

## **Can Education and Social Mobility Address Income Inequality in Sub-Saharan Africa?**

**Rasak A. Adefabi**

Department of Economics Education, Emmanuel Alayande University of Education, Oyo, Nigeria. Orcid ID: 0000-0003-2498-8132

---

**ABSTRACT:** This study examines the relationship among education, social mobility, and income inequality in Sub-Saharan Africa using panel data from 25 countries covering the period 2010–2023. A quantitative research design was employed, drawing on secondary data from the World Bank, UNESCO, and the World Economic Forum. Descriptive statistics, correlation analysis, and panel fixed-effects regression with interaction terms were applied, supported by robustness checks including Jarque–Bera normality, multicollinearity diagnostics, and the Durbin–Watson test. The findings show that education significantly reduces inequality: higher secondary enrollment, longer mean years of schooling, and increased public education expenditure were all negatively associated with the Gini coefficient. Social mobility also exerted a strong independent effect on reducing inequality. Moreover, the interaction between education and social mobility was significant, indicating that the inequality-reducing effect of education is magnified where upward mobility opportunities are greater. Diagnostic results confirmed the reliability of the estimates, with variables approximately normally distributed, no serious multicollinearity, and no evidence of autocorrelation. The study concludes that education and social mobility are complementary in reducing inequality in Sub-Saharan Africa. It recommends expanding equitable access to quality education, sustaining public education expenditure, and strengthening labor markets and institutions to enhance mobility.

**KEYWORDS:** Education, Social Mobility, Income Inequality, Sub-Saharan Africa, Panel Regression

---

### **I. INTRODUCTION**

Education has long been recognized as a cornerstone of human capital development, social mobility, and inclusive economic growth. Human capital theory, pioneered by Becker (1993), posits that education enhances productivity and increases individuals' lifetime earnings. In contemporary research, education continues to be regarded as a major pathway for upward social mobility and a means of narrowing socioeconomic inequalities (Hanushek & Woessmann, 2020). However, the extent to which education reduces income inequality remains an empirical question, particularly in regions such as Sub-Saharan Africa where structural and institutional barriers are pronounced.

Sub-Saharan Africa presents a paradox. On one hand, the region has made significant progress in expanding educational access, with primary school enrolment rates rising from 59 percent in 2000 to 80 percent in 2020 (UNESCO, 2023). Tertiary enrolment has also increased, though it remains below 10 percent, far lower than the global average of 38 percent (World Bank, 2022). On the other hand, income inequality persists, with Gini coefficients consistently exceeding 40 percent in many countries, making Sub-Saharan Africa one of the most unequal regions in the world (UNDP, 2022, 2023). This suggests that improvements in access to education have not always translated into reductions in inequality, a paradox also highlighted by Adeyemi and Ogundipe (2021) in Nigeria and by Asongu and Odhiambo (2022) in broader African contexts.

Social mobility is the ability of individuals to improve their socioeconomic position relative to their parents has been identified as a key mechanism through which education is expected to reduce inequality (Blanden, 2021). Yet, research indicates that mobility rates in Sub-Saharan Africa remain low. For instance, Maliti (2021) found that while educational attainment has expanded, intergenerational mobility remains constrained by structural unemployment and weak labour market absorption. Similarly, Nwosu (2022) reported that higher education does not guarantee improved income outcomes for all, as opportunities are disproportionately concentrated in urban areas and among wealthier households. These findings raise critical concerns about whether education is fulfilling its role as a "great equalizer" in the African context.

## Can Education and Social Mobility Address Income Inequality in Sub-Saharan Africa?

Globally, comparative studies suggest that regions such as Latin America and parts of Asia have achieved measurable reductions in inequality through expanded access to education and improved labour market integration (Ferreira, 2020). The persistence of inequality in Sub-Saharan Africa despite similar improvements in enrolment highlights the need for a region-specific empirical analysis. Such an examination is especially urgent given the commitments of African countries to the United Nations Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education) and Goal 10 (Reduced Inequalities).

Despite the critical importance of these issues, existing literature on the linkages among education, social mobility, and income inequality in Sub-Saharan Africa is fragmented. Many studies are limited to single-country contexts, while others adopt descriptive approaches without robust econometric testing (Oketch, 2021). As a result, there is insufficient evidence on how education translates into social mobility and whether it contributes to narrowing inequality at a regional level.

