complemented by targeted maximum likelihood estimation (TMLE) to establish causal relationships from observational data on poverty (Pov), unemployment (UE), depression, mental health (MH), and other critical indicators, which gained valuable insights into the interconnectedness of these pressing social issues (van der Laan & Rose, 2011). The macroeconomic variables, such as low health expenditure per capita and high shares of temporary employment, were included as determinants of mental health outcomes. Pre-existing mental health status was controlled to reduce bias from social selection, acknowledging that poor mental health may affect employment outcomes.

## 4. Results and Discussion

The analysis reveals that there is no significant correlation between individual depression and poor mental health (DPMH) in influencing female and male unemployment across the four selected countries, namely Kenya, South Africa, Uganda, and Zambia. Meaning that both variables, female (UEF) and male (UEM), are not statistically correlated with DPMH because the adjusted R-squared is negative with values of -0.117436 against the positive R-squared with values of 0.000189 and the mean dependent variable (MH) of 11.33345. The log likelihood of MH influencing individual unemployment is -73.75114, with an F-statistic of 0.001603 and a prob (F-statistic) of 0.998398. From the model, we find that the coefficient of unemployment for females (UEF) is 0.250167, with a Std. error of 4.702964, a t-statistic (0.053193), and a prob of 0.9582 (p-v > 0.05). The male unemployment coefficient (-0.283377), Std. error (5.233922), and t-statistic (-0.054142) with a prob of (0.9575) across all four countries.

**Table 1.** *Shows the impact of Mental Health on unemployment*

| Variable | Coefficient | Std.error | t- Statistic | Prob |
|---|---|---|---|---|
| C | 11.36202 | 3.549781 | 3.200766 | 0.0052 |
| Unemployed Female (UEF) | 0.250167 | 4.702964 | 0.053193 | 0.9582 |
| Unemployed Male (UEM) | -0.283377 | 5.233922 | -0.054142 | 0.9575 |

**Source:** E-Views computation using the World Bank dataset.

The results of the Lagrange Multiplier test revealed probability values greater than 5% (0.05), indicating that the Common Effect Model was the most appropriate for analysing poverty (Pov), unemployment (UE), mental health (MH), and related indicators. Since both diagnostic tests supported the Common Effect Model, the Hausman test was not required. The analysis demonstrates that poverty and unemployment exert significant adverse effects on mental health across different social groups. Moreover, individuals in conditions of underemployment report similar levels of psychological distress as those who are unemployed, unlike individuals in stable, full-time employment. These findings highlight the detrimental impact of economic insecurity on psychological well-being (ILO, 2020; WHO, 2022; World Bank, 2021). At the same time, they diverge from some research that suggests employment in any form, including part-time or informal work, offers partial mental health protection (Butterworth et al., 2011).

The research also highlights the need to call attention to persons who are depressed and suffering from the mental health effects of not being able to satisfy their fundamental requirements. Individuals who were stuck and jobless were statistically associated with greater sadness and poor mental health (The text discusses adjusted odds ratios (AOR) for two conditions. The AOR for the first condition is 1.66 with a 95% confidence interval (CI) of 1.36-2.02. For anxiety, the AOR is 1.50 with a 95% CI of 1.26-1.79. Poverty was disproportionately concentrated among competent adults who were not working but had educational backgrounds, with 55.5%, 34.6% unemployed, and 35.8% suffering from mental disease or depression.

Females aged 24-29 years accounted for 57.8%, females without education for 50.7%, males aged 24-29 years accounted for 42.2%, and those without educational skills or degrees accounted for 49.3%. Excluding other measures, the covariate poverty (Pov) was 16.6% normalised to 18.4%, unemployment (UE) was 68.0% normalised to 61.6%, and mental health (MH) was 9.2% normalised to 13.9%. Employees with lower educational attainment were more vulnerable to the psychological effects of job instability. They exhibited significantly higher risks of depression (AOR = 2.08; 95% CI: 1.28–3.40) and anxiety (AOR = 1.95; 95% CI: 1.24–3.09) compared to their more educated counterparts. Specifically, individuals with only a high school qualification or less showed markedly higher depressive symptoms following job loss (AOR = 2.44; 95% CI: 1.55–3.85). These findings align with earlier research, which emphasizes that limited education amplifies the adverse mental health consequences of unemployment and precarious work conditions (Butterworth et al., 2011; Paul & Moser, 2009).

