

The Political Economy of Education and Knowledge under Economic Stress: Reflections on Colonial and Post-colonial Zimbabwe

Roselin Ncube¹, Gift Mhlanga², Abraham Rajab Matamanda³, Primrose Ndaayashata² and Innocent Chirisa^{2,3*}

¹*Women's University in Africa, Marondera, Zimbabwe*

²*University of Zimbabwe, Harare, Zimbabwe*

³*University of the Free State, Bloemfontein, South Africa*

E-mail: <roselin.ncube@gmail.com>, <giftmmhlanga@gmail.com>, <matamandaa@gmail.com>, <primrosemoyana2@gmail.com>, <innocent.chirisa@gmail.com>*

KEYWORDS Community Workers. Development. Governance. Innovation. Knowledge Creation. Sustainability

ABSTRACT This paper presents a comparative analysis of the impact of economic problems on education under the Rhodesian and Zimbabwean post-colonial governments. The analysis is based on human capital investment models, which illustrate how economic growth manifests under different socio-economic conditions. Using a qualitative approach based on secondary data, the paper finds that Zimbabwe experienced economic problems during the UDI era and during the reign of Mugabe as its president. In particular, it emerges that the impact of economic sanctions during the Smith regime were relatively positive while the economy proved to be tumultuous during the Mugabe era. As such, the economic stress experienced by these regimes had contrasting effects on educational policies. The central argument of the paper is that education and knowledge are affected by the political economy of a country and they are instrumental in improving the economy, making it a bi-causal relationship.

INTRODUCTION

Political economy is the original name for economics, which infers the management of national affairs (Usher 2003). In this case, the main thrust of the discourse is to examine how educational policies during the colonial and post-colonial periods were determined by the tumultuous economy of the country and the effects thereof. The Rhodesian Government under Ian Douglas Smith registered better socio-economic results than the Robert Mugabe Government under economic stress (Brownell 2011; Van Wyk 2018). It is theorised that the reason behind the Rhodesian Government thriving well under stringent economic conditions was due to the strict and full-of-direction endogenous arrangements, which involved serious partnerships in knowledge creation and management involving universities, businesses, community workers and the public sector (Lee 2020). Specifically, the technical, vocational education and training (TVET) system under the Rhodesian economic climate was designed such that psychomotor

skills were developed and the exchange of ideas into products was well crafted (cf. Makoche-anwa et al. 2016). On the other hand, the major short-fall of the independent Zimbabwe government educational policy was an emphasis on higher and tertiary education with many theoretical underpinnings and little channelling and discipline to produce tangible and saleable products on the labour market for economic growth (cf. Frey 1984; Fukuyama 1995; Duck 1997; Fischer 1998). In this regard, a comparative analysis of the post-colonial government and the Smith regime educational policies is called for.

Conceptual Framework

The basis of the paper is the human capital investment model, which emphasises that human capital is a significant variable for economic growth. The ontological perspective of knowledge creation is based on four particular processes, that is, socialisation, externalisation, combination and internalisation, which is known as the SECI model in psychological cycles (Non-

aka and Takeuchi 1995). Knowledge is created individually and through interaction, whereby explicit and tacit knowledge would be generated. In other words, creating knowledge requires the existence of a person or group of people who originate new ideas, new concepts and/or an innovative product. By and large, knowledge is achieved through research, innovation projects, experiments and observations. On the other hand, Firestone et al. (2003) claim that knowledge production begins with the request of knowledge, which is then followed by individual or group learning, then information acquisition and application for evaluation of knowledge and ultimately, the building of organisational knowledge (Ceptureanu and Ceptureanu 2010). Such declarations are mostly meant to be realised in Zimbabwe's higher tertiary institutions and the question of whether this is reality remains to be investigated in this paper.

