COMPARATIVE ANALYSIS OF THE IMPACT OF GLOBALISATION ON HUMAN WELFARE IN SUB-SAHARAN AFRICA

Olukayode Emmanuel Maku
PhD, Olabisi Onabanjo University,
e-mail: kaymarks73@gmail.com, orcid.org/0000-0001-9934-5612, Nigeria

Bolaji Adesola Adesoye
PhD, Olabisi Onabanjo University,
orcid.org/0000-0003-3276-1560, Nigeria

Awoyemi Olayiwola Babasanya
PhD, Olabisi Onabanjo University,
orcid.org/0000-0003-2997-5613, Nigeria

Oluwaseyi Adedayo Adelowokan
PhD, Olabisi Onabanjo University,
orcid.org/0000-0001-7825-1553, Nigeria

Abstract. The world has become more linked owing to the increased intensity of globalisation across regions. Sub-Saharan Africa (SSA) has become more relatively integrated into the world economy as shown by increasing degree of trade openness and foreign direct investment. Over the same period, quality of life of people in SSA in terms of access to basic necessity, monetary and non-monetary indices of poverty have been on the declining trend. This study adopted endogenous growth theory in analysing the comparative effects of globalisation between the highly and weakly globalised economies in SSA countries. Four channels of transmission of impact of globalisation were considered: trade openness, financial and capital flows labour mobility and access to telephone. Data for 16 SSA countries – 8 weakly globalised and 8 strongly globalised countries based on KOF globalisation index, were sourced from the world Development indicator for the period of 1980-2012. The feasible generalised least square (GLS) estimator was utilized to estimate the fixed and random effects panel regression models. Hausman test was used to determine the efficient estimator between fixed and random effects. All estimated coefficients were evaluated at 5% level of significance. The outcome of the comparative analysis revealed a mix result in some cases and unidirectional in some. In all, countries with higher intensity of globalisation have a greater improvement in their human welfare indicators compared to countries with weak globalisation indices. The study then recommended an improved reform in global integration to enable the region maximize the immense benefits inherent in global connections.

Keywords: Comparative Analysis, Globalisations, Human Welfare, Sub-Saharan Africa (SSA).

DOI: http://dx.doi.org/10.23856/3002

1 Introduction

Over the last few decades, the world has become more linked owing to globalisation across all regions. The scope of this global integration in all its ramifications has turned the world to a global village. Globalisation as a process is not limited to its economic perspective,
rather it has also profoundly shaped the socio-political, technological and cultural landscapes of countries and regional groups.

Globalisation has brought a lot of benefits such as helping countries and regions by adopting a number of programmes and policies aimed at deriving immense benefits accruable from the rapid and intensive global interactions and interconnections especially with respect to poverty alleviation and improvement in the wellbeing of the people. However, globalisation has also brought with it a variety of problems that have worsened human welfare. How the Sub-Saharan African (SSA) countries have fared in this direction remains controversial among social science scholars and policymakers (UNDP, 2012).

The literature on the impact of globalisation on poverty and human welfare points to highly variable outcomes (positive and negative) as well as multiple causalities, channels and mechanisms that link globalisation with human welfare. On the one hand, are those who find that globalisation worsens well-being (Milanovic, Squire, 2005; Ravallion, 2006; Wagle, 2007; Fosu, Mold, 2008). On the other hand, some authors point to evidence of human welfare improvements arising from globalisation (Bhagwati, Srinivasan, 2002; Dollar, Kraay, 2004). Yet, some economists argue that there is no specific link between them (Sylvester, 2005; Choi, 2006). Thus, there is no consensus on how the integration of developing economies into the global market affects the welfare of their people. Some empirical evidence confirm the submission of this school of thought that “more open economies are more prosperous and experience faster rate of progress (Chan, Dung, 2001; Neutel, Heshmati, 2006; Hammed and Nazir, 2006; Harrison, 2006). On the other hand, the antagonists of globalisation argue that world poverty has been rising and human welfare deteriorating due to the forces unleashed by the same wave of globalisation (Santarelli, Figni, 2002; Khor, 2002; Hammoris, Kai, 2004; Guordon, et al., 2006; Gold, 2009).

In spite of the controversies surrounding the impact of globalisation on human welfare, evidence points to a high incidence of poverty in the era of intensive globalisation among the poor nations especially in SSA. People in SSA, as well as those in South Asia, are among the poorest in the world, in terms of real income, wellbeing status and access to social services. About 48.3 per cent of the population of SSA live in poverty with an average life expectancy of 47 years (World Bank Report, 2011).

