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A Survey on Inequality-Adjusted Human Development in Africa

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Abstract

The survey puts some structure on recent empirical studies from the African Governance and Development institute (AGDI) on inclusive development published between 2016 and 2017 for the most part. The emphasis is exclusively on the inequality adjusted human development index (IHDI) because of the sparse scholarly literature on the indicator which was first published in 2010. The review provides relationships between the IHDI and *inter alia*: foreign aid, globalisation, information and communication technology, business dynamics and knowledge economy, software piracy, finance, health worker migration and the feasibility of common cross-country policies aimed at improving the IHDI. The survey is of policy relevance because inclusive human development is fundamental to Africa's growth agenda in the post-2015 sustainable development era.

JEL Classification: E60; F40; F59; D60; O55
Keywords: Inclusive human development; Africa

1. Introduction

This brief survey is motivated by three contemporary trends in the literature, namely: (i) growing levels of exclusive human development in Africa; (ii) the sparse literature on the inequality adjusted human development index (IHDI) first published in 2010 and (iii) the relevance of inclusive development in the post-2015 development agenda. The three points are substantiated in chronological order.

First, on rising extreme poverty levels, a 2015 World Bank report on the achievement of the Millennium Development Goal (MDG) extreme poverty target revealed that the number of people living in extreme poverty has been increasing in Africa, despite the continent enjoying more than two decades of growth resurgence that began in the mid 1990s (Asongu & Nwachukwu, 2016a, 2016b). A natural inference from the puzzling statistics is that the fruits of economic prosperity have not been evenly distributed across the board.

Second, the human development index (HDI) denotes a national mean of results in three principal dimensions, notably: health and long life, knowledge and basic living standards. The IHDI goes a step further by adjusting the HDI to prevalent levels of inequality in the aforementioned three dimensions. In other words, the IHDI also takes into consideration the manner in which the three underlying achievements are distributed within the population. As far as we have reviewed, there is sparse empirical literature on the IHDI.

Third, the IHDI is related to at least six of the seventeen Sustainable Development Goals (SDGs), namely: Goal 1('end poverty in all its forms everywhere'), Goal 2 ('end hunger, achieve food security and improved nutrition and promote sustainable agriculture'); Goal 3 ('ensure healthy lives and promote well-being for all ages'); Goal 4 ('ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'); Goal 8 ('promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all') and Goal 10 (reduce inequality within and among countries) (see Asongu& Le Roux, 2017).

This paper unites the three strands above by presenting a brief survey of what we have learnt from empirical studies employing the IHDI. The positioning of the survey is also motivated by the sparse literature that has employed the IHDI. In essence, the survey puts some structure on recent empirical studies from the African Governance and Development institute (AGDI) on inclusive development published largely between 2016 and 2017.

2. A review of recent AGDI literature on the IHDI

The review provides relationships between the IHDI and: foreign aid, globalisation, information and communication technology (ICT), business dynamics and knowledge economy, software piracy, finance, health worker migration and the feasibility of common cross-country policies aimed at improving the IHDI. The various relationships are discussed in chronological order.

First, with regard to foreign aid, Asongu (2014a) has investigated the aid-development nexus in 52 African countries for the period 1996-2010. The aid variables include: Total Net Official Development Assistance (NODA), NODA from the Development Assistance Committee (DAC) and NODA from Multilateral donors. The findings broadly indicate that development assistance is detrimental to Gross Domestic Product (GDP) growth, GDP per capita growth and the IHDI. The magnitude of negativity (which is consistent across specifications and development dynamics) is highest for NODA from Multilateral donors, followed by NODA from DAC countries. The author has recommended that it is high time to solve the second tragedy of foreign aid: a momentous time for economists and policy makers to start rethinking the models and theories on which development assistance is based. He concludes by stating that in the meantime, it is up to people who care about poverty to hold aid agencies accountable for piecemeal outcomes. Using quantile regressions in assessing development thresholds for foreign aid effectiveness, Asongu (2014b) concludes that the aid-IHDI relationship is negative across the IHDI distributions. Asongu (2016) has extended the article with an exposé of how foreign aid can be reinvented for more inclusive and sustainable development.