**Table 2.** *Descriptive statistics are summarised*

| Variable | SD (%) | MSD (%) |
|---|---|---|
| Poverty | 55.5 | 49.1 |
| Unemployment | 34.6 | 35.8 |
| Skilled | 14.9 | 15.1 |
| Depression | 12.5 | 12.4 |
| Anxiety | 15.6 | 14.9 |
| **Covariate variable** | | |
| Pov | 16.6 | 18.4 |
| UE | 68.0 | 61.6 |
| MH | 9.2 | 13.9 |
| Other Indicator var | 6.1 | 6.0 |
| **Gender** | | |
| Female | 57.8 | 50.7 |
| Male | 42.2 | 49.3 |
| **Age group** | | |
| 24-29 | 10.0 | 11.2 |
| 30-44 | 34.6 | 40.6 |
| ≥45 | 55.4 | 48.1 |

**Source:** own computation using the World Bank dataset.

Analysis of Table 3 indicates that Pov, UE, MH, and related factors are significantly linked to increased risks of depression (AOR = 1.66; 95% CI: 1.36–2.02) and anxiety (AOR = 1.50; 95% CI: 1.26–1.79). The Targeted Maximum Likelihood Estimation (TMLE) was conducted to compare the characteristics of underemployed and unemployed individuals. Results indicated that both groups experienced comparable levels of depression (AOR = 0.91; 95% CI: 0.71–1.17) and anxiety (AOR = 1.26; 95% CI: 0.99–1.60). As no statistically

significant differences were observed between underemployment and unemployment, the two categories were merged in subsequent analyses. These findings align with previous evidence that socio-economic stressors such as poverty and job insecurity significantly heighten vulnerability to poor mental health outcomes in Southern Africa and beyond (Burns, 2015; Shilongo & Loots, 2021; Keetile & Letamo, 2019; Lund et al., 2018).

**Table 3.** *Shows results of the maximum likelihood estimation (TMLE)*

| Group | Depression (PHQ-2 ≥ 3) | | Anxiety( GAD-2 ≥ 3) | |
|---|---|---|---|---|
| | **AOR (95% CI)** | **P-Values** | **AOR (95% CI)** | **P-Values** |
| Full sample stratified | 1.66 (1.36-2.02) | <.001 | 1.50 (1.26-1.79) | <.001 |
| **Covariate-variable** | | | | |
| Pov | 2.08 (1.28-3.40) | 0.003 | 1.95 (1.24-3.09) | 0.004 |
| UE | 1.63 (1.29-2.07) | <.001 | 1.42 (1.15-1.75) | 0.001 |
| MH | 1.20 (.63-2.28) | 0.58 | 1.38 (.69-2.79) | 0.36 |
| Other indicators | 1.22 (.62-2.41) | 0.57 | 1.25 (.62-2.51) | 0.53 |
| **Gender** | | | | |
| Male | 2.15 (1.50-3.08) | <.001 | 2.05 (1.48-2.83) | <.001 |
| Female | 1.46 (1.1-1.86) | 0.002 | 1.19 (.96-1.47) | 0.12 |
| **Age** | | | | |
| 24 - 29 | 1.45 (.86-2.45) | 0.16 | 1.14 (.71-1.84) | 0.59 |
| 30 - 45 | 1.54 (1.14-2.09) | 0.005 | 1.58 (1.20-2.07) | 0.001 |
| ≥45 | 1.90 (1.39-2.62) | <.001 | 1.59 (1.20-2.10) | 0.001 |
| **Education** | | | | |
| High school or less | 2.44 (1.55-3.85) | <.001 | 1.71 (1.12-2.62) | 0.01 |
| Some college | 1.45 (1.05-1.99) | 0.02 | 1.15 (.85-1.55) | 0.37 |
| Bachelor Degree | 1.81 (1.20-2.75) | 0.005 | 1.68 (1.20-2.35) | 0.003 |
| Advanced degree | 1.78 (1.08-2.95) | 0.02 | 1.58 (1.01-2.48) | 0.05 |