This study seeks to fill this gap by conducting a quantitative empirical examination of the relationship among education, social mobility, and income inequality in Sub-Saharan Africa. Using secondary data from the World Bank, UNESCO, and related sources, the study employs panel econometric techniques to assess whether improvements in educational attainment are associated with enhanced mobility and reductions in inequality across multiple countries. The findings are expected to contribute to both academic debates and policy dialogues by providing evidence-based insights into the role of education in shaping inclusive growth trajectories in the region.

### LITERATURE REVIEW

#### Education (as human-capital formation)

Education is widely regarded as a critical driver of human capital accumulation and socioeconomic advancement. In Sub-Saharan Africa (SSA), enrolment at primary and secondary levels has expanded over the past two decades, yet completion rates and learning outcomes remain inconsistent (UNESCO, 2023; World Bank, 2023). Aina (2022) reported that despite improved access, inequalities persist across rural–urban and socioeconomic lines, which restricts the equalizing function of education. Similarly, Cilliers (2020) demonstrated that attainment and learning outcomes exhibit strong spatial disparities, reinforcing income gaps between regions.

The COVID-19 pandemic compounded these challenges, disrupting schooling across Sub-Saharan Africa and widening pre-existing inequalities (UNESCO, 2021; UNICEF, 2022). World Bank (2021) estimates showed that learning-adjusted years of schooling in SSA could decline significantly, threatening to reverse earlier progress. Thus, while access has expanded, unequal quality and external shocks reduce the potential of education to function as a consistent equalizer.

#### Social Mobility (intergenerational transmission of advantage)

Social mobility reflects the degree to which individuals can move across educational or income strata relative to their parents. Aslam and García (2020) found that although mobility improved in some SSA countries, disparities by gender and location remain profound. Narayan, Van der Weide, and Cojocaru (2021) further demonstrated that parental education remains a strong predictor of children's outcomes, even as intergenerational persistence has declined in certain contexts.

Country-specific studies provide similar evidence. Tadesse (2023) in Ethiopia found that higher educational attainment significantly improved the chances of moving into higher income brackets, while Mago (2022) in South Africa revealed that access to tertiary education facilitated upward occupational mobility but did not guarantee reduced inequality due to discrimination and segmented labor markets. Collectively, these findings suggest that mobility is partially improving but remains constrained by structural barriers.

#### Income Inequality (distributional outcomes)

Income inequality, often measured by the Gini coefficient, remains high in many SSA countries. According to the United Nations Development Programme (2023), several countries in the region record coefficients above 0.45, placing them among the most unequal globally. Oketch (2021) found that while education expanded average earnings, unequal access to high-quality schooling reinforced existing income divides. Similarly, Mensah (2021) in Ghana showed that although education improved individual incomes, labor market barriers limited its broader effect on national inequality levels. Cross-country econometric studies also reveal that inequality outcomes depend heavily on governance, with institutional quality shaping how education and growth translate into distributional outcomes (Van der Weide, Narayan, & Cojocaru, 2024).

#### Connecting Education, Social Mobility, and Inequality

Few studies examine education, social mobility, and inequality together in an integrated framework. The African Development Bank (2022) reported that countries with sustained investments in education experienced modest reductions in inequality, but these outcomes were mediated by the degree of upward mobility enabled by labor markets. Mensah (2021)

## Can Education and Social Mobility Address Income Inequality in Sub-Saharan Africa?

found that while mobility linked education to improved earnings, its effect on inequality was muted in contexts of rural deprivation and informal labor dominance.

Recent analyses warn of new risks. The World Bank (2021) argued that COVID-19 disruptions could stall intergenerational mobility and exacerbate income inequality unless aggressive remedial actions are taken. These findings collectively underscore the complexity of the education mobility inequality nexus, thereby justifying a robust quantitative cross-country empirical investigation.

Recent empirical evidence supports this perspective. For example, Adeyemi and Ogundipe (2021) found that investment in human capital significantly reduced income disparities in Nigeria, while Asongu and Odhiambo (2022) demonstrated that education contributes to inclusive growth and lower inequality across African economies.

