

“Human capital development: what can South Africa learn from Botswana?”

AUTHORS	Pumela Msweli
ARTICLE INFO	Pumela Msweli (2015). Human capital development: what can South Africa learn from Botswana?. <i>Environmental Economics</i> , 6(1-si), 144-151
RELEASED ON	Friday, 05 June 2015
JOURNAL	"Environmental Economics"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

© The author(s) 2026. This publication is an open access article.

Pumela Msweli (South Africa)

Human capital development: what can South Africa learn from Botswana?

Abstract

South Africa and Botswana share a number of commonalities, although the two countries are distinctly different in terms of economic performance, population size, and human capital development. This paper provides analysis of human capital development factors that contribute to differences in the human capital index score of the two countries. In 2013, the World Economic Forum published the first edition of the Human Capital Report which measures human capital using an index based on four pillars: (1) education; (2) health and wellness; (3) workforce employment; and (4) enabling environment. Botswana's human capital index score is higher than that of South Africa even though both countries have negative human capital index scores. The indicators that show the fundamental differences between South Africa and Botswana are education, health and wellness as well as workforce employment. The differences are discussed in terms of their implications to policy formulation.

Keywords: human capital index, investment in education, economic growth.

JEL Classification: H52.

Introduction

South Africa and Botswana share a number of commonalities. Firstly, both countries have emerged from a colonial past. Secondly, both countries are ranked as upper middle income economies by the World Bank. Notwithstanding the commonalities, Botswana is distinctly different to South Africa in terms of economic performance, population size, and human capital development. South Africa has an estimated population of 49.3 million people (Statistics South Africa, 2013), whereas Botswana's population size is estimated to be 2.13 million (Central Statistical Office Botswana, 2013). Botswana has enjoyed one of the fastest growth rates in per capita income since independence in 1966 (World Bank, 2013). The economic growth rate of the country averaged 9% per year in 1967-2006, but slowed during 2007 and 2008 to only 3% before dropping to minus 3.7% in 2009 (Index Mundi, 2014). In 2010, real GDP grew by approximately 7.5%.

South Africa's economy on the other hand was underperforming prior to the 1994 democratic elections and grew steadily to growth rates of over 5% over the 2005-2007 period, which was followed by negative growth in 2009 and an economic recovery in 2010-2011. With respect to governance, South Africa is perceived to be much more corrupt than Botswana. This view is based on the 2013 Transparency International Corruption Perception Index (CPI) that ranked South Africa 72nd and Botswana 30th out of 177 countries on corruption. The CPI scores countries on a scale of 0 (highly corrupt) to 100 (very clean). South

Africa's score is 42 and Botswana's is 64 out of 100 (Transparency International, 2013).

What seems to be surprising is that, while government expenditure in education increased in Africa, education expenditure was found to be inefficient as it did not yield the desired human development outcomes. The increase in government expenditure in South Africa for example coincides with increase in inequality. Not only does South Africa have the highest levels of inequality in Southern Africa, the country's Gini coefficient increased significantly from 1992-2008. Investment in education is considered as the main redistributive instrument in societies characterized by high income inequality. If South Africa performs poorly with respect to its human capital development as distribution and investment in education increases, then there must be other factors at play in human capital development. This paper contributes to knowledge by looking at human capital development in South Africa and Botswana through the human capital index lens. Botswana as a neighboring country to South Africa has been chosen as a point of reference because of its economic resilience and because of the fact that it has been touted as one of the countries that maintained one of the world's highest economic growth rate (Index Mundi, 2014).