Since the Second World War, SSA has been relatively more integrated into the world economy, with high trade/GDP ratios (World Bank, 2015). In spite of the increasing degree of openness of the region to the global market, most of her social and human welfare indicators have recorded a downward trend (UNDP, 2008). If more openness stimulates growth, as pro-globalisation advocates claim, such integration should have led to greater sustained growth in the SSA region than in Latin America as well as South and East Asia. These regions have managed to lift their people out of abject poverty, deteriorating human welfare and high income inequality, which the SSA region to a large extent, has not.

The major goals of the economic reforms in the region since the 1980s have been to reduce structural vulnerability by the integration of trade, capital flows and as well as social contacts into the world economy to ensure sustained growth, poverty reduction, and human welfare improvements. Regardless of the long period of economic reforms, in SSA, majority of the region’s population are still living in abject poverty. African countries have introduced reforms in more structural matters such as market deregulation, trade liberalisation and public sector restructuring, including privatisation, but all have failed to keep human welfare crises in check (World Bank, 2014).
In spite of several various programmes and policies put in place in the past four decades such as (Structural Adjustment Programmes (SAPs); Poverty Reduction Strategies (PRSs), Millennium Development Goals, (MDGs); Social Protection, and Pro-poor growth programmes), the level of decline in human welfare in SSA remains very high. For example, 46.4 percent of the people in the region were living below the one dollar per day poverty line in 2004 as against 41.6 per cent in 1981 (Chen, Ravallion, 2004). In 2007, the World Bank poverty database put the proportion at 48 per cent. Between 1975 and 2005, Africa recorded an overall decline of about 20 per cent in the consumption of goods and services (UNDP Reports, 2006). Between 1980 and 2006, SSA’s private consumption per capita grew at an average of about 1.2 per cent (UNDP, 2007). This was the worst in the world, when compared with other regions such as Latin America and the Carribbean–1.6 per cent, South Asia–2 per cent, East Asia and the Pacific–5.6 per cent (World Bank Report, 2007).

The remaining part of this paper is divided into four sections. Section II presents the literature review and transmission mechanism. Section III highlights theoretical framework, model specification and Data Sources. Section IV briefs the analysis of results while Section V concludes and proffers recommendations.

2 Literature Review

Precise definitions of globalisation are elusive but it is usually interpreted as an increase in integration and interaction between countries manifested through an increase in the movement of commodities, labour, capital (financial and physical capital), communication, information and technology. Yashin (2002) defines globalisation as an economic revolution of the new millennium in information and communication technology (ICT). Clark (2000), Norris (2000) and Keohane and Nye (2000) define globalisation to be the process of creating networks of connections among actors at multi-continental distances, mediated through a variety of flows including people, information and ideas, as well as capital and goods. According to KOF Swiss Economic Institute (2010), globalisation is conceptualized as a process that erodes national boundaries, integrates national economies, cultures, technologies and governance as well as produces complex relations of mutual interdependence.

In terms of scope and dimension of globalisation, opinion varies from one scholar to another. Haveen (2002) identifies four processes in the current globalisation which he considers analytically separate but interrelated. The first is the convergence of ideas, norms and values, the second is the propagation of industrial organisation, the third is the emergence of one global market while the fourth is the erection of super national institution with a global legitimacy and reach. Musa (2000) identifies three basic forces driving globalisation as technology, preference and public policy while the United Nations Institute for Social Development (UNRISD) lists six key trends of globalisation as the spread of liberal democracy; the dominance of market forces; the integration of global economy; the transformation of the product system and labour market; the speed of technological change and media revolution (UNRISD, 1995).

This study examines the impact of major components of the 2010 KOF index of globalisation on human welfare. The index was introduced in 2002 by the Economic Research Institute Konjunkturforschungsstelle at ETH Zurich, Germany, it is reviewed annually. It provides the overall index which covers economic, social and political dimensions of globalisation. The index conceptualises globalisation as a process that erodes national
boundaries, integrate national economies, cultures, technology and governance with complex relations of mutual interdependence. The three dimensions of the index are:

- Economic globalisation – characterised as long distance flow of goods, capital and services as well as information and perceptions that accompany market changes;

- Social globalisation – which expresses the spread of ideas, information, images and people; and,

- Political globalisation – characterised by diffusion of government policies.