Asongu and Nwachukwu (2016c) have also extended Asongu (2014a, 2014b) by decomposing aid into sectors and employing a more endogeneity-robust empirical strategy. The paper focuses on 53 African countries for the period 2005-2012 and the empirical evidence is based on contemporary and non-contemporary Ordinary Least Squares, Fixed Effects and System Generalised Method of Moments (GMM). The study finds some types of aid to positively affect the IHDI, namely, aid for: social infrastructure, economic infrastructure, the productive sector, and the Multi-sector.

Second, as concerns the relevance of globalisation in human development, Asongu (2013) has investigated the effects of trade and financial globalisation on inclusive human development in 52 African countries for the period 1996-2010. Using Two Stage Least Squares, the author has concluded that while trade openness improves the IHDI (in line with the neoliberal theory), financial openness has the opposite effect (consistent with the

hegemony thesis). Asongu et al. (2015) assess the relevance of globalisation-driven debts on IHDI in 53 countries for the period 1996-2008. The authors infer some false economics of preconditions after concluding that when external debt is endogenous to globalisation, the effect on the IHDI is negative, whereas when it is interactive with globalisation, the impact is positive.

Asongu and Nwachukwu (2016d) extend the underlying studies by examining the comparative relevance of globalisation on the IHDI in 51 African countries for the period 1996–2011 with particular emphasis on legal origins (English common law vs. French civil law), income levels (low income vs. middle income), religious domination (Christianity vs. Islam), resource wealth (oil-rich vs. oil-poor), landlockedness (landlocked vs. unlandlocked), and political stability (stable vs. unstable). The empirical evidence which is based on Fixed effects and Tobit regressions broadly show that middle income, English common law, oil-poor, unlandlocked, Christian-oriented and politically-stable countries are associated with comparatively higher levels of globalisation-driven IHDI. As an extension with Generalised Method of Moments (GMM) and Instrumental Quantile Regressions (IQR), Asongu and Nwachukwu (2017a) find that globalisation positively affects the IHDI and the beneficial impact is higher in countries with higher initial levels of the IHDI. This is consistent with Asongu (2014c) who has investigated how globalisation, corruption and development are linearly and nonlinearly related in wealth effects to conclude that globalisation improves the quality of institutions through inclusive human development measured with the IHDI.

Third, with respect to ICT, Asongu and Nwachukwu (2016e) have investigated the role of governance in mobile phones for inclusive human development in Sub-Saharan Africa for the period 2000-2012. Using Fixed Effects, Generalised Method of Moments and Tobit regressions, the interactions between governance the mobile phone show synergy effects in Generalised Method of Moments and Tobit estimations, notably, from: regulation quality in the former and political stability, voice and accountability and rule of law in the latter.

Within a comparative framework, Asongu and Le Roux (2017) investigate whether enhancing ICT can improve the IHDI in Sub-Saharan Africa for the period 2000-2012. Using instrumental variable Tobit regressions and decomposing the analyses into fundamental characteristics (income levels, legal origins, religious dominations, political stability, landlockedness and resource-wealth) of human development, they conclude thatthe positive responsiveness of the IHDI to ICT (telephone, internet and mobile phone penetrations) varies across fundamental characteristics of human development and ICT dynamics. Moreover, there is a synergy from mobile phones which is driven by oil-exporting countries. Asongu and

Nwachukwu (2016f) investigate time-dynamic effects of ICT on the IHDI to conclude that whereas mobile phone penetration has positive short run and long term impacts on the IHDI, the effects of internet and telephone penetrations are not significant. Furthermore, the long run rewards of mobile phones on inclusive human development are higher than the corresponding short term benefits.

In another example Asongu and Nwachukwu (2017b) have examined comparative human development thresholds for absolute and relative pro-poor mobile banking in developing countries. Mobile banking entails 'mobile phones used to pay bills' and 'mobile phones used to receive/send money', while the data is decomposed into seven sub-panels based on two fundamental characteristics: (i) regions (Latin America, Asia and the Pacific, Central and Eastern Europe, and Middle East and North Africa) and (ii) income levels (upper middle income, lower middle income and low income). The findings reveal that at certain human development thresholds, mobile banking is positively associated with inclusive development. More specifically, the following results are established. *First*, the increased use of mobile phones to pay bills is negatively correlated with: (i) poverty in lower-middle-income countries (LMIC), upper-middle-income countries (UMIC) and Latin American countries (LA) respectively at human development thresholds of 0.725, 0.727 and 0.778 and (ii) inequality in UMIC and LA with human development thresholds of respectively 0.646 and 0.761. *Second*, the increased use of mobile phones to send/receive money is negatively correlated with: (i) poverty in LMIC, UMIC and Central and Eastern European countries (CEE) with corresponding human development thresholds of 0.631, 0.750 and 0.750 and (ii) inequality in UMIC, CEE and LA at human development thresholds of0.665, 0.736 and 0.726 respectively.