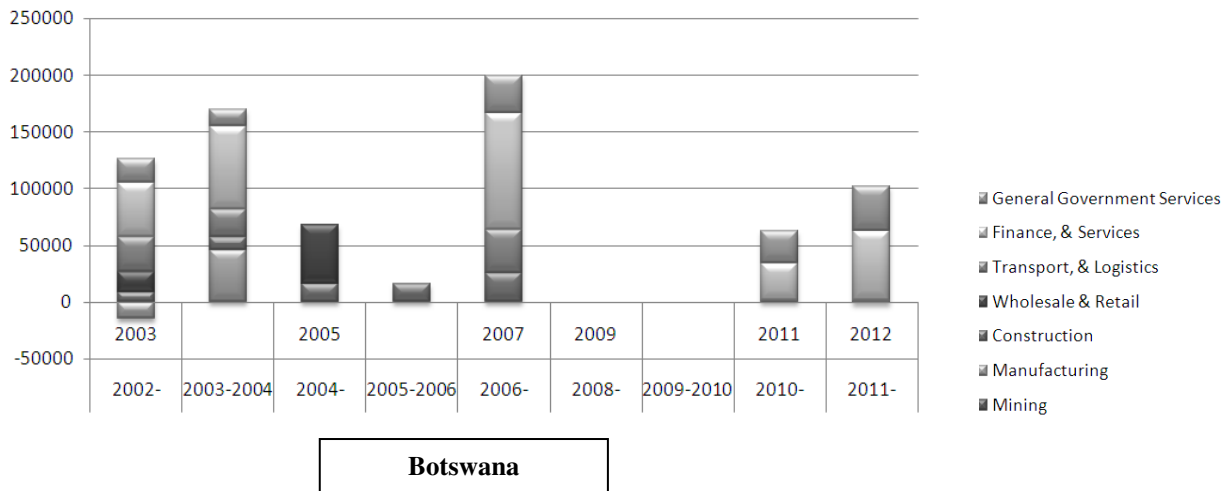
1. Background: comparing economic performance of South Africa and Botswana

The economy of Botswana is supported by a strong productive sector, whereas in South Africa, the economy is supported by an unsustainable high consumption of products and services. This is illustrated by the fact that financial services is a much bigger industry in South Africa compared to Botswana (see Figure 1). While growth in the mining and construction sector has been modest to non-existent in South

© Pumela Msweli, 2015.
Ph.D., Professor, Durban University of Technology, Research and Postgraduate Support, South Africa.

Africa especially post 2007, both sectors have been growing steadily in Botswana. The GDP growth rate in Botswana has been at its lowest in 2001. This period coincided with low growth rates in all the

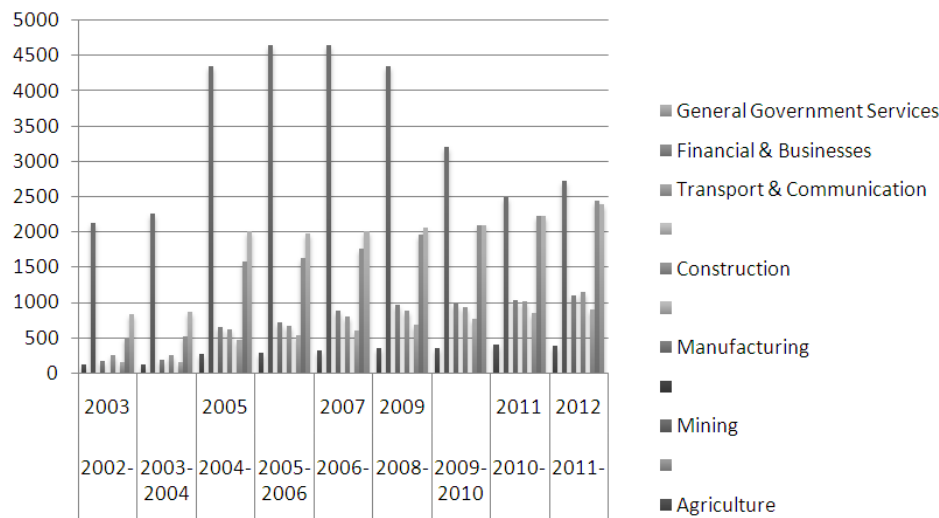
economic sectors in Botswana with the exception of mining. South Africa posted high growth rates over the 2005-2007 period, which is followed by negative growth in 2009.



Source: based on calculations done on the basis of data obtained from Statistics South Africa 2012.

Fig. 1. Annualized quarterly change in GDP by industry, R million (at constant 2005 prices seasonally adjusted)

South Africa’s growth in national savings has been lower than the national savings of Botswana from 2000-2011.