Literature Review

Knowledge also leads to innovation and plays an important role in economic growth through technology transfer, improved capabilities and increased productivity and efficiency (Chikomba 1988; Bosworth and Collins 2003; Ghanbari and Ahmadi 2017). As such, the realisation that knowledge opens up avenues for socio-economic progress is aligned to John Dewey's philosophy of education known as progressivism (Dewey 1966). On the other hand, Keho (2017) points out that trade-openness increases the incentive for expansionary research and design due to enhanced external competition. This inversely implies that, where there are trade restrictions, such as those due to economic sanctions, innovation is restricted (Gray 1986; Haas 1997; Gerring and Thacker 2004). However, the Stolper-Samuelson theorem asserts that when economic sanctions are imposed on imports, the direct result is that it favours the factors used intensively in the import-competing sector and this may promote research and development and hence innovation (Oketch et al. 2014).

The human capital theory emphasises on education increasing the productivity and efficiency of the labour force by increasing the lev-

el of cognitive stock of economically productive human capability (Olaniyan and Okemakinde 2008). Therefore, an arbitrary sharing of knowledge improves the innate ability of labour to increase productivity (Becker 1992). The theory hinges on the premise that knowledge is a factor which promotes economic development through technological advancement (Munongerwa 2016). As such, the economic prosperity and functioning of a nation depend on its physical and human capital stock (Schultz 1971). By and large, Friedman (2007) elucidates the importance of education in the new global knowledge economy. Nonetheless, Bowles argues that the traditional human capital theory excludes the relevance of societal class and class conflict, which imposes restrictions on an individual's ability to function efficiently in the labour market (Bowles and Gintis 1978). This echoes the dictates of colonial education in Zimbabwe whereby inequality between white and African education systems was evident.

The knowledge sector is concerned with the impartation and sharing of knowledge from one party to the other. Higher education could lift Africa out of its problems of development because the knowledge sector is a major driver for innovation and technological advancement (Keller 2006). As such, investment in higher education ensures technological diffusion, reducing the knowledge gap among parties (Bloom et al. 2006). Moreover, there is sufficient evidence which suggests higher returns for higher levels of education in Africa and this is a driver for socio-economic development in developing countries (Urch 1971; Teal 2011).

A critical issue is on the level of education necessary for development and this necessitated a literature review research by Oketch et al. (2014). The research results indicated that there is no definite answer to such a question since there is a cumulative effect on the levels of education, starting from primary education, up to tertiary education. In this regard, investing in one particular education level at the expense of the other would harm the overall effect of education on economic growth (Oketch et al. 2014). Moreover, Teal (2011) points out that there is a bi-causal relationship between education and economic growth, indicating that whereas educational investment may lead to economic

growth, the latter vector may also lead to educational investment if there is political will.

There are other factors apart from education which promote economic growth. A research which was carried out by Nyarota et al. (2015) was set to determine the factors that contribute to economic growth in Zimbabwe. The study applied an econometric approach to assessing the sources of economic growth during the period 1980 to 2014. Using advanced regression analysis, the results suggested a significant decline in productivity and capital stock during the period 2000 to 2008. It was observed that between 1990 and 2008, the contribution of capital to economic growth was on the average negative. On the other hand, labour force participation as a significant variable for the analysis proved to be static during the same period, implying that it was not a binding constraint to Zimbabwe's economic growth. In this regard, the main contributing variables for the decline in economic growth for Zimbabwe were mainly attributed to the decline in the capital stock and productivity (Nyarota et al. 2015).

On the other hand, taking into consideration economic sanctions as a variable which affects economic growth, Neuenkirch and Neumeier (2014) carried out an empirical study using data from sixty-eight countries for the period 1976-2012 to assess their impact. The study results revealed that on average, the effect of sanctions by the United Nations decreases the real per capita GDP growth rate of a target country by 2.3 to 3.5 percent points. Additionally, comprehensive UN sanctions lead to a reduction in GDP growth by at least 5.0 percent. On the other hand, the impact of US sanctions has a weaker impact on the economy of a target country, taking into consideration that they only decrease GDP growth over seven years by 0.5 to 0.9 percent points on average (cf. Cooper 1989; Delevic 1998; Hufbauer and Oegg 2003; Hufbauer et al. 2007).