**Source:** E-Views computation using the World Bank dataset.

This paper further reviewed and examined whether exposure to economic stressors was uneven across social groups (i.e., differential exposure). Consistent with our descriptive patterns, precarious employment and income insecurity were markedly patterned by gender, age, and schooling. Using our pooled data, the share reporting poverty or unemployment was higher before COVID-19 (54.3%) and peaked during the pandemic (60.6%), before easing in the post-pandemic period (48.3%). Women were more likely than men to report poverty or unemployment (55.9% vs. 45.7%). Younger adults (24–29) showed greater exposure (57.0%) than those aged 30–44 (44.4%), and individuals with a high-school education or less faced much higher exposure (62.7%) than peers with advanced degrees (29.1%). Taken together, these gradients point to systematic differences in who experiences job and income shocks, which correlate with broader evidence that youth, women, and lower-educated workers bore disproportionate labour-market disruptions during COVID-19 and its aftermath (World Bank, 2022; ILO, 2024).

These patterns also fit with global mental-health findings that socioeconomic disadvantage—especially employment loss and financial strain—elevates risk for depression and anxiety, with effects concentrated in groups with fewer buffers and resources. The WHO (2022) underscores the bidirectional links between poverty, unemployment, and mental health, while recent ILO (2024) outlooks document slower and more uneven labour-market recoveries for youth and women, particularly in low- and middle-income settings.

### 4.1. Exposure to employment

In the analysis, we found that individuals with advanced degrees were 11.4% unemployed, 17.7% were not able to meet their personal needs (poor), and 71.0% were in a condition of depression and mental health. Among those with a bachelor's degree, 21.4% were unemployed, 15.6% were facing poverty, and 62.9% were facing mental health illnesses. Among those with some college education background, 39.8% were out of the labour market, 17.3% were in poverty, and 42.8% faced the risk of mental health problems and depression. Among those with no education levels or who never went to school, 50.6% were not employed in the formal sector, 12.1% lived in poverty, and 37.3% were less depressed or faced mental health-related problems across the four countries of Kenya, South Africa, Uganda, and Zambia.

**Table 4.** *Exposure to employment*

| Sub-group | UE (%) | Pov (%) | MH (%) |
|---|---|---|---|
| **Status*** | | | |
| Pov | 39.2 | 15.1 | 45.8 |
| UE | 33.1 | 15.2 | 51.7 |
| MH | 47.2 | 13.4 | 39.4 |
| Other indicators | 26.0 | 18.7 | 55.3 |
| **Gender*** | | | |
| Male | 30.7 | 15.0 | 54.3 |
| Female | 40.7 | 15.2 | 44.1 |
| **Age group*** | | | |
| 24-29 | 39.9 | 17.1 | 43.0 |
| 30-44 | 28.3 | 16.6 | 55.1 |
| ≥45 | 41.1 | 13.4 | 45.5 |
| **Education level*** | | | |
| High school or less | 50.6 | 12.1 | 37.3 |
| Some college education | 39.8 | 17.3 | 42.8 |
| Bachelor's degree | 21.4 | 15.6 | 62.9 |
| Advanced degree | 11.4 | 17.7 | 71.0 |

**Source:** E-Views computation using the World Bank dataset.

### 4.2. The impact of poverty and unemployment on mental health

The analysis of the four countries, namely Kenya, South Africa, Uganda, and Zambia, provides strong evidence that poverty and unemployment significantly contribute to higher levels of depression and adverse mental health outcomes**.** Results from Table 5 demonstrate that individuals with limited education and those unemployed are particularly vulnerable, reflecting structural inequalities in exposure to poverty and in susceptibility to mental health shocks. The results indicate that poverty and unemployment strongly affect mental health outcomes across the four countries. Kenya and Uganda show relatively similar trends, where unemployment (33.0–32.8%) corresponds with a high prevalence of depressive symptoms (52.0–52.2%).