Source: adapted from Central Statistical Office (CSO) Botswana (2013a, 2013b, 2013c, 2013d).

Growth National Savings: South Africa vs Botswana

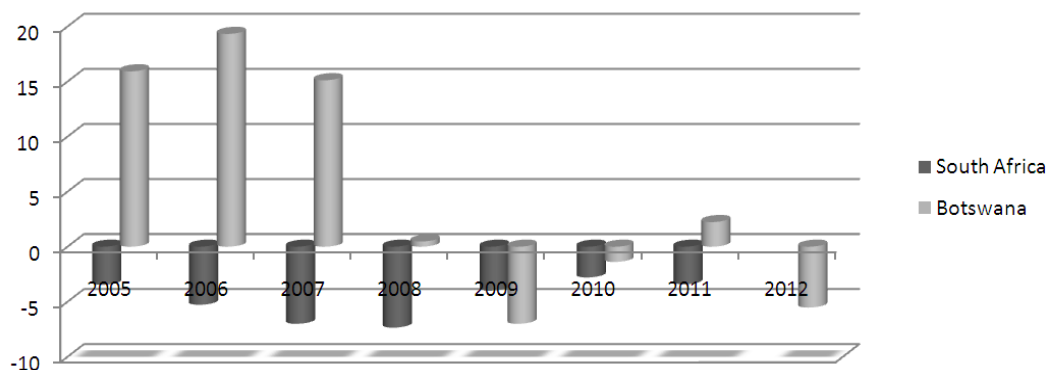


Source: adapted from World Bank Country Statistics (2001-2012).

Fig. 2. South Africa’s growth national savings in comparison to Botswana

Figure 3 shows that the current account balance, which reflects the difference between savings and investment, as well as the difference between exports and imports, has deteriorated between

2002 and 2008 in South Africa. The downward trend has only been posted during the period of the economic meltdown in the case of Botswana.



Source: adapted from Mecometer (2014).

Fig. 3. Current account balance as a percentage of GDP (2005-2012)

2. Literature review

Human capital is a sum total of experience, knowledge, skills, competences and other human attributes that play part in economic activity. Kwon (2009) distinguishes human capital that is a target of investment through education and training from the one that is utilized as a production element, which can generate added value. In conceptualising human capital Kwon (2009) views human capital as having capacity to create and to connect with “self and environment” using knowledge, skills, competency and experience.

Similar to Kwon’s (2009) views about human capital, Baldacci, Clements, Gupta, and Cui (2004) recognise the role of human capital in fostering economic growth. Baldacci et al. (2004) study looked into direct and indirect channels linking social spending, human capital, and growth. The study showed that both education and health spending have a positive and significant direct impact on the accumulation of education and health capital, and thus can lead to higher economic growth. This, taken together with Kwon’s notion of human capital, means that one can expect human capital development to be positively linked to economic growth.

In neo-classical growth models, the long-run rate of growth is exogenously determined by either the savings rate (the Harrod-Domar model) or the rate of technical progress (Solow model). The neo-classical growth models have been criticized on the basis that the savings rate and rate of technological progress are unexplained (Romer, 1990). According to Romer (1990) endogenous growth theory tries to overcome this shortcoming by building growth models on the basis that long run growth rate of an economy depends on policy measures that ensure that adequate

investment on human capital are in place to drive economic growth. In other words policies that encourage investment in education, as also pointed out by Shupp (2002), have a higher propensity to increase the growth rate in some endogenous growth models by increasing the incentive for innovation.

Historical evidence owing to the achievements of South East Asian economies has often been cited as examples of the importance of human capital to economic growth (Clarke, 2011). As pointed out by Becker (1993), despite their generally low endowment of natural resources, South East Asian economies have managed to post remarkable economic performances largely attributed to the quality of their human capital development. Researchers such as Schultz (1961), and Lucas (1988) have shown a positive link between education and economic progress mainly in the form of growth rate of per capita gross domestic product (GDP). The theoretical and applied literature on growth and development in Sub Saharan Africa has provided added rationale for the link between education and economic development. For example, a number of scholars (Fedderke, 2006; Kraak and Press, 2007) stress the importance of aligning the education system with a productive economic system such that education and training growth indicators are in congruence with economic growth indicators.