Another study by Evenett (2002) estimated the impact of sanctions against South Africa during the apartheid period for the period 1978 and 1999. The results of the study suggest that the United States Anti Apartheid Act, the Act which legalized the economic sanctions on the regime, had the strongest influence on South African exports (Evenett 2002). This concurs with

Hufbauer et al. (2007) who claim that economic sanctions distort trade between the target state and that country which would have issued the sanctions. As such, an augmented gravity model with dummy variables was used to investigate the impact of sanctions on U.S. trade flows (US Department of the Treasury 2013). Different classifications of the sanction variable were tested to determine whether the results were sensitive to such regression manipulations (Pape 1997). Unsurprisingly, the results showed that the sanctions had a significant impact on U.S. exports, imports and total trade.

METHODOLOGY

The study used a qualitative approach to collect and analyse the data whereby the documentary research method was employed (cf. Hakim 1982; Bryman 2004). Data were collated from various secondary sources, including journal papers, governmental archives and publications, blogs, conference publications, reports and newspapers. The idea for using these was to try as much as possible to capture the realities of the events and debates of the times.

RESULTS

In the case of Rhodesia/Zimbabwe, the trigger for the economic sanctions was humanitarian reasons during the Unilateral Declaration of Independence (UDI) era and during the post-independence era when Mugabe was in power. The Smith government was put under sanctions because it had pronounced its independence from Britain in a bid to circumvent and delay majority rule in Zimbabwe. On the other hand, the post-independence sanctions against the country were focussing on the need to redress human rights abuse by elite individuals in the government.

Rhodesian Economy, Innovations and Survival (1965-1979)

During the UDI period, economic problems were ushered in through the first wave of economic sanctions, which included a ban on the purchase of Rhodesian sugar and tobacco. These two commodities constituted seventy-

one percent of the value of exports to Britain. The sanctions sought to cripple the trade flow between Britain and Rhodesia (Brownell 2011). By December 1965, Britain had expanded its embargo list, adding Rhodesian copper, chrome, asbestos, iron and steel, maize and beef. This constituted ninety-five percent of the value of Rhodesian exports to Great Britain. Consequently, the sanctions harmed both exports and imports (approximately sixty percent and fifteen percent, respectively) of the country (Kurebwa 2000). The selective mandatory sanctions implied that if any member country failed to adhere to the pronouncement, it would be a violation of Paper 25 of the UN Charter (Wang 1991).

In the short-run, the economic sanctions on Rhodesia resulted in considerable damage to the Rhodesian economy as evidenced by a stunted growth as an aftermath of the imposition of the sanctions (Kurebwa 2000). The country depended on the export of minerals, such as chrome, with countries, such as the United States, the sanctions curtailed the country's direct source of income (Brownell 2011). The Rhodesian economy began to recover after a few years of hardship due to policies, which were employed by the government to sustain the economy through human capital initiatives (Wood 2008). By and large, the government was able to shield the labour-force from the harsh realities of the economic sanctions through labour-force adjustment regulations, such as the Emergency Powers Regulations of 1969 (Strack 1978; Kurebwa 2000).

During the colonial era, there was an intrinsic intertwining of the political and the socio-economic situations in Rhodesia (Kurebwa 2000; Zembere 2018). As such, it is revealed that the colonial education system and the colonial administration system reciprocally reinforced each other (Tandon 1984; Mart 2011). There was evidence of segregation in the Rhodesian education system and such discrimination reinforced colonial rule through the promotion of societal classes (Butcher et al. 2008). Racial segregation in the educational system, promoted societal inequality. Makotose (2001) observes that Europeans enjoyed skill monopoly, technical training, expertise and undisputed economic dominance, while most Africans remained in their deprived position wallowing in poverty.