### METHODOLOGY

This study adopted a quantitative panel research design to investigate the relationship among education, social mobility, and income inequality in Sub-Saharan Africa. The design was considered appropriate because it allowed for analysis of variations both across countries and over time. Secondary data were obtained from reputable international sources, including the World Bank's World Development Indicators, UNESCO Institute for Statistics, and the World Economic Forum's Global Social Mobility Index. The study covered 25 Sub-Saharan African countries from 2010 to 2023, depending on data availability. This produced a balanced panel with 350 country-year observations.

#### Variables

- Dependent Variable: Income inequality, measured by the Gini coefficient (0–100).
- Independent Variables:
  - Mean years of schooling.
  - Secondary school enrollment rate (%).
  - Public expenditure on education (% of GDP).
- Mediator: Social Mobility Index (0–100).
- Controls: GDP per capita, governance index, and urbanization rate.

#### MODEL SPECIFICATION

##### Two models were estimated:

##### Model 1:

$$\text{INEQ}_{it} = \alpha + \beta_1 \text{EDU}_{it} + \beta_2 \text{Controls}_{it} + \mu_i + \epsilon_{it}$$

##### Model 2 (with interaction):

$$\text{INEQ}_{it} = \alpha + \beta_1 \text{EDU}_{it} + \beta_2 \text{MOB}_{it} + \beta_3 (\text{EDU} \times \text{MOB})_{it} + \beta_4 \text{Controls}_{it} + \mu_i + \epsilon_{it}$$

where INEQ represents inequality (Gini coefficient), EDU refers to the set of education indicators, MOB is social mobility,  $\mu_i$  captures unobserved country effects, and  $\epsilon_{it}$  is the error term.

Panel fixed-effects regression was employed to control for country-specific heterogeneity. The Hausman test rejected the random-effects model, confirming the appropriateness of fixed effects. Robust standard errors were applied to correct for potential heteroskedasticity.

Several diagnostic checks were conducted to ensure robustness of results. Descriptive statistics included skewness, kurtosis, and the Jarque–Bera test to assess normality, all of which suggested approximate normal distributions. The correlation matrix was examined to detect multicollinearity, and no pairwise correlation exceeded the critical threshold of 0.80. In addition, the Durbin–Watson statistic (~2.0) was reported in the regression model, confirming the absence of autocorrelation.

##### Data Stability

Panel unit root tests (Levin–Lin–Chu) indicated stationarity at levels, consistent with standard panel econometric practice (Baltagi, 2021).

##### Ethical Considerations

The study relied exclusively on secondary, publicly available datasets, which eliminated risks associated with human participants. Ethical standards of transparency, reproducibility, and responsible reporting were strictly followed, in line with accepted guidelines for research integrity (Resnik, 2020).

## Can Education and Social Mobility Address Income Inequality in Sub-Saharan Africa?

### DISCUSSION OF FINDINGS

**Table 1: Descriptive Statistics**

| Variable                      | Mean  | Std. Dev. | Skewness | Kurtosis | JB Statistic | Prob. Value |
|-------------------------------|-------|-----------|----------|----------|--------------|-------------|
| Gini Coefficient              | 42.20 | 5.83      | 0.45     | 2.61     | 3.12         | 0.210       |
| Years of Schooling            | 6.35  | 1.87      | -0.21    | 3.05     | 2.18         | 0.337       |
| Enrollment Rate (%)           | 64.50 | 12.14     | 0.38     | 2.72     | 4.05         | 0.132       |
| Education Expenditure (% GDP) | 3.90  | 1.23      | 0.12     | 2.85     | 1.66         | 0.436       |
| Social Mobility Index         | 45.70 | 8.21      | -0.33    | 3.10     | 2.91         | 0.233       |

Table 1, the mean Gini coefficient of 42.2 confirms persistent inequality in Sub-Saharan Africa. Education indicators (years of schooling, enrollment, and expenditure) show moderate progress, while social mobility averages 45.7. Skewness and kurtosis values indicate approximate normality. The Jarque–Bera probabilities (all > 0.05) confirm that variables are normally distributed, justifying regression analysis.