Human capital has been found to drive foreign direct investment (Bayraktar, 2013; Mottalab and Kalirajan, 2010; Ogunade, 2011; Pigato, 2001). Noorbaksh, Paloni, and Youssef’s (2001) study that looked at the link between human capital and the flow of FDI in 36 developing countries in Asia, Africa and Latin America also found that human capital is a significant determinant of FDI inflows. Blomström and Kokko (2002) approached human

capital from the perspective of knowledge spillovers. Blomström and Kokko (2002) recognized the possibility that FDI contributes to income inequality. Their argument is based on the fact that, from a developing country perspective, the initial human capital capacity does not usually match the technology requirements of foreign companies investing in a host country. It is argued that this mismatch in human capital could increase income inequality as foreign investors introduce new technology in the host country.

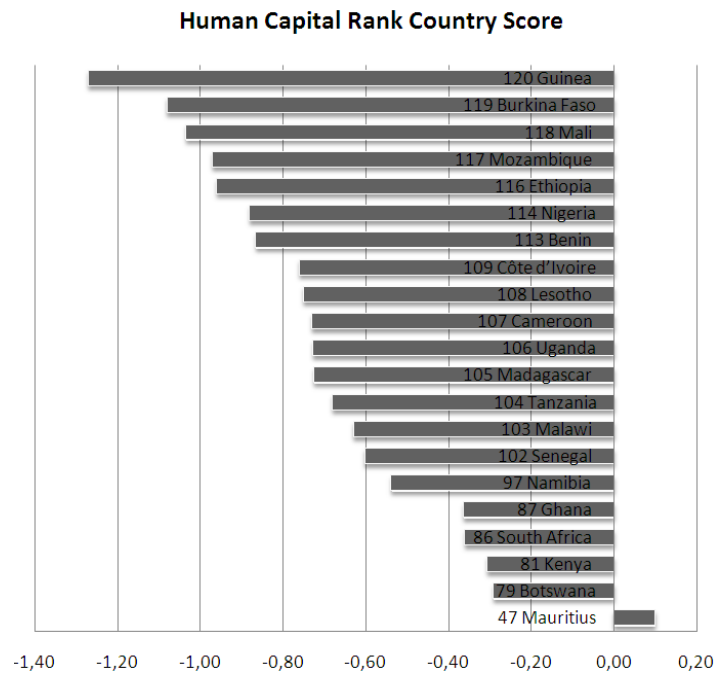
3. Data and index construction

This study is based on secondary data in the Human Capital Report of 2013 published by the World Economic Forum that covers 122 countries. Given the different scales used to measure the indicators used to construct the index, z-scores were used to standardize the data (Human Capital Report, 2013). As mentioned earlier the index has four pillars. A country score for each pillar was determined by an

unweighted average of all available scores within a particular pillar (Human Capital Report, 2013).

4. Human capital development: South Africa vs Botswana

In 2013, the World Economic Forum published the first edition of the Human Capital Report which measures human capital using an index based on four pillars: (1) education; (2) health and wellness; (3) workforce employment; and (4) enabling environment. Education captures access, quality of education, educational attainment. Health and wellness captures the population's physical and mental wellness from childhood to adulthood. Workforce employment on the other hand measures talent, skills and experience of a population. Lastly, the enabling environment pillar measures infrastructure (mobile and internet users, and quality of domestic transport) as well as collaboration and legal framework.