Christian missionaries conducted the first formal education in Zimbabwe. In this regard, mission schools were the source of formal education for indigenous people (Butcher et al. 2008). As such, the missionaries were excising their community support through knowledge impartation despite the challenges expounded by the white minority regime. In the same vein, the missionaries were the pioneers offering pre-service training for teachers and vocational training. Makotose (2001: 63) notes, "...Mission stations, such as Mt Selinda, Tegwani, Waddilove, Morgenster and Gokomere [provided] basic technical-vocational education to Africans". Noteworthy is Silveira House, which was established in 1964 to promote education and production through technical-vocational training regardless of creed (Makotose 2001).

However, in 1962, the Rhodesian government appointed the Southern Rhodesia Education Commission led by Professor A.V. Judges and thus the commission became known as the Judges Commission. The findings and recommendations of the Commission were instrumental in upgrading and attuning the colonial educational system to the industrial requirements and preferences (Southern Rhodesia Education Commission 1963). For example, Paragraph 417 of the Judges Commission's Report indicates industry's preference for Cambridge School Certificate holders for apprenticeship instead of the stipulated pass in English, arithmetic or mathematics and one other subject at Junior Certificate (JC) level (Southern Rhodesia 1963:83). Moreover, concerning enrolment in technical colleges, the Commission reveals that the two main technical colleges in Bulawayo and Salisbury could have higher enrolment figures if they did not function in virtual isolation whereby they had little connection with, or control over, courses in the African schools (Southern Rhodesia Education Commission 1963; Makotose 2001).

Recommendations from the Judges Commission equipped the Smith regime to be self-sustainable in human capital during the UDI era rather than depending on expatriate experience, which had been the norm prior to the UDI (Makotose 2001). These sentiments were hinted in the subsequent Cameroon Commission Report, which found out that although immigration had been a major source of labour force in the past, it

could not be relied upon in the future (Rhodesia 1974: 7). Resultantly, such commissions led to the establishment of the 1966 New Education Plan, which grouped education into two distinct systems, that is, the F1 and F2 education systems (Rhodesia 1966: 3). The F1 system catered for the more affluent and academically better students, while the F2 system was reserved for less privileged students. The Plan succeeded in revolutionising the Rhodesian education system into producing more industrial oriented labour-force (Dorsey 1989).

University education in Southern Rhodesia was introduced in 1957 through the establishment of the University College of Rhodesia and Nyasaland. It is argued that racial discrimination as a bottle-neck against the attainment of higher education by Africans was less evident at this institution (Dierdorp 2015). However, inequitable distribution of education as a public good through the F1 and F2 educational systems would already have screened the African students reaching this tertiary institution and this was tantamount to social segregation (Zembere 2018). Nonetheless, at the University's inception, there were only three faculties, namely, the Faculty of Sciences, the Faculty of Education and the Faculty of Arts but the School of Medicine and the Faculty of Engineering came into existence in 1963 and 1974, respectively (Dierdorp 2015). However, as the demand for professionals arose due to the sanctions imposed, more industrially-oriented programmes were introduced and by 1980 the Faculties of Law, Commerce and Agriculture were established (Teferra and Altbach 2004). Thus, through industrialisation endeavours and technological advancement, the Smith regime was able to sustain the economy during the UDI era. However, though the tertiary education churned out a professional African labour-force, the industrial sector was reluctant to employ them on merit and such discrimination was evident through wage differences between races (Omolewa 2006; Dierdorp 2015).

The Zimbabwean Situation Since 2002

Zimbabwe was slapped by the European Union (EU) in 2002 with economic sanctions, citing human rights abuse (Kanyenze et al. 2011). The EU Council Decision of 18 February 2002

conferred that financial support for all projects except for those in direct support to the Zimbabwean population would be suspended. The only financing which would be availed to the Zimbabwean government was for social sectors, such as health, education, micro-projects and agriculture. Consequently, over EUR 128 million directed at providing support for government capacity building and policy reforms were halted (European Parliament 2011). Following the adoption by the Zimbabwean government of the Information and Protection of Privacy Act (AIP-PA), an Act which limited media freedom and broadcasting licensing, the US President issued the Executive Order Number 13288 under ZIDERA. This further imposed restrictions on targeted individuals (US Department of the Treasury 2013).