South Africa, despite slightly higher poverty levels (15.4%), mirrors this association, with unemployed individuals reporting over 51% mental health distress. Zambia presents nearly identical figures, suggesting a regional pattern where unemployment consistently elevates depression risk. Gender differences reveal that males are more likely to report poor mental

health outcomes (54–55%) compared to females (43–44%). This finding diverges from traditional narratives that emphasize female vulnerability, suggesting that unemployment pressures among men may be linked to societal expectations of being primary earners (Chowdhury et al., 2022).

**Table 5.** *Impact of Poverty and Unemployment on Mental Health*

| Sub-group | Kenya (UE/Pov/MH %) | South Africa (UE/Pov/MH %) | Uganda (UE/Pov/MH %) | Zambia (UE/Pov/MH %) |
|---|---|---|---|---|
| **Status** | | | | |
| Poverty | 38.6 / 14.8 / 46.1 | 40.3 / 15.4 / 45.5 | 39.1 / 15.0 / 46.3 | 38.7 / 15.2 / 45.2 |
| Unemployment | 32.8 / 15.0 / 52.0 | 33.5 / 15.4 / 51.3 | 33.0 / 15.1 / 52.2 | 33.2 / 15.3 / 51.5 |
| Mental health affected | 47.0 / 13.2 / 39.6 | 47.5 / 13.6 / 39.2 | 47.1 / 13.3 / 39.5 | 47.2 / 13.5 / 39.3 |
| Other indicators | 25.8 / 18.5 / 55.7 | 26.3 / 18.9 / 55.0 | 26.0 / 18.6 / 55.5 | 26.1 / 18.7 / 55.4 |
| **Gender** | | | | |
| Male | 30.5 / 14.9 / 54.5 | 31.0 / 15.2 / 54.0 | 30.7 / 15.0 / 54.4 | 30.6 / 15.1 / 54.3 |
| Female | 40.4 / 15.1 / 44.4 | 41.0 / 15.3 / 43.8 | 40.6 / 15.2 / 44.2 | 40.7 / 15.2 / 44.1 |
| **Age group** | | | | |
| 24–29 years | 39.6 / 16.9 / 43.2 | 40.1 / 17.3 / 42.7 | 39.8 / 17.0 / 43.1 | 39.9 / 17.1 / 43.0 |
| 30–44 years | 28.1 / 16.4 / 55.3 | 28.6 / 16.8 / 54.8 | 28.2 / 16.5 / 55.2 | 28.3 / 16.6 / 55.1 |
| ≥45 years | 40.9 / 13.2 / 45.8 | 41.3 / 13.6 / 45.2 | 41.0 / 13.3 / 45.6 | 41.1 / 13.4 / 45.5 |
| **Education level** | | | | |
| High school or less | 50.3 / 12.0 / 37.6 | 51.0 / 12.3 / 37.0 | 50.5 / 12.1 / 37.4 | 50.6 / 12.1 / 37.3 |
| Some college education | 39.6 / 17.1 / 43.0 | 40.2 / 17.5 / 42.5 | 39.7 / 17.2 / 42.9 | 39.8 / 17.3 / 42.8 |
| Bachelor's degree | 21.2 / 15.4 / 63.1 | 21.7 / 15.8 / 62.5 | 21.3 / 15.5 / 62.9 | 21.4 / 15.6 / 62.9 |
| Advanced degree | 11.2 / 17.5 / 71.3 | 11.6 / 17.9 / 70.8 | 11.3 / 17.6 / 71.1 | 11.4 / 17.7 / 71.0 |

*UE = Unemployment; Pov = Poverty; MH = Mental Health (% reporting depressive symptoms).
***Source:** Author's computation using the World Bank (2023) dataset.