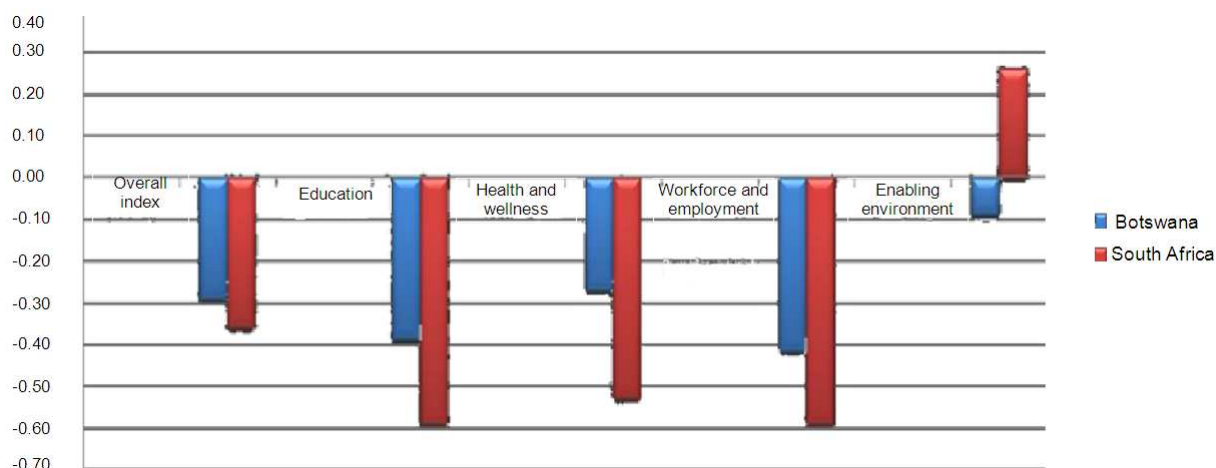


Source: adapted from the World Economic Forum 2013 Human Capital Index Report.

Fig. 4. Human capital measure: Sub-Saharan Africa

Fundamentally, enabling environment captures the extent to which human capital is deployed effectively. Enabling environment includes physical infrastructure (transport which facilitates access to workplaces); telecommunication; cross-industry and cross-sector collaboration; legal framework (ease of doing business, protection of physical property and intellectual property as well as social safety); social mobility (enabling socio-cultural practices that facilitate progress in human capital development). Although the index covers 122 countries, Figure 4 presents the human capital index of the sub-Saharan countries. As Figure 5 shows, Mauritius

tops African rankings for Human Capital development followed by Botswana, then Kenya, with South Africa closely behind Kenya. According to the Human Capital Index Report (2013) Sub-Saharan Africa is the worst performing region in the world, compared to other regions. North America occupies the first spot followed by Europe and Central Asia. Next is Asia and the Pacific occupying the 3rd spot. Latin America and the Caribbean occupy the fourth spot regionally, next is the Middle East and North Africa. There are only two regions with positive human capital scores: (1) North America; and (2) Europe and Central Asia.



Source: adapted from the World Economic Forum 2013 Human Capital Index Report.

Fig. 5. A comparison of Botswana and South Africa on the four pillars of the Human Capital Index

Figure 5 shows that Botswana performed particularly well in the education, workforce and employment pillars. South Africa performed better than Botswana in the enabling environment pillar. According to the 2013 Human Capital Index (HCI) Report, South Africa’s very poor scores for workforce and unemployment are attributed to high youth unemployment and low labour force participation. The HCI report points out that despite South Africa’s good scores for staff training, the country has one of the lowest scores on the ease of finding skilled employees and pay relating to productivity indicators.

Conclusion and policy implications

The economies of South Africa and Botswana are considerably diversified. However, the economy of Botswana is driven largely by its production sector, the diamond mining sector, in particular. In South Africa growth has been driven by consumption, which saw growth in the Wholesale and Retail sector surge in 2005. Economic growth in both countries slowed down considerable during the global economic meltdown in 2008-2009. South Africa’s economy was also adversely affected by the electricity crisis that came about as a result of the power plant problems experienced by the state power supplier. The slow economic growth in South Africa was also deepened by mining unrest. The large dip in Botswana’s growth rate in 2009, on the other hand, is largely attributed to the shrinking industrial sector after the global economic meltdown reduced demand for Botswana’s diamonds.

Even though Botswana’s HCI index score is higher than that of South Africa, both countries had negative HCI scores. Botswana outperformed South Africa with respect to the following three pillars of the index: (1) Education, (2) Health and Wellness, (3) Workforce and Employment. The highest ranking

pillar in South Africa is Enabling Environment. According to the HCI Report (2013), the Collaboration and Legal Framework dimensions of the Enabling Environment pillar are strong. However, the domestic transport indicator pulls down the Enabling Environment pillar (HCI, 2013). The Enabling Environment pillar that is made up of four components (infrastructure, collaboration, legal framework and social mobility) is the only area that distinctively sets South Africa apart from Botswana.