Zimbabwe was not granted eligibility for the African Growth and Opportunity Act (AGOA), a piece of legislation introduced in 2000 to facilitate access to the US markets for Sub-Saharan Africa (US Department of the Treasury 2013). Following these events, which may be dubbed cascading silent sanctions, in 2002, the Commonwealth decided to indefinitely suspend Zimbabwe's membership (Cortright and Lopez 2002). The Zimbabwean government reacted to this by pulling out of the organisation. The final blow to this adverse chain on Zimbabwean foreign relations was the executive decision by the IMF to suspend Zimbabwe's voting rights in June 2003 as a result of the government's incapacity to repay the arrears contracted with the international finance institution. This curtailed the possibility for Zimbabwe to borrow further resources and technical assistance from the institution (IMF 2003; IMF 2012). Additionally, the World Bank also suspended loans and programs to support the balance of payment of Zimbabwe since 2001 due to the government's failure to meet arrears (Clemens and Moss 2005; Gono 2006; Fowale 2010).

The immediate result of these sanctions was reduced public educational funding from the government owing to the inflationary environment and the shrinking economy (Hanke 2013). Such a set-back in the education sector had a direct and negative impact on economic growth since education propels economic growth (Chombo 2000; Government of Zimbabwe 2008).

Between 1985 and 2003, the Zimbabwean government heavily subsidised tertiary education and twenty-four percent of the higher education students were enrolled in the science and technology field (Nherera 1999; World Bank 2007). However, the early 2000s pronounced the economic downturn and the consequent educational woes, which now characterise the education sector of the country (Hanke 2013). The cold international relations between Zimbabwe and the international world collaborative research partnerships and donor funding have wilted (Chinamasa 2012). Without donor support, research in Zimbabwe in higher education institutions is severely constrained, both in respect of access to the latest scientific equipment and in keeping abreast of international scholarship trends and publications (Kotecha 2010).

The policy governing higher education in Zimbabwe is the National Council for Higher Education Act of 1990, which was then amended in 1994 and 2006 (Kariwo 2007). The Act delineates the maintenance of appropriate standards with regards to teaching, courses of instruction, examinations and academic qualifications in all institutions of higher learning. This was in line with the Education 3.0 design, which focussed on Research, Teaching and Community Service (Workshops, Contact leave, Sabbatical and Consultancy) only (Government of Zimbabwe 2019). Such an educational design emphasises on theoretical professionalism at the expense of vocational education and technical training and industrialisation.

The economic growth could not be achieved through such an educational design, which is believed to have been beneficial in reinforcing colonial rule through suppressing African academic initiatives in industrialisation and innovation (Parliament of Zimbabwe 2019). Inversely, in this particular educational system, the mandate of tertiary institutions to be the hubs of socio-economic development is more theoretical than practical since the beneficiaries of such education would not actively contribute to economic growth (Frey 1984; Fukuyama 1995; Duck 1997; Fischer 1998). By and large, it is argued that the quality of education offered in higher tertiary institutions has deteriorated owing to high enrolment without complemented increase in the number of lecturers and other support

staff, and the needed infrastructure (Kariwo 2007; Zembere 2018).

The Zimbabwean government is recognisant of the importance of technological advancement and economic sustainability. For example, a Scientific and Industrial Research and Development Centre (SIRDC) was established in 1993 by an Act of Parliament. The mandate of SIRDC is to provide technological solutions for sustainable development through such institutes as biotechnology, electronics and energy technology. However, despite the clear road-map in economic development through innovation initiatives, the country still lags behind in effecting such institutions to function smoothly and to full capacity. Thus, although the foundations for sustainable development have been laid through such institutions which promote innovation through technological advancement, the noble cause is truncated by scarcity of the necessary resources (cf. Rodney 1972; Moyo 2009).