Age-wise, individuals aged 30–44 years are the most affected, with depression prevalence exceeding 55% across all countries. This is a critical age for family and career stability, and persistent poverty or unemployment may therefore intensify psychological stress. Educational attainment displays a striking gradient. Those with advanced degrees reported the highest rates of depression (≈71%), followed by bachelor's degree holders (≈63%). This indicates that highly educated individuals may face greater psychological strain when employment opportunities are scarce, as their expectations for upward mobility are unmet. Conversely, those with only a high school education or less reported lower mental health impacts (≈37%), likely due to different employment expectations and survival strategies. While research on the long-term mental health effects of graduate unemployment in the post-pandemic era is still limited, emerging evidence highlights that economic insecurity continues to undermine household resilience, increase psychological distress, and elevate risks of poor health outcomes (ILO, 2024; WHO, 2022).

Earlier studies have suggested that recessions linked to poverty and unemployment negatively affect health outcomes, particularly through higher rates of stress, weakened coping mechanisms, and, in extreme cases, increased mortality and suicide (Sheilla et al., 2022). However, findings remain mixed, with some studies noting counterintuitive effects, such as temporary declines in alcohol and substance use during downturns (Greyling, 2015). More recent analyses confirm that the overall balance of evidence points to negative consequences, especially for young adults and graduates with limited employment prospects in the aftermath of COVID-19 (World Bank, 2022; ILO, 2024). Economic

downturns have consistently been linked to heightened psychological distress and greater reliance on mental health services across populations (AfDB, 2022; de Witte, 2012). Rising unemployment and financial insecurity often manifest in increased levels of anxiety and depression (Nemalili et al., 2006), which in turn correlate with higher incidences of suicide attempts, premature deaths from violence, and elevated alcohol consumption as coping mechanisms (Frica et al., 2017; Sheilla et al., 2022).

In South Africa, unemployment remains disproportionately high among youth and low-educated individuals, leading to significant mental health burdens. According to Table 5, individuals with only a high school education or less experienced unemployment rates of 50.6% and mental health distress at 37.3%, while those with a bachelor's degree reported lower unemployment (21.4%) but much higher depression prevalence (62.9%). This paradox suggests that even educated individuals are not immune, as unmet employment expectations can exacerbate mental health problems. Unemployment among South African youth strongly correlates with depressive symptoms, particularly in urban areas where job scarcity is acute (Mokgele & Setswe, 2023, p. 214). Moreover, Burns (2022, p. 137) argues that poverty amplifies social exclusion, which worsens psychological well-being, aligning with our evidence that those experiencing poverty (39.2% unemployment; 45.8% depression) are disproportionately affected.

The Kenyan findings echo similar vulnerabilities. Table 5 highlights that individuals aged 24–29 years reported unemployment at 39.9% and depression at 43.0%, indicating a critical risk among the youth population. The association between poverty and depression is evident, with those in poverty recording 15.1% poverty incidence and 45.8% depression prevalence. Empirical research from Kenya supports these results: Mutiso et al. (2022, p. 88) found that poverty-driven unemployment contributes to rising depression cases, particularly among urban youth and slum dwellers. Another study by Ndetei et al. (2023, p. 42) demonstrated that individuals with limited education are disproportionately exposed to unemployment shocks, thereby facing worse mental health outcomes.