Policy could look into creating incentives for private sector to work with government and financial institutions to aggregate savings and distribute them in a manner that links investment to human capital development. The policies that have been put in place to address high levels of unemployment, inequality and poverty need to be buttressed by substantial investment that focuses on improving the quality of education in South Africa. The education system and the quality of primary schools in Botswana are substantially higher than those in South Africa. One area policy might consider is to diminish the importance of high matric pass rates and focus on improving maths and science. Policy should encourage the formation of industry, diaspora and international networks to strengthen delivery of maths and science education in South Africa. Policy could also look into a subvention scheme for Maths and Science teachers to attract talent into the schooling system. Innovation and intellectual property development as well as ethics should be introduced early in the education system to inculcate a value system of self-reliance, entrepreneurship, productivity and inventiveness, based on biocentric ethical principles. South African policy makers can also draw important insights from education expenditure patterns in Botswana that show prioritization of human capital development. Expenditure in education in

South Africa has been increasing since 1994. However, the devil is in the detail of how the country deploys funds into the education system. History has already shown that high budget allocation towards education alone is deemed not enough particularly in the circumstances of gross inequalities that exist in the country. The education quality trajectory could improve in South Africa if policy makers target entry level education investment and the education of individuals situated in rural areas. Remuneration policies should be tailored to attract skilled educators in these areas and to incentivize skilled educators to leave urban areas and hone in on rural communities.

With respect to the Health and Wellness pillar, the 'obesity indicator' brought down the HCI score in South Africa. This suggests a need for a policy intervention that creates awareness of the link between, lifestyle, health, happiness and productivity. South Africa is significantly behind Botswana with respect to healthcare quality and healthcare accessibility. The difference could be attributed to South Africa's population size, and the fact that there is a parallel private and public healthcare system with the public care system that is acutely under-resourced. In developing policies that seek to improve the Health and Wellness pillar of the index, policy makers would benefit from categorizing infrastructure into physical and social infrastructure and invest more on social infrastructure related to enhancement of the health pillars of the human capital index.

Pay related productivity is another area that sets Botswana apart from South Africa. South Africa should consider policies that build a culture that values competence and productivity. It is essential that South Africa creates attractive incentives that build indigenous knowledge scholarship as part of the process of building an inclusive economy. For example climate adaptation tools that tap into indigenous knowledge in the agricultural sector could boost food production, small-scale farming and economic development in rural areas.

References

1. Azevedo, M.J. and Nnadozie, E. (2003). *Africa Economic Development*, Emerald Group Publishing, pp. 207-229.
2. Baldacci E., Clements B., Gupta S., Cui Q. (2004). Social Spending, human capital and growth in developing countries: Implications for achieving the MDGs. IMF Working Paper, WP/04/217, Fiscal Affairs Department.
3. Becker, G.S. (1993). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, 3rd Ed. University of Chicago Press.
4. Botswana Education (2014a). Education Statistics 2006, available at: http://www.cso.gov.bw/templates/cso/file/File/education_2006report.pdf.
5. Botswana Education (2014b). Education statistics 2008. Available at: <http://www.cso.gov.bw/templates/cso/file/File/Educarion%20Statistics%20Report%202008%20Jul%2030%202012.pdf>.
6. Bailey, T., Cloete, N., and Pillay, P. (2008). Botswana and University of Botswana. Available at: <http://chet.org.za/files/uploads/reports/Case%20Study%20-%20Botswana%20and%20University%20of%20Botswana.pdf>.

Even though Botswana is considerably smaller than South Africa with its own socio-economic problems, it is known for having transformed itself from one of the poorest countries in the world to a middle-income country. The idea of economic growth without considering human capacity has been critically discussed. From the propositions of Kraak and Press (2007) to the World Economic Forum 2013 Report on Human Capital Index, there is sufficient evidence that there is a difference between "economic growth" (seen as rate of outputs growth in goods and services for a given country) and the wider concept of "development" – which encompasses human capital development and development in general beyond economic growth. Policy should therefore move away from focusing on GDP % as a measure of how much should be invested on human capital development, and rather focus on the per capita spending on education and health weighted to take into account redress factors.