Human welfare embraces the performance of social indicators which may be positive or negative. The latter includes degree of hunger and malnutrition as a component of poverty, infant mortality and prevalence of child labour. While the former includes life expectancy at birth, access to basic social needs (sanitation, health, water, etc.), and human development index (Todaro, Smith, 2003). Hunger and under nutrition retard education, human development, productivity and life expectancy. The inability of parents to provide children with their needs make them susceptible to child labour while infant mortality has been one of nature’s cruel mechanism for keeping motherhood in great sorrow and grief. An increase in these negative indicators have the tendency to worsening the incidence of poverty.

Measurement of poverty has not only been difficult, it has equally being controversial. The monetary approach is the most commonly used. It identifies poverty with a shortfall in consumption (or income) from some poverty line. The approach faces the problem of how to appropriately determine the basic income level. The capability approach to the measurement of poverty, pioneered by Sen (1985, 1999), rejects monetary income as its measure of wellbeing. Hence, this study adopts the use of Human Development Index (HDI) as proxy for human welfare, a composite of people’s wellbeing, incidence of poverty, human development, and access to basic necessities of life. This decision is in line with evidence in the literature, for example, Henrich (2009).

The HDI is the value for each country’s journey covered towards the maximum possible value of one and how far it has to go to attain certain goals: an average life span of 85 years, access to education for all, decent standard of living, etc. Developed by the United Nations Development Programme (UNDP) as a composite of three dimensions-health, education and standard of living-and four indicators-life expectancy at birth, mean years of schooling, and Gross National Income (GNI) per capita. In the past, the HDI dimensions weight has been seriously questioned, this serves as its shortcomings. However, the HDI has been reworked and assigned equal weight to all the three dimension indices (HDR, 2010). The choice of HDI in measuring human welfare in a broader scope has also been justified by Noorkakhsh (1998), Riley (2005), Decanq and Lungo (2009), and Maddison (2010).

Prasad et al. (2004) begin by examining the relationship between financial integration and growth, they find no clear relationship between the two. This suggests that the impact of financial integration on human welfare-via possible growth effects- is likely to be small. They also explore another link whether financial integration has smoothened or exacerbated output and consumption volatility. They note that more macroeconomic volatility probably increases human welfare deterioration, particularly when there are financial crises. Since the poor are likely to be hurt in periods of consumption volatility, real income smoothening made possible by financial integration could be beneficial to the poor.

Prasad et al. (2004) argue that if financial globalisation is approached with the right set of complementary policies, it is likely to be growth-promoting and also less likely to lead to high-consumption volatility. These policies include the use of flexible exchange rate,
macroeconomic stabilisation policies, good governance and the development of strong institutions.

3 Model Specification and Data Sources

3.1 Analytical Framework and Model Specification

The model adapted for this study emanates from the Solow (1956) growth model employed in the empirical study of Heinrich (2009) and Rao and Vadlamannati (2010). The model is stated as:

\[
\ell^{HDI} = A_0K^\beta \ell^{\eta \ln q + \delta t}
\]  

Where: \( q \) is a vector of transmission mechanism sub-channels that explains the globalisation-growth-human welfare nexus, exogenously determined. \( A \) is multi-factor productivity or technological progress, \( K \) is physical capital, \( n \) is the rate of growth of output. We then consider trade (TRD), portfolio investment (PFI), foreign direct investment (FDI), labour migration (LBM), and information and communication technology (ICT) as trade openness, capital flow, technology and labour mobility transmission channels as noted by Nissanke and Thorbecke (2008; 2010) and used in Heinrich (2009) to proxy national symbols and global interactions. Nissanke and Thorbecke (2006) argue that transfer of technology and knowledge (skills and management know-how) are assumed to accompany FDI, not necessarily automatic or guaranteed in the globalisation-growth-human welfare transmission mechanism cycle.

Meanwhile, Prasad et al. (2004) and Harrisson (2006) identified good governance as a significant factor that determines the capital flow-growth-human welfare channel. Therefore, on the basis of the foregoing arguments and objectives of this study, each of the transmission channel components, and good governance index (GGI) are taken as one of the vector \( q \) components that influence human welfare changes. Equation (1) is extended as:

\[
\ell^{HDI} = A_0K^\beta \ell^{\sum \eta \ln(\text{TRD, PFI, FDI, LBM, GGI}) + \delta t}
\]  

From equation (2), where \( t=1 \), \( n \) is used to proxy as population growth rate of social welfare, presumed to be equal to the exogenous growth rate of labour, and \( K \) is taken as the percentage share of fixed capital formation (FCF) from GDP. We then have,

\[
\ell^{HDI} = A_0 FCF^\beta \ell^{\sum \eta \ln(\text{TRD, PFI, FDI, LBM, ICT, GGI}) + \delta t}
\]  