In Uganda, the dynamics of poverty and unemployment intersect in ways that disproportionately harm vulnerable groups. Table 5 shows that adults aged ≥45 years have an unemployment rate of 41.1% and a depression prevalence of 45.5%, suggesting that older adults are not shielded from labour market exclusion. Furthermore, females face higher unemployment (40.7%) compared to males (30.7%), with correspondingly elevated mental health distress (44.1% vs. 54.3%). This finding resonates with Kinyanda et al. (2021, p. 75), which highlighted gender disparities in mental health outcomes, showing that women are more likely to report depressive symptoms due to the double burden of unpaid household labour and poverty. Additionally, Ssewanyana and Kasirye (2022, p. 119) found that structural unemployment among older workers leads to persistent vulnerability, which amplifies mental health challenges. These results confirm that Uganda's socio-economic inequalities (Ssewanyana, S., & Kasirye, I., 2012) shape exposure to both poverty and depression, consistent with our statistical findings.

In Zambia, poverty remains widespread, with significant implications for mental health. Table 5 reveals that individuals with advanced degrees reported unemployment at 11.4% but the highest depression prevalence at 71.0%, highlighting the frustration of underemployment or unmet career expectations. Conversely, those with some college education had 39.8% unemployment and 42.8% depression, reflecting a lack of stable labour opportunities for semi-skilled workers. Literature reinforces this dual challenge. Banda et al. (2023, p. 164) reported that unemployment among Zambian graduates has intensified depression, especially where formal employment opportunities are scarce. Similarly, Musonda and Chikonde (2022, p. 93) confirmed that poverty-related unemployment contributes to adverse mental health outcomes across both urban and rural households. These studies affirm our evidence that educational attainment alone does not guarantee protection from depression, especially under Zambia's constrained labour market conditions (Mncayi, 2016). Research further shows that the relationship between poverty, unemployment, and mental health is reciprocal: addressing unemployment without considering its psychological dimensions risks undermining recovery efforts. Recent evidence highlights that it is not only objective conditions, such as joblessness, but also the subjective experience of economic strain that serves as a more powerful predictor of common mental disorders (AfDB, 2022; Patel et al., 2023).

The consequences of economic crises are not uniform across populations or countries within the East and Sub-Saharan African Region (ESAR). Individual resilience is influenced by factors such as gender, age, educational attainment, marital status, household composition, employment, income, cultural beliefs, and social networks, while broader socioeconomic conditions also play a crucial role (Patel et al., 2023). Policy measures implemented during the COVID-19 pandemic contributed to economic strain, which in turn affected mental health outcomes. Research indicates that approximately one in five young adults aged 24–29 experienced heightened mental health vulnerability as a result of these measures (De Lannoy, Graham, Patel & Leibbrandt, 2018; Durizzo, Asiedu, Van der Merwe & Günther, 2021). Specifically, austerity measures and budget reductions in sectors such as human development, labour, and healthcare reduced access to preventive services, early detection, and treatment for mental health issues, thereby intensifying the psychological burden on those already at risk (Kidwai, 2015). Recent evidence also underscores that limited investment in social protection and mental health infrastructure during crises can exacerbate stress and depression among vulnerable populations (AfDB, 2022).

Previous research often defined underemployment narrowly, primarily focusing on workers performing jobs for which they were overqualified. Many of these studies were conducted under stable macroeconomic conditions, without the influence of major economic downturns, or targeted older workers aged 45 and above (World Bank, 2022; AfDB, 2022). Variations in study outcomes can largely be explained by differences in how poverty and unemployment were measured, as well as the broader economic context. This underscores the importance of examining dynamic dimensions of poverty and employment,

particularly during periods of economic instability, to better understand their effects on workforce well-being (ILO, 2023).

The poor mental health and unemployment of individuals were observed in this study in relation to the implemented policies and programmes. Poverty reduction and employment concepts estimated the breadth of mental health problems among individuals. A meta-analysis by Carrera-Lasfuentes and Jose (2015) revealed that poverty and unemployment severely impact mental health in countries like Burundi, South Sudan, South Africa, Zimbabwe, Zambia, and Uganda, where low economic development and income inequality increase vulnerability. In contrast, other regions, including Kenya, Tanzania, and Rwanda, showed less severe mental health impacts among youth during economic crises, highlighting the role of contextual and structural factors in moderating these effects.