An area that policy makers also need to focus on is an area of talent management, workforce productivity and unemployment. The HCI report has pointed out that South Africa has very poor scores for employment, ease of finding skilled employees and pay relating to productivity indicators. In addition to the poor HCI scores on employment, the International Organization for Migration (IOM) Report draws attention to the fact that Africa has already lost one third of its human capital and is continuing to lose its skilled personnel at an increasing rate. It is estimated that 20,000 doctors, university lecturers, engineers and other professionals are leaving the continent annually since 1990. Brain drain in Africa has reduced the already low quantity of skilled manpower available in African countries. Both South Africa and Botswana should consider policies that help retain and attract skills and expertise in the focus areas targeting economic development. To remedy the employment landscape, policies should look at incentives that help bridge a gap between small town and large city pay as well as the gap between urban and rural pay.

7. Blomström, M. and Kokko, A. (2002). Foreign direct investment and human capital: A research agenda. Working Paper No 195, OECD Development Center.
8. Byraktar, N. (2013). *Foreign direct investment and investment climate*. WEI international AC Conference Proceedings, Instabul, Turkey.
9. Central Statistical Office (CSO) Botswana (2013a). Statistics on GDP changes, available at: http://www.cso.gov.bw/templates/cso/file/File/GDP%20Q4%202013_Mar%202014f.pdf.
10. Central Statistical Office (CSO) Botswana (2013b). National Accounts July 2007, available at: http://www.cso.gov.bw/templates/cso/file/File/nationalaccounts_july07.pdf.
11. Central Statistical Office (CSO) Botswana (2013c). National accounts statistics report-2012, available at: [http://www.cso.gov.bw/templates/cso/file/File/National%20Accounts%20\(1\).pdf](http://www.cso.gov.bw/templates/cso/file/File/National%20Accounts%20(1).pdf).
12. Central Statistical Office (CSO) Botswana (2013d). The National Accounts. Available at: <http://www.cso.gov.bw/templates/cso/file/File/q4&annual2009.pdf>.
13. Clarke, George R.G. (2015). Performance of Manufacturing Firms in Africa. International Bank for Reconstruction and Development, The World Bank, 2011. Web. 9 Feb. 2015.
14. Factfish (2014a). South Africa: Education expenditure, public (% of government expenditure), available at: <http://www.factfish.com/statisticcountry/south%20africa/education%20expenditure%2C%20public%20of%20gov%20ernment%20expenditure>.
15. Factfish (2014b). Botswana: Education expenditure, public (% of government expenditure), available at: <http://www.factfish.com/statistic-country/botswana/education+expenditure,+public+of+government+expenditure>.
16. Fedderke, Johannes W. (2006). *Infrastructure and Growth in South Africa: Direct and Indirect Productivity Impacts of 19 Infrastructure Measures*. Cape Town: University of Cape Town, South Africa, 2006. Print.
17. Kraak, A. and Press, K. (2007). *Human Resources Development Review – Education, Employment and Skills in South Africa*, HSRC Press, Pretoria.
18. Kwon, Dae-Bong (2009). Human Capital and its measurement. 3rd World forum on Statistics, Knowledge and Policy – Charting Progress, Building Visions, Improving Live. Busan, Korea, October 27-30.
19. Lisenda, L. (2004). Financing Primary Education for all: Public expenditure and education outcomes in Botswana. Available at: <http://dspace.cigilibrary.org/jspui/bitstream/123456789/32833/1/Financing%20Primary%20Education%20for%20All.pdf?1>.
20. Lucas, R.E. (1988). On the Mechanics of Economic Development, *Journal of Monetary Economics*.
21. Mottaleb, K.A. and K. Kalirajan (2010). “Determinants of foreign direct investment in developing countries: A comparative analysis”, *The Journal of Applied Economic Research*, 4 (4), pp. 369-404.
22. Noorbaksh, Paloni, and Youssef (2001). “Human capital and FDI inflows to ...”, *6 International Labour Review*, Vol. 140 (2001), No. 2, pp. 165-192.
23. Ogunade, A.O. (2011). *Human Capital Investment in the Developing World: An Analysis of Praxis*. Schmidt Labour Research Center Seminar Seires.
24. Pigato, M.A. (2001). Foreign Direct Investment Environment in Africa. Africa Region Working Paper Series No. 15, Antone Waldburger, Ed. World Bank. Available at: www.worldbank.org/afr/wps/index.htm.
25. Romer, P. (1990). *Human Capital and Growth: Theory and Evidence*, Carnegie-Rochester Conference Series on Public Policy.
26. SA Department of Education (2009). Trends in Education Macro Indicators Report. Department of Education, South Africa.
27. Schultz, T.W. (1961). Investment in Human Capital, *American Economic Review*.
28. Shupp, F.R. (2002). Growth and income inequality in South Africa, *Journal of Economic Dynamics & Control*, 26, pp. 1699-1720.
29. Statistics South Africa (2013). Quarterly Labour Force Survey. Available at: www.statssagov.za/publications. Retrieved: 10 May 2013.
30. SA Department of Basic Education (2011). South African Country Report: Progress on the Implementation of the Regional Education and Training Plan (integrating the Second Decade of Education in Africa and Protocol on Education and Training) SADC and COMEDAF V. Available at: <http://www.education.gov.za/LinkClick.aspx?fileticket=B3Q11NJKS3g%3D&tabid=358&mid=1261>.
31. Statistics South Africa (2012). Census 2011. Available at: www.statssagov.za/publications. Retrieved: 15 April 2013.
32. Statistics South Africa (2003). Income and Expenditure Survey. Pretoria: Statistics South Africa. Available at: www.statssagov.za/publications. Retrieved: 20 April 201.
33. The Word Bank (2014c). School enrolment, Secondary (%), available at: <http://data.worldbank.org/indicator/SE.SEC.ENRR/countries?page=2>.
34. The Word Bank (2014c). Public expenditure on education as % of total government expenditure. Available at: <http://data.worldbank.org/indicator/SE.XPD.TOTL.GB.ZS/countries> Tradingeconomics.com, GINI Index in South Africa. N.p., 2015. Web. 10 Feb. 2015.
35. Transparency International (2013). Corruption Perception Index 2013, available at: <http://cpi.transparency.org/cpi2013/results/>, retrieved: 11 April 2014.