**Table 2: Panel Unit Root Tests (Levin–Lin–Chu)**

| Variable              | LLC Statistic | Prob. Value | Decision   |
|-----------------------|---------------|-------------|------------|
| Gini Coefficient      | -5.12         | 0.0000      | Stationary |
| Years of Schooling    | -3.85         | 0.0001      | Stationary |
| Enrollment Rate       | -4.72         | 0.0000      | Stationary |
| Education Expenditure | -2.95         | 0.0016      | Stationary |
| Social Mobility Index | -3.11         | 0.0009      | Stationary |
| GDP per capita        | -2.68         | 0.0037      | Stationary |
| Governance Index      | -3.54         | 0.0004      | Stationary |
| Urbanization Rate     | -2.21         | 0.0136      | Stationary |

From table 2, all variables are stationary at levels ( $p < 0.05$ ), confirming that the data are integrated of order zero  $I(0)$ . This ensures the stability of the series and reduces the risk of spurious regression.

**Table 3: Correlation Matrix**

| Variables             | Gini  | Schooling | Enrollment | Expenditure | Mobility | GDPpc   | Governance | Urbanization |
|-----------------------|-------|-----------|------------|-------------|----------|---------|------------|--------------|
| Gini Coefficient      | 1     |           |            |             |          |         |            |              |
| Years of Schooling    | -2*** | 1         |            |             |          |         |            |              |
| Enrollment Rate       | -8*** | 0.55***   | 1          |             |          |         |            |              |
| Education Expenditure | -29** | 0.33**    | 0.41***    | 1           |          |         |            |              |
| Social Mobility       | -7*** | 0.44***   | 0.39**     | 0.30**      | 1        |         |            |              |
| GDP per capita        | -31** | 0.28**    | 0.26**     | 0.34***     | 0.33***  | 1       |            |              |
| Governance Index      | -6*** | 0.42***   | 0.29**     | 0.37**      | 0.48***  | 0.39*** | 1          |              |
| Urbanization          | -24** | 0.20**    | 0.25**     | 0.27**      | 0.19**   | 0.29*** | 0.22**     | 1            |

Notes:

- \*\*\* = significant at 1% level
- \*\* = significant at 5% level

The matrix shows that inequality (Gini) is negatively correlated with education indicators and social mobility, supporting the hypothesis that improvements in education and mobility reduce inequality. Most relationships are significant at the 1% level, while others are significant at 5%. No coefficient exceeds 0.80, indicating no multicollinearity issues.

**Table 4: Regression Results (Fixed Effects)**

| Variable           | Coefficient | Std. Error | t-Statistic | Prob.    |
|--------------------|-------------|------------|-------------|----------|
| Years of Schooling | -0.215      | 0.062      | -3.47       | 0.001*** |
| Enrollment Rate    | -0.087      | 0.031      | -2.81       |          |

## Can Education and Social Mobility Address Income Inequality in Sub-Saharan Africa?

|                       |        |       |       |          |
|-----------------------|--------|-------|-------|----------|
|                       |        |       |       | 0.005*** |
| Education Expenditure | -0.134 | 0.056 | -2.39 | 0.017**  |
| Social Mobility Index | -0.298 | 0.072 | -4.14 | 0.000*** |
| EDU × MOB Interaction | -0.112 | 0.041 | -2.73 | 0.007*** |
| GDP per capita        | -0.054 | 0.022 | -2.45 | 0.015**  |
| Governance Index      | -0.076 | 0.028 | -2.71 | 0.008*** |
| Urbanization Rate     | 0.041  | 0.019 | 2.16  | 0.032**  |

R-squared 0.62; Durbin–Watson 1.98

The regression confirms that education (schooling, enrollment, expenditure) significantly reduces inequality. Social mobility independently lowers inequality, and the significant interaction term (EDU × MOB) shows that education’s effect is stronger in contexts with higher mobility. Control variables (GDP per capita, governance) also reduce inequality, while urbanization increases it. The  $R^2$  of 0.62 indicates strong explanatory power. The Durbin–Watson statistic (~2.0) confirms no autocorrelation, validating the model.

This study examined the relationships among education, social mobility, and income inequality in Sub-Saharan Africa using panel data from 25 countries between 2010 and 2023. The results provide robust evidence that education and social mobility are critical drivers of inequality reduction.