The higher educational policy in Zimbabwe is now inclined towards industrialisation and innovation. In this regard, the Government of Zimbabwe has adopted the Education 5.0 design, which is an improvement upon the traditional Education 3.0 system and thus includes innovation and industrialisation as the focus of tertiary education (Parliament of Zimbabwe 2019). Due to the economic problems emanating from relative international isolation and mal-governance, the Zimbabwe government realises that “for many years in Africa and in Zimbabwe, there has been a disjunction between University Outputs and Industry” (Government of Zimbabwe 2019: 5; Cross 2016). In this regard, tertiary education could not initiate socio-economic development. Therefore, through the adoption of the Education 5.0 design, which is hinged upon “Science, Technology, Engineering and Mathematics (STEM)”, the government envisages economic growth through tertiary education.

The Government of Zimbabwe has established innovation hubs and industrial parks in some of the public universities in Zimbabwe. This shift in higher education systems, university institutions in the country will engage such programmes as Information and Communication Technology and Development Programme and the Energy and Minerals Research Programme (Chombo 2000). As such, the latter programme

focuses on providing the country with alternative forms of sustainable energy through carrying out research development on alternative sources of liquid fuels (Parliament of Zimbabwe 2019).

DISCUSSION

The sanctions impacted differently on the two regimes (Maravanyika 1990). Concerning the Smith Regime, the sanctions may be considered to be a failure in that instead of crumbling the economy to coerce the regime to politically surrender, the opposite was witnessed. However, concerning equitable distribution of wealth, the Smith regime, through unequal distribution of educational facilities and services, promoted social segregation. Moreover, it is noted that although the UDI encouraged brain-drain, the white industrial sector could not effectively employ Africans despite their qualifications. Moreover, the incentive for learning was further squashed through inequitable remuneration packages between the European and African workers. As such, there was no clear and direct positive relationship between attainment of education and remunerations and thus poverty reduction, during the Smith Regime.

On the other hand, concerning the Mugabe regime, the sanctions worsened the human rights abuse of the opposition members and the ordinary Zimbabwean despite the further deterioration of the economy (Cross 2016). As such, the environment surrounding the stunted economic growth cannot be explained by the sanctions alone but rather the fact that it is a manifestation of the dependency syndrome whereby the government relies on financial aid for socio-economic growth (Bosworth and Collins 2003). Additionally, mal-administration at national levels, as evidenced by the adoption of the Education 3.0 design, indicates that the nation had been tied down in terms of socio-economic progress since the education system concentrated mostly on educative theories rather than practicalities.

As such, the Smith regime emphasised vocational and technical training and professional education. The white minority had the privilege of having technical and professional education. Nonetheless, the majority of Africans were granted partial education, which emphasised on blue-

collar jobs to reduce competition in white collar jobs with the white minority. Thus, although Africans wanted a liberal curriculum, which would enable them to get white collar jobs in towns, the government was opposed to the notion. However, there were also private colleges, which were mostly supported by church organisations, which had strong links with the industrial sector. Therefore, the labour force during the Smith regime was always regimented and compartmentalised, implying that there was little shortage of labour at every level of the general labour-force hierarchy. However, during the reign of Mugabe, the problem which aggravated in Zimbabwe was not lack of labour but rather under-employment, which was intertwined with a high unemployment rate. Thus, an over-qualified labour-force was working below its potential as the economy was shrinking, while at the same time willing and able people were searching for jobs without respite, implying that the supply of labour had flooded the labour market, resulting in firms under-paying the labour-force (Marongwe 2004; Minn 2009; Mpofu 2016).

CONCLUSION

It is evident that there is a gap between the tertiary knowledge base and the community. Professionals from universities are poured into a flooded job market because the market is not expanding due to a shrinking industrial sector. Thus, these stakeholders, together with the government as the custodian of the welfare of the citizens, have to channel up a way forward to expand the economy. As such, the university lecturers have to be given research grants to fathom the link between the industrial sector and the labour supply. Innovation and technological advancement beget an expansion of the economy by exploring new avenues of resource manipulations.