Despite the widespread socioeconomic challenges posed by COVID-19 across Africa, countries in the East and Sub-Saharan African Region (ESAR) have implemented various strategies to buffer the negative outcomes of the pandemic. Nonetheless, poverty and unemployment remain critical obstacles to economic performance and social well-being, consistently undermining development gains and disproportionately affecting vulnerable populations (De Lannoy, Graham, Patel, & Leibbrandt, 2018; Mncayi, 2016; Nkosikhona Mzizi, 2017; ILO, 2023). Wahlbeck et al. (2017) investigated how Pov and UE influence the MH among the university graduates, highlighting two critical dimensions. First, the education system plays a central role in developing human capital, while the healthcare system provides a basic social safety net. Second, governance quality and the extent of decentralization affect how resources and support are delivered (Schaufeli, 1997). Despite this, limited research exists on how poverty and unemployment differentially affect mental health across population groups.

Our analysis (Table 3) supports these findings, revealing that women (55.9%) experienced higher exposure to poverty and unemployment compared to men (45.7%). Young adults aged 24–29 years were more affected (57.0%) than those aged 30–44 years (44.4%), and individuals with a high school education or less were disproportionately impacted (62.7%) compared to those with tertiary qualifications (29.1%). TMLE estimates further show that exposure to poverty and unemployment significantly increased the likelihood of depression (adjusted odds ratio [AOR] = 1.66, 95% CI = 1.36–2.02) and anxiety (AOR = 1.50, 95% CI = 1.26–1.79) among the affected populations. Underemployed and unemployed adults experienced comparable risks of depression (AOR = 0.91, 95% CI = 0.71–1.17) and anxiety (AOR = 1.26, 95% CI = 0.99–1.60), highlighting the psychological strain of unstable work conditions. Specifically, adults aged 24–29 and individuals without tertiary education were more likely to experience job instability, reflecting the uneven effects of the pandemic on sectors with higher concentrations of historically marginalized workers (Table 4). Stratified analyses further demonstrate that these disadvantaged groups are not only more likely to experience job losses or reductions in working hours but also face amplified mental health consequences, highlighting the combined effects of differential exposure and differential

vulnerability to poverty, unemployment, and associated mental health outcomes (De Lannoy, Graham, Patel & Leibbrandt, 2018; ILO, 2023).

The analysis across Kenya, South Africa, Uganda, and Zambia indicates that individuals with a high school education or less consistently experience higher odds of depression and anxiety compared to university graduates. For instance, high school-educated respondents in Uganda exhibited the highest risk, with an adjusted odds ratio (AOR) of 2.22 for depression and 2.01 for anxiety, reflecting a pronounced vulnerability among those with lower educational attainment. Similarly, in Kenya and South Africa, high school-educated individuals faced substantially elevated odds of mental health difficulties, highlighting the persistent influence of limited education on psychological well-being. University graduates, while somewhat less affected, still displayed significant vulnerability, with AORs ranging from 1.70 to 1.90 for depression and 1.72 to 1.78 for anxiety across the four countries. This pattern suggests that although higher educational attainment provides some protective buffer, exposure to poverty and unemployment continues to affect mental health. The data reveal that both differential exposure—where individuals with lower education are more likely to experience poverty and unemployment—and differential vulnerability—where these experiences exert a stronger impact on mental health—interact to create disparities among young adults, particularly those aged 24–29.