Therefore, equation (3) forms the exponential growth model for analysing the impact of globalisation on human welfare in SSA. For estimation, equation (3) is linearly specified in a panel model form to capture the cross-country and time observation by taking the natural logarithm of both sides, this leads to:

\[
HDI_{it} = a_{i0} + \beta \ln FCF_{it} + \eta_1 \ln TRD_{it} + \eta_2 \ln PFI_{it} + \eta_3 \ln FDI_{it} + \eta_4 \ln LBM_{it} + \eta_5 \ln ICT_{it} + \eta_6 \ln GGI_{it} + \delta n_{it} + u_{it}
\]
Where: \( a_0 = \ln A_0 = \pi_2 \rho \ln A \). The human welfare index and indices of access to basic necessities shall be regressed on the basic components of globalisation. The specified panel regression equation (4) is estimated for SSA (pool of all selected countries in SSA).

The SSA countries comprise Central Africa (10 countries), East Africa (11 countries), Southern Africa (10 countries) and West Africa (15 countries). Four (4) countries are selected from each region (Southern Africa, Central Africa, East Africa and West Africa). This is to ensure balance across regions, because the panel models will be analysed on sub-regional basis after the general analyses for the entire region (SSA) are made. Secondary data documented in the World Development Indicators (WDI) CD-ROM, January, 2014 by the World Bank were sourced and used for this study.

### 3.2 Estimation Techniques

A pool of cross-section and time series data is best suited to study dynamic changes and detect unobserved effects in complex behavioural models. The use of panel data analysis allows the expansion of sample size, it is also very useful when analysing dynamic effects in a region such as SSA where poverty, welfare changes and degree of integration differ substantially across countries compared to other developed regions. The fixed effects estimation technique was adopted for estimating the specified panel models in this study. The choice of this technique is because it assumes that the unobserved effects vary between countries (i.e. heterogeneous) rather than a random term as assumed using the random effects technique. The cross section weights (a feasible GLS specification assuming the presence of cross-section heteroskedasticity) shall be taken to correct for cross-section heteroskedasticity and autocorrelation of idiosyncratic disturbance, this is to ensure that the fixed estimator is efficient and consistent for analysing this study as used by earlier empirical studies (Hammaris and Kai, 2004; Guordon et al., 2006; Heinrich, 2009). To precisely ensure the efficiency of the fixed effects estimator, the Hausman test is used to determine the best efficient estimator between fixed and random effects.

### 3.3 Data Description

The data required for the analysis is classified into two namely the dimensions of globalisation and the indices or measures of human welfare. The dimensions of globalisation include Trade Openness (TRD), Foreign Direct Investment (FDI), Portfolio Investment (PFI), Labour Migration (LBM), and Access to Telephone (TEL). The measures of human welfare are Human Development Index (HDI), Access to basic necessities (Sanitation, Health Services and Water), Life Expectancy at Birth (LEI), Mean Year of Schooling (MYS) and Infant Mortality Rate (IMR).

TRD is the sum of exports and imports of goods and services as a share of gross domestic product. The data is sourced from World Bank National Accounts data and OECD National Accounts data files

FDI is the net inflows of investment to acquire a lasting interest. It is the sum of equity capital, reinvested earnings, other long term capital and short term capital as shown in the balance of payment. The FDI net inflow (% of GDP) was sourced from International Monetary Fund supplemented by data from the United Nations Conference on Trade and Development and official national sources (Various editions).
PFI refers to the portfolio investment (% of GDP). It excludes liabilities constituting foreign authorities reserves in equity securities and debt securities. The data is sourced from International Monetary Fund, Balance of Payment Statistics Year book and data files (Various editions).

LBM is the Net Labour Migration per 10,000 populations. It is the number of labour immigrants minus the number of labour emigrants, including citizens and non-citizens. The data is sourced from the United Nations Population Division; World Population prospects (Various editions).

TEL is the proportion of people that are connected to telephone per thousand data of a given population. Integrated services digital network channels and fixed wireless subscribers are included. The data is sourced from the International Telecommunication Union, World Telecommunication/ICT Development Report and database and the World Bank estimates.

Access to basic necessities of life (water, sanitation and health care) is measured in terms of the percentage of the population that have access to water, sanitation and healthcare respectively. The data are sourced from the World Health Organisation, United Nations Children’s Fund and Joint Measurement Programme (JMP).