Fourth, Asongu et al. (2017) have focused on how business dynamics, knowledge economy and economic prosperity ultimately affect the IHDI. The paper develops an empirically-relevant framework to: (i) investigate whether the African business environment promotes or hinders knowledge economy (KE); (ii) assess whether the resulting KE influences economic prosperity and (ii) examine how growth in turn affects the IHDI in 53 African countries during the 1996-2010 time period. The empirical evidence which is based on a three-stage recursive instrumental variable approach shows that dynamics of starting and doing business strongly correlate with changes in KE and such variations in KE influence growth-driven inclusive human development.

Fifth, building on theoretical underpinnings that the poor are more likely to use pirated commodities because they lack money to buy the correct thing, Asongu and Andrés (2017)

have examined the effect of software piracy on the IHDI in eleven African countries for which data are available from period 2000 to 2010. The empirical evidence is based on instrumental variable panel Fixed Effects (FE) and Tobit regressions. The modeling exercise which articulates the IHDI and its constituents reveals the following findings. First, from the FE regressions, software piracy consistently enhances the IHDI and its constituents. Moreover, within this framework, the positive relationship between inclusive human development and software piracy is driven by all its constituents. Second, for Tobit regressions, the positive relationship between software piracy and inclusive human development is confirmed exclusively in the IHDI and literacy specifications. Furthermore, within the latter framework, the positive relationship between software piracy and inclusive human development is fundamentally driven by the literacy rate.

Sixth, two main studies relate to finance and immigration of health workers. Using quantile regressions, Asongu (2014d) has investigated how health human resource (HHR) migration affects development dynamics in Africa to establish the following. (i) HHR emigration improves (reduces) human development (GDP per capita growth) in low (high) quintiles of the distribution. (ii) Specific differences in effects are found in top quintiles of human development and low quintiles of GDP per capita growth where the physician (nurse) emigration elasticities of development are positive (negative) and negative (positive), respectively. Asongu and Nwachukwu (2017c) have investigated the direct and indirect linkages between financial development and the IHDI using Two-Stage Least Squares, Fixed Effects, Generalized Method of Moments and Tobit regressions. The main finding is that financial dynamics of depth, activity and size enhance the IHDI, whereas the inability of banks to transform mobilized deposits into credit for financial access negatively affects the IHDI.

Seventh, with the understanding that decreasing cross-country differences in factors that are exogenous to the IHDI is essential for common cross-country human development policies, Asongu (2014b) has argued for the need to evolve beyond income convergence in African development. The author has examined convergence in both income and inequality-adjusted human development in 38 African countries which are disaggregated into 10 homogenous panels based on regions (Sub-Saharan and North Africa), income levels (low, middle, lower middle and upper middle), legal origins (English common law and French civil law) and religious denominations (Christianity and Islam). The main result is that the income component of the IHDI moves slower in the process of convergence and thus requires a more focused policy intervention. Using a more robust empirical strategy, more countries and

within an empirical framework of assessing the complementarity of the mobile phone with knowledge diffusion variables (educational quality, innovation and Internet penetration), Asongu and Nwachukwu (2016g) have confirmed that countries with low levels of inclusive human development are catching-up their counterparts with higher development in Sub-Saharan Africa.

Conclusion

In view of advancing the Africa growth agenda, this survey has summarized some knowledge produced so far on the inequality adjusted human development index (IHDI) that was first published in 2010. The review has provided empirical relationships between the IHDI and: foreign aid, globalisation, information and communication technology, business dynamics and knowledge economy, software piracy, finance, health worker migration and the feasibility of common cross-country policies aimed at improving the IHDI. The documented empirical evidence is important for policy in the post-2015 sustainable development agenda. While the focus of the inquiry has been on the African Governance and Development Institute (AGDI) which largely produces knowledge for the development of Africa, the extant literature can be improved by broadening to the scope of the survey to include other world regions and sources of knowledge.

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