The descriptive statistics confirmed the persistence of inequality, with an average Gini coefficient of 42.2, consistent with World Bank (2023) benchmarks. Education indicators such as enrollment and years of schooling showed steady but uneven progress, while the social mobility index remained moderate. The Jarque–Bera tests confirmed normal distribution across all variables, supporting the validity of subsequent econometric tests. Panel unit root tests (Levin–Lin–Chu) indicated that all variables were stationary at levels, reducing the likelihood of spurious regression. This finding strengthens confidence in the panel estimates and ensures that the reported relationships are stable over time.

The correlation matrix revealed significant negative associations between inequality and education indicators as well as social mobility, with most significant at the 1% level and others at the 5% level. This supports theoretical expectations that education expansion and improved mobility reduce income disparities. Importantly, no coefficient exceeded the 0.80 threshold, confirming that multicollinearity is not a concern.

The regression analysis reinforced these results. Years of schooling, secondary enrollment, and education expenditure all had negative and statistically significant effects on inequality, aligning with previous findings by Adeyemi and Ogundipe (2021) and Asongu and Odhiambo (2022), who emphasized the equalizing role of education in African economies. Social mobility not only reduced inequality independently but also strengthened the impact of education through a significant interaction effect. This supports Narayan, Van der Weide, and Cojocaru (2021), who highlighted the role of mobility-enhancing institutions in amplifying the benefits of education, and is consistent with Mago (2022), who found that structural transformation in Africa mediates education’s effect on inequality.

The Durbin–Watson statistic of approximately 2.0 indicated the absence of autocorrelation, further validating the regression results. Together with the stability and normality tests, these diagnostics confirm the robustness of the study’s findings. Overall, the results demonstrate that education alone cannot guarantee reductions in inequality unless supported by mobility-enhancing policies and institutions. This reinforces the argument of Van der Weide, Narayan, and Cojocaru (2024) that governance and institutional quality are central to ensuring that human capital investments translate into inclusive growth.

## CONCLUSION

This study investigated the relationship among education, social mobility, and income inequality in Sub-Saharan Africa using panel data for 25 countries between 2010 and 2023. The findings demonstrate that education measured through years of schooling, enrollment rates, and public expenditure significantly reduces inequality. Social mobility independently lowers inequality and magnifies the effect of education through a strong interaction effect.

## Can Education and Social Mobility Address Income Inequality in Sub-Saharan Africa?

Robustness checks confirmed the reliability of these results. The Jarque–Bera probabilities supported normality, Levin–Lin–Chu unit root tests showed that all variables were stationary at levels, and the Durbin–Watson statistic (~2.0) confirmed the absence of autocorrelation. These diagnostics strengthen confidence that the relationships observed are not spurious but reflect stable, econometrically sound dynamics.

The study concludes that education and social mobility are complementary forces in reducing inequality in Sub-Saharan Africa. However, education's equalizing potential can only be fully realized when mobility-enhancing institutions and governance structures are in place. Thus, addressing inequality requires an integrated approach that links human capital investments with institutional reforms and labor market opportunities. Based on the study's findings, the following recommendations are made:

- Expand access to quality secondary and tertiary education. Given the significant negative effects of years of schooling and enrollment rates on inequality, governments should prioritize equitable expansion of access, especially for marginalized groups, rural areas, and low-income households.
- Increase and sustain public education expenditure. Since education expenditure reduces inequality, governments must protect and expand education budgets, with a focus on teacher quality, school infrastructure, and targeted subsidies for disadvantaged populations.
- Strengthen social mobility mechanisms. The strong independent and moderating effects of social mobility suggest that reforms should target labor market fairness, transparent recruitment processes, anti-discrimination laws, and access to decent employment opportunities.
- Integrate education policies with mobility-enhancing reforms. The significant interaction term shows that education is most effective in reducing inequality when paired with mobility. Policymakers should link schooling to vocational training, entrepreneurship, and institutional reforms that enable individuals to translate educational attainment into upward mobility.
- Improve governance and institutional quality. Since governance significantly reduces inequality, African countries should strengthen accountability, reduce corruption, and promote inclusive policymaking to ensure that both education and mobility translate into equitable development outcomes.

## ACKNOWLEDGMENT

I appreciate our amiable Vice-chancellor, Prof Olanrewaju Ademola Olaniyan for granting me permission and other support to attend an international conference in Edinburgh, UK in 2025 where scholars world over added substantial contributions to the paper. Mr. Nuru O. Azeez of the University of Ilorin, Nigeria is greatly appreciated in assisting to read the manuscript. Family support which facilitated robust presentation at the international conference in Edinburgh, UK in November, 2025 coupled with the fantastic contributions of participants are also warmly appreciated. Mr. Olaitan Olabode is also well appreciated in no small measure.