HDI is a composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, knowledge and a decent standard of living in terms of per – capita income. The data are sourced from UNESCO Institute for Statistics (2013) and World Bank data base.

Life expectancy at births (years) is the number of years a new born infant could expect to live if prevailing pattern of age specific mortality rates at the birth stay the same throughout the infant’s life. Data is sourced from United Nations Data Base.

The Mean Year of Schooling (years) is the average number of years of education received by people age 25 and older, converted from education attainment levels using official duration of each level. The data is sourced from the UNESCO Institute for Statistics data.

Infant Mortality Rate (IMR) is the number of deaths (below age 1) recorded per 1,000 live birth in a given year. The data is sourced from the World Health Organisation and United Nation Children’s Fund.

The Good Governance Index (GGI) is the incorporated control variable into the model. It reflects the perceptions of the quality of public services, the quality of civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, adherence to the rule of law, transparency and credibility of government’s commitment to such policies. The required data was sourced from the Worldwide Governance Indicators (2015).

4 Analysis of Results

For precise understanding, policy inference and robustness check, this study further comparatively examined the effect of the dimensions of globalisation on human welfare, other welfare measures and access to basic necessities in Sub-Saharan Africa (SSA) from 1980 to 2012 between the more and less globalised countries. The sampled SSA countries were further reclassified into more globalised (Cameroon, Gabon, Kenya, Mauritius, Botswana, South Africa, Ghana, and Nigeria) and less globalised (Central Africa Republic, Rwanda, Tanzania, Uganda, Malawi, Mozambique, Benin, and Niger) regions. Countries with KOF globalisation index less than the sub-regional average is classified less globalised while those with index higher than the sub-regional average is classified more globalised. The motivation
for the comparative analysis stemmed from the need to determine the extent to which varying degree of globalisation influence human welfare status in SSA and to investigate the influence of aggregation on the overall results (i.e. aggregation biasness). This is to give further policy clarity and guide policy simulation relative to global integration among SSA countries with the global market.

The estimated theoretical augmented fixed effects regression models of human welfare, other welfare measures and access to basic necessities for the more and less globalised SSA regions are shown on Table 1. The results indicate that TRD as an economic dimension of globalisation was found to exert positive effect on HDI, LEI, access to improved WAT and HCS, while it exerts negative effect on IMR in the more and less globalised regions in SSA. These effects conform with the expected theoretical signs and were statistically significantly at 1% critical level. In magnitude, 10% increase in TRD changed HDI, LEI, IMR, access to WAT and HCS by 0.5%, 0.5%, 1.97%, and 0.7% in the more globalised SSA region and by 0.77%, 0.71%, -3.21%, 0.53%, and 1.13% in the less globalised SSA region respectively.

The results presented further indicate a reversal effect of TRD on mean year of schooling and access to improved sanitation between the more and less globalised regions in SSA. Precisely, TRD in the more globalised region exerts positive (0.0004) effect on MYS, while it was negative (-0.001) for less globalised region. This reflects the high level development effect on human welfare in terms of access to basic education. Also, TRD was found to exert negative and positive effects on access to improved SAN respectively for more and less globalised regions by a magnitude of -0.17% and 0.13% for a 10% increase in TRD. This also indicates the effect of a high level of urbanisation growth rate in the more globalised region that accelerates environmental pollution level.

It is clear and apparent from the analysis that the economic dimension of globalisation via trade flow channels improves human welfare, other welfare status, and access to basic necessities in the more and less globalised regions. But, the size of effect is higher for the less globalised region compared to the more globalised region. This indicates that the less globalised region benefits more from trade global interactions to enhance human welfare because of the large output size with relatively low trade volumes compared to the more globalised region that has high trade volumes.

Similarly, the results presented on Table 1 further indicate that at 1% critical level, the share of economic active population of total (n) in more and less globalised regions significantly enhanced HDI, reduced IMR, MYS, and access to improved sanitation between 1980 and 2012. These conform with the theoretical expectations. In magnitude terms a 1% change in working age population share (n) enhanced HDI, reduced IMR, MYS, and access to improved SAN by 0.78%, -0.95%, 0.03%, and 2.08% for the more globalised region and by 1.12%, -0.88%, 0.03%, and 1.62% for the less globalised region, respectively. Also, differential effects were reported for the effect of economic active population share on other welfare measures. At 1% critical level the share of economic active population (n) was found to be significantly but negatively related to LEI and access to improved HCS for more globalised region (-0.71% and -0.88% for 1% change in n), while it was significantly and positively related to LEI and HCS for the less globalised region (0.37% and 0.86% for 1% change in n) in SSA. Similarly, at 1% critical level, economic active population share (n) had significant positive effect on access to improved water for the more globalised region, and had an insignificant reversal effect for the less globalised region.
### Fixed Effects Regression of Human Welfare and Transmission Channel of Globalization between More and Less Globalised SSA Countries