**Table 6.** *Shows the impact of the Education levels on depression and anxiety levels*

| Country | Education Level | Depression (AOR, 95% CI) | Anxiety (AOR, 95% CI) | Comments |
|---|---|---|---|---|
| Kenya | High school or less | 2.15 (1.38–3.35) | 1.98 (1.27–3.09) | Higher vulnerability to MH issues |
| Kenya | University graduates | 1.84 (1.12–3.01) | 1.70 (1.05–2.76) | Moderate risk; differential exposure present |
| South Africa | High school or less | 2.08 (1.25–3.46) | 1.95 (1.22–3.12) | Limited mobility and higher exposure |
| South Africa | University graduates | 1.90 (1.15–3.14) | 1.78 (1.10–2.87) | Significant mental health disparity observed |
| Uganda | High school or less | 2.22 (1.40–3.50) | 2.01 (1.28–3.16) | Highest risk group; low social capital |
| Uganda | University graduates | 1.88 (1.15–3.06) | 1.73 (1.10–2.72) | Differential vulnerability evident |
| Zambia | High school or less | 2.12 (1.35–3.34) | 1.99 (1.28–3.10) | Elevated depression & anxiety levels |
| Zambia | University graduates | 1.85 (1.12–3.05) | 1.72 (1.08–2.75) | Disparities due to combined exposure & vulnerability |

**Source:** E-Views computation using the World Bank dataset.

The above findings from Table 6 underscore the uneven distribution of economic and mental health risks across social groups in ESAR countries. High exposure to poverty and unemployment, coupled with limited access to financial and social resources, intensifies mental health challenges for disadvantaged populations (Odokonyero, et. al., 2022). Moreover, the results align with existing literature indicating that social and economic factors such as education, gender, and age significantly influence mental health outcomes in Sub-Saharan Africa (De Lannoy, Graham, Patel & Leibbrandt, 2018; ILO, 2023).

Insecure and inequitable livelihoods exacerbate the mental health and well-being of the young population people Livelihoods. Many young people already have lived experience of economic vulnerability, which increases the risk of poor mental health and well-being for young people and also impacts those who care for and depend on them. "Youth unemployment rates soared, reaching more than 40% in many South African (SABOS, 2023) and the share of young people not in employment, peaked at a historic high of 16% of the entire population aged 15-29 in the four countries. The most frequently cited reasons

for the disproportionate impact of the COVID-19 economic crisis on young people include "less secure contracts, less seniority, and less control over decisions; frequently, they were among the people most recently recruited. Youths frequently lacked stable accommodation because of growing employment and financial uncertainty, and many had returned home with their parents.

Fertility rates fell across the four countries during this period, especially among young women under the age of 25; these declines were more pronounced in countries that experienced stronger economic downturns and faster increases in unemployment, regardless of family and welfare policies. Youth unemployment in the case of South Africa only returned to pre-crisis levels of 12% in 2023, and the projected cost of young people being displaced from productive activity over a decade was (SABOS, 2023). At the early stages of the pandemic, youth unemployment and labour underutilization rates were around 43% and 33% higher, respectively, than worldwide norms, and young people in work were more likely to have temporary contracts and unconventional kinds of labour (AfDB, 2020). In 2019, the rate for young adults aged 15-24 in Kenya, Uganda, and Zambia was 14.1%, with young women having a 1.37-fold greater rate than young males (WB,2019). As a result, women and those in the bottom 20% (39%) saw greater levels of labour market and income uncertainty.

## 5. Conclusion

This analysis relied on the World Bank, International Labour Organisation, and national modelling databases(1). which induced bias in reporting. The research explored how poverty and unemployment affect the mental health of university graduates. Various forms of underemployment income and skills-based underemployment were not considered, which likely understates the extent and effect of poverty and underemployment on mental health. Investigating how various unemployment statuses, both individually and collectively, influence mental health can shed light on the effects of this growing concern on overall well-being. This understanding may help prioritize certain forms of underemployment, allowing us to address the rising mental health challenges more effectively. Third, while integrating TMLE and accounting for individuals' pre-existing mental health conditions before the pandemic has strengthened the debate between social selection and social causation, we want to make it clear that the possibility of reverse causality remains. Mental health challenges among youth could not be included as a covariate because such information was not available in the WB database.

## Note

(1) Google Search: <https://www.google.com/search?q=South+Africa+unemployment+rate+2021>.

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