36. UN (2014). Public expenditure on education as % total government expenditure – Botswana. Available at: http://www.quandl.com/UN/UIS_PUBLICEXPENDITUREONEDUCATIONASTOTALGOVERNMENTEXPENDITURE_BWA-Public-expenditure-on-education-as-total-government-expenditure-Botswana.
37. UNDP (2010). South Africa Report: Millennium Development Goals Country Report.
38. UNDP (2012). African Human Development Report, available at: http://en.wikipedia.org/wiki/File:Clark%27s_Sector_model.png.
39. World Bank (2010). World Bank Annual Report – A year in review. Washington, DC: World Bank.
40. World Bank (2013). Gini Index, available at: <http://data.worldbank.org/indicator/sl.POV.GINI>. Retrieved: 10 May 2013.
41. World Bank (2013e). GDP Growth Rate. Available at: <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?page=4>.
42. World Bank (2013f). GDP Growth Rate. Available at: <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?page=3>.
43. World Bank (2013g). GDP Growth Rate. Available at: <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?page=2>.
44. World Bank (2013h). GDP Growth Rate. Available at: <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?page=1>.
45. World Bank (2014a). Gross capital formation (% of GDP). Available at: <http://data.worldbank.org/indicator/NE.GDI.TOTL.ZS/countries?page=2>.
46. World Bank (2014b). Per capita GDP (US\$). Available at: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries>.
47. World Economic Forum (2013) Human Capital Report. Available at: http://www3.weforum.org/docs/WEF_HumanCapitalReport_2013.pdf. Retrieved: 13 April 2014.
48. World Bank (2013). Growth and Poverty Trends in Sub-Saharan Africa. Office of the Chief Economist for the Africa region, 2013. Web. 10 Feb. 2015.