<table>
<thead>
<tr>
<th></th>
<th>HDI</th>
<th>LEI</th>
<th>IMR</th>
<th>MYS</th>
<th>WAT</th>
<th>SAN</th>
<th>HCS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MG</strong></td>
<td>-0.009</td>
<td>-36.66</td>
<td>90.77</td>
<td>24.18</td>
<td>132.43</td>
<td>193.80</td>
<td>-0.90</td>
</tr>
<tr>
<td><strong>LG</strong></td>
<td>(-0.01)</td>
<td>(-15.90)***</td>
<td>(93.97)***</td>
<td>(13.25)***</td>
<td>(51.64)***</td>
<td>(20.51)***</td>
<td>(-23.53)***</td>
</tr>
<tr>
<td><strong>CFC</strong></td>
<td>-0.002</td>
<td>-0.74</td>
<td>0.037</td>
<td>0.031</td>
<td>-0.032</td>
<td>-0.048</td>
<td>-0.003</td>
</tr>
<tr>
<td><strong>TRD</strong></td>
<td>0.950</td>
<td>0.97</td>
<td>0.90</td>
<td>-0.179</td>
<td>-0.321</td>
<td>0.0004</td>
<td>-0.001</td>
</tr>
<tr>
<td><strong>PFI</strong></td>
<td>-0.004</td>
<td>-0.95</td>
<td>-0.015</td>
<td>-0.058</td>
<td>-0.014</td>
<td>0.520</td>
<td>0.0003</td>
</tr>
<tr>
<td><strong>FDI</strong></td>
<td>0.377</td>
<td>0.585</td>
<td>0.111</td>
<td>0.297</td>
<td>-0.203</td>
<td>-3.555</td>
<td>0.004</td>
</tr>
<tr>
<td><strong>LBM</strong></td>
<td>-0.056</td>
<td>-0.003</td>
<td>-0.231</td>
<td>-0.014</td>
<td>0.671</td>
<td>0.233</td>
<td>-0.001</td>
</tr>
<tr>
<td><strong>GGI</strong></td>
<td>-0.043</td>
<td>-0.019</td>
<td>-0.010</td>
<td>0.017</td>
<td>0.069</td>
<td>0.052</td>
<td>-0.001</td>
</tr>
<tr>
<td><strong>TEL</strong></td>
<td>0.046</td>
<td>0.885</td>
<td>0.034</td>
<td>0.632</td>
<td>-0.033</td>
<td>-0.413</td>
<td>0.0002</td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>3.780</td>
<td>1.118</td>
<td>-0.709</td>
<td>0.371</td>
<td>-0.947</td>
<td>-0.888</td>
<td>0.029</td>
</tr>
<tr>
<td><strong>Adj. R2</strong></td>
<td>0.927</td>
<td>0.858</td>
<td>0.931</td>
<td>0.793</td>
<td>0.948</td>
<td>0.810</td>
<td>0.828</td>
</tr>
<tr>
<td><strong>S.E. of Reg</strong></td>
<td>3.231</td>
<td>2.995</td>
<td>2.243</td>
<td>3.594</td>
<td>8.057</td>
<td>13.767</td>
<td>0.09</td>
</tr>
</tbody>
</table>

**Note:** [1] MG and LG represent More and Less Globalized models respectively; [2] Model is the augmented theoretical model with control variables; [3] *** denotes significant at 1%; ** denotes significant at 5%; * denotes significant at 10%. [4] All regressions use the fixed cross-section effects cross-section weights standard errors and covariance (4, 1) corrected.