## REFERENCES

- 1) Adeyemi, A. M., and Ogundipe, A. A. 2021. Human capital development and income inequality in Nigeria. *Journal of African Development Studies*, 13(2), 45–60. <https://doi.org/10.1080/0376835X.2021.1879932>
- 2) African Development Bank. 2022. *African economic outlook 2022: Supporting climate resilience and a just energy transition*. AfDB. <https://www.afdb.org/en/knowledge/publications/african-economic-outlook>
- 3) Asongu, S. A., and Odhiambo, N. M. 2022. Education, inclusive growth, and inequality reduction in Africa. *Structural Change and Economic Dynamics*, 61, 387–398. <https://doi.org/10.1016/j.strueco.2022.04.010>
- 4) Baltagi, B. H. 2021. *Econometric analysis of panel data* (6th ed.). Springer. <https://doi.org/10.1007/978-3-030-53953-5>
- 5) Becker, G. S. 1993. *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.
- 6) Blanden, J. 2021. *Social mobility and its measurement in international perspective*. Oxford University Press.
- 7) Ferreira, F. H. G. 2020. Inequality and social mobility in developing countries. *Annual Review of Economics*, 12(1), 215–238. <https://doi.org/10.1146/annurev-economics-081919-050658>
- 8) Hanushek, E. A., and Woessmann, L. 2020. The economic impacts of learning losses. *OECD Education Working Paper No. 225*. OECD. <https://doi.org/10.1787/21908d74-en>
- 9) Mago, S. 2022. Education, inequality and mobility in Africa: Insights from structural transformation. *African Journal of Economic Policy*, 29(1), 1–18. <https://doi.org/10.1111/1467-8268.12564>

## Can Education and Social Mobility Address Income Inequality in Sub-Saharan Africa?

- 10) Maliti, E. 2021. Intergenerational social mobility and inequality in Sub-Saharan Africa. *Review of Development Economics*, 25(3), 1421–1439. <https://doi.org/10.1111/rode.12796>
- 11) Narayan, A., Van der Weide, R., and Cojocar, A. 2021. Mobility and inequality in developing countries. *World Bank Policy Research Working Paper No. 9876*. World Bank. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail>
- 12) Nwosu, C. 2022. Higher education and labour market outcomes in Africa. *International Journal of Educational Development*, 92, 102591. <https://doi.org/10.1016/j.ijedudev.2022.102591>
- 13) Oketch, M. 2021. Education, inequality and development in Sub-Saharan Africa: A review. *Compare: A Journal of Comparative and International Education*, 51(7), 947–963. <https://doi.org/10.1080/03057925.2020.1834375>
- 14) Resnik, D. B. 2020. *The ethics of research with human subjects: Protecting people, advancing science, promoting trust*. Springer. <https://doi.org/10.1007/978-3-030-48418-7>
- 15) United Nations Development Programme. 2022. *Human development report 2022: Uncertain times, unsettled lives*. UNDP. <https://hdr.undp.org>
- 16) United Nations Development Programme. 2023. *Human development report 2023: Breaking the gridlock*. UNDP. <https://hdr.undp.org>
- 17) UNESCO. 2021. *Education: From disruption to recovery*. UNESCO. <https://www.unesco.org/en/covid-19/education-response>
- 18) UNESCO. 2023. *Global education monitoring report 2023: Technology in education*. UNESCO. <https://www.unesco.org/reports/gem-report>
- 19) UNICEF. 2022. *COVID-19 and education: The lingering effects*. UNICEF. <https://www.unicef.org/reports/covid-19-and-education-lingering-effects>
- 20) Van der Weide, R., Narayan, A., and Cojocar, A. 2024. Governance, inequality, and inclusive growth in developing economies. *World Bank Policy Research Working Paper No. 10456*. World Bank. <https://documents.worldbank.org>
- 21) World Bank. 2022. *World development indicators 2022*. World Bank. <https://databank.worldbank.org>
- 22) World Bank. 2023. *World development indicators 2023*. World Bank. <https://databank.worldbank.org>



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.