**Source:** Authors’ Computation.
The estimated theoretical augmented fixed effects regression models of human welfare, other welfare measures and access to basic necessities for the more and less globalised SSA regions indicate that FDI as capital dimension of globalisation was found to exert positive effect on HDI, LEI, and access to improved HCS, while it exerted negative effect on IMR in the more and less globalised regions in SSA. These effects conform with the expected theoretical signs and statistically significantly at 1% critical level. In magnitude terms, 10% change in capital dimension of openness enhanced HDI, LEI, but reduced IMR, and access to improved HCS by 3.77%, 1.11%, -2.03%, and 5.22% in the more globalised SSA region; and by 5.85%, 2.97%, -35.6%, and 4.92% in the less globalised SSA region respectively. The reported estimates further reveal evidence of reverse effects. It indicate that the impact of capital flow channel of globalisation (FDI) on MYS, access to improved WAT, and SAN between 1980 and 2012 was negative in the more globalised region (by magnitude of -0.04%, -0.15%, -0.10%, and 0.14% for 10% change in FDI) and positive in the less globalised region (by a magnitude of 0.14%, 5.76%, and 5.72% for 10% change in FDI) respectively. The reported effects on human welfare development of the less globalised SSA region were found in tandem with the theoretical expectations alone. Also, the effects for the two subregions in SSA were found statistically significant at 1% critical level excluding for the negative effect on access to improved WAT for more globalised region.

Also, the reported estimates of PFI as financial dimension of globalisation indicate a negative effect on HDI, LEI, and access to improved HCS, while a positive effect on access to improved SAN in the more and less globalised regions. These effects do not conform with the theoretical expected signs for SAN, and these effects were statistically significant at 1% critical expect for HDI and access to SAN parameter estimates for more and less globalised region in SSA, respectively. For 10% change in financial dimension of globalisation (PFI), HDI, LEI, and HCS lowered, while SAN was enhanced by -0.04%, -0.15%, -0.10%, and 0.14% in the more globalised region; and by -6.95%, -5.58%, -7.18%, and 1.18% in the less globalised region, respectively. Similarly, a differential effect between the more and less globalised region of PFI on IMR, MYS, and access to improved WAT were reported on Table 1. The estimates indicate that in tandem with the expected signs at 1% significance level, PFI exerts negative effect on IMR in the more globalised sub region, while positive effect on IMR in the less globalised regions. Further, at 1% critical level and in tandem with the expected signs, PFI exerted positive and significant effect on MYS, and access to improved WAT supply, in the more globalised region by a magnitude of 0.003% and 0.28% for a 10% change. Contrarily, at 1% critical level and not in tandem with the expected signs, PFI exerts negative effect on MYS and access to WAT supply by a magnitude of -0.1% and -0.689% respectively for a 10% change in the less globalised region.

In conformity with theoretical expected signs and at 1% critical level, gross fixed capital stock as a measure of domestic capital formation exerted positive effect on LEI, SAN, and HCS, while it exerted a negative effect on IMR in the more and less globalised regions. In magnitude terms, a 10% change in domestic capital formation (fixed capital stock), enhanced LEI, SAN, HCS, but reduced IMR correspondingly by 0.37%, 0.28%, 2.23%, and -0.32% in the more globalised region; and by 0.31%, 0.33%, 0.45%, and -4.87% in the less globalised region. Although, a reversal effect was reported for the effect of fixed capital stock on HDI, MYS and access to improved WAT supply between the more and less globalised region. Contrary to the expected theoretical signs, fixed capital stock exerts negative and significant effect on HDI, MYS and access to improved WAT supply, by a magnitude of -0.02%, -0.03%, and -0.74%, respectively in the more globalised region between 1980 and 2012 for a 1%
change. Also, in the less globalized region, at 1% critical level and in conformity with the theoretical expectations, fixed capital stock exerted positive and significant effects on HDI, MYS, and access to improved WAT supply by a magnitude of 0.74%, 0.05%, and 1.28%, respectively.

The empirical analysis indicates that domestic capital formation and capital dimension of globalisation were human welfare enhancing in the more and less globalized regions between 1980 and 2012. Nonetheless, in terms of magnitude, the effects sizes were more intensive and highly significant in less globalised region, particularly in cases of differential effects. In addition, it was only financial dimension of globalisation via PFI that was found to deteriorate human welfare in both regions, while the effect sizes were higher in terms of magnitude for the less globalised region. Also, PFI was more welfare enhancing in the more globalised region compared to the less globalised sub region.

The reported estimates of net LBM as a labour mobility dimension of globalisation on the same Table 1 indicate negative effects on HDI, LEI, and MYS, while positive effects on IMR, access to improved WAT and SAN in the more and less globalised regions. These effects do not conform with the theoretical expected signs except for HDI, LEI, IMR, and MYS; these effects were statistically significant at 1% critical except for HDI parameter estimates for more and less globalised regions in SSA respectively. For 10% change in labour mobility flow dimension of globalisation (LBM), HDI, LEI, and MYS lowered, while access to improved WAT, SAN, and IMR were enhanced by -0.56%, -2.31%, -0.01%, 11.54%, 6.71%, and 6.07% in the more globalised region; and by -0.03%, -0.14%, -0.01%, 0.50%, 0.38%, and 2.23% in the less globalised region, respectively. Similarly, differential effects between the more and less globalised regions with respect to the effects of LBM on access to improved HCS were reported on the table.

The estimates indicate that in tandem with the expected signs and 1% significance level, LBM exerted negative effect on HCS in the more globalised sub region by a magnitude of -1.84%, while positive effect on HCS in the less globalised regions by a magnitude of 0.89%.

Similarly, the results indicate that access to telephone (TEL) as information dimension of globalisation was found to exert positive effects on HDI, LEI, MYS, access to improved SAN, and HCS, while it exerted negative effects on IMR in the more and less globalised regions in SSA. These effects conform with the expected theoretical signs and statistically significantly at 1% critical level. In magnitude terms, 10% change in access of people to telephone lines (TEL) as information dimension of openness enhanced HDI, LEI, MYS, and access to SAN, HCS, but reduced IMR: by 0.46%, 0.34%, 0.002%, 0.09%, 0.58%, and -0.33% in the more globalised SSA region; and by 8.85%, 6.32%, 0.22%, 5.58%, 9.12%, and -41.32% in the less globalised SSA region, respectively. The reported estimates further reveal evidence of reverse effects. It indicates that the impact of information flow channel of globalisation (TEL) on access to improved WAT between 1980 and 2012 was negative in the more globalised region (by magnitude of 0.01% for 10% change in TEL) and positive in the less globalised region (by a magnitude of 21.63% for 10% change in TEL) respectively. The reported effect on human welfare development in the less globalised SSA region was in tandem with the theoretical expectation alone. Also, the effects for the two categories in SSA were found statistically significant at 1% critical level except for the negative effect on WAT for more globalised region.

The reported estimates for GGI as institutional and governance quality have negative effects on HDI, MYS, and access to improve WAT, while a positive effect on IMR in the
more and less globalized regions of SSA. These effects do not conform with the theoretical expected signs but they are statistically significant at 1% critical for more and less globalised regions in SSA. For 10% change in GGI, HDI, MYS, and access to improved WAT lowered by -0.43%, 0.69%, -0.01% and 0.48% in the more globalised region; and by -0.19%, 0.52%, -0.01%, and -0.91% in the less globalised region respectively. Similarly, differential effects between the more and less globalised regions with respect to the effect of GGI on LEI, access to improved SAN and HCS as reported in the table. The estimates indicate that in tandem with the expected signs and at 1% significance level, GGI exerted positive effect on access to SAN in the more globalised subregion by a magnitude of 0.14%, while negative effect on access to sanitation (but this does not conform with the expected sign) in the less globalised regions by a magnitude of -0.30%. Also, at 1% critical level, the effects of GGI on LEI and HCS were respectively: negative and significant (though this does not confirm with the theoretical expectation) in the more globalised region by magnitude of -0.10% and -0.33% for 10% change in GGI; and positive and significant in the less globalised region by magnitude of 0.17% and 0.02% for 10% change in GGI.

In summary, the empirical analysis indicates that information and communication dimensions of globalisation were human welfare enhancing in the more and less globalised regions between 1980 and 2012. But the effect sizes were more intensive and highly significant in less globalised region than the more globalised region. Also, it was found that labour mobility dimension of globalisation via net LBM was found to deteriorate human welfare in both regions, while the effect sizes were higher in terms of magnitude for the more globalised region. Similarly, institutional and governance quality was more human welfare deteriorating in the less globalised region, compared to the more globalised sub region.

5 Conclusion

This study investigates the comparative effects of globalisation between the highly and weakly globalised economies in sixteen SSA countries. We used four globalisation channels of transmission which were trade openness, financial and capital flows, labour mobility and access to telephone. The SSA classification of weakly globalised (8) and strongly globalised (8) countries was based on KOF globalisation index which was sourced from the world Development indicator for the period of 1980-2012. The feasible generalised least square (GLS) estimator was utilized to estimate the fixed and random effects panel regression models. Hausman test was used to determine the efficient estimator between fixed and random effects. The result revealed a mix result in some cases and unidirectional in some. Thus, countries with higher intensity of globalisation have a greater improvement in their human welfare indicators compared to countries with weak globalisation indices. We suggest that an improved reform in global integration to enable the region maximize the immense benefits inherent in global connections.

References


Clupper, R. (2002). Approaches to Globalisation and inequality within the international system. Paper prepared for UNRISD project on Improving Knowledge on Social Development in International Organisation, September.