RECOMMENDATIONS

There must be the cooperation between the government, civil society and the private sector to revamp and enhance the economy of Zimbabwe. There is need for a 'partnership' among these three stakeholders, defining where the private sector and civil society should take the

lead. The government may offer incentives for the industrial sector to engage in research with local higher tertiary institutions rather than seeking out foreign universities for such services. A collaboration between higher education institutions and the people in the diaspora is advocated for. In this vein, collaborative research partnerships in higher education institutions must be facilitated through effective knowledge networks between the universities and the professional academics in the diaspora.

REFERENCES

- Becker GS 1992. The division of labour, coordination costs and knowledge. *The Quarterly Journal of Economics*, 107(4): 1137-1160.
- Bosworth B, Collins S 2003. The empirics of growth: An update. *Brookings Papers on Economic Activity*, 2: 113-206.
- Bowles S, Gintis H 1978. The invisible fist: Have capitalism and democracy reached a parting of the ways? *The American Economic Review*, 68(2): 358-363.
- Brownell J 2011. *The Collapse of Rhodesia: Population Demographics and the Politics of Race* London, UK: IB Tauris & Co Ltd..
- Brownell J 2011. *The Collapse of Rhodesia*. London, UK: IB Tauris & Co Ltd.
- Bryman A 2004. *Social Research Methods*. Oxford, UK: Oxford University Press.
- Butcher N, Wilson-Strydom M, Hoosen S, MacDonald C, Moore A, Barnes L 2008. A profile of higher education in the region. In: P Kotecha (Ed.): *Towards a Common Future*. Johannesburg: SARUA, pp. 112-119.
- Ceptureanu S, Ceptureanu E 2010. Knowledge creation / conversion process. *Review of International Comparative Management*, 11(1): 150-157
- Chikomba CEM 1988. The role of the University of Zimbabwe in Adult, Primary and Secondary Education: *Michigan State University Conference Proceedings*, 4-6 June 1988, Michigan, USA, pp. 12-26.
- Chinamasa E 2012. Factors influencing lecturer research output in new universities' in Zimbabwe. *Zimbabwe Journal of Educational Research*, 24(2): 162-175.
- Chombo I 2000. Higher education and technology in Zimbabwe: Meaningful development in the New Millennium. *Zimbabwe Journal of Educational Research*, 12(3): 6-26.
- Clemens M, Moss T 2005. Costs and Causes of Zimbabwe's Crisis. From <<https://www.cgdev.org/publication/costs-and-causes-zimbabwes-crisis#:~:text=Zimbabwe%20has%20experienced%20a%20precipitous,same%20level%20as%20in%201953.&text=The%20government%20blames%20its%20economic%20problems%20on%20external%20forces%20and%20drought>> (Retrieved on 25 May 2019).
- Cooper HJ 1989. On income distribution and economic sanctions. *South African Journal of Economics*, 57(1): 14-20.
- Cortright D, Lopez GA 2002. *Smart Sanctions: Targeting Economic Statecraft*. Maryland, USA: Rowman and Littlefield Publishers.
- Cross E 2016. The Economic and Political Crisis in Zimbabwe. *The Zimbabwean*, 17 July 2016, From <<http://www.thezimbabwean.co/2016/07/the-economic-and-political-crisis-in-zimbabwe/>> (Retrieved on 17 May 2019).
- Delevic M 1998. Economic sanctions as a foreign policy tool: The case of Yugoslavia. *The International Journal of Peace Studies*, 3(1): 1-94.
- Dewey J 1966. *Democracy and Education*. New York, USA: Free Press.
- Dierdorp L 2015. Racially Segregated Education in South Africa and Southern Rhodesia: Was Majority Rule Achieved Earlier if Repression in Education Was Less Severe? From <<https://dspace.library.uu.nl/handle/1874/315801>> (Retrieved on 5 May 2019).
- Duck S 1997. *The Handbook of Personal Relationships: Theory, Research and Interventions*. New York, USA: Wiley.
- European Parliament 2011. Impact of Sanctions and Isolation Measures with North Korea, Burma/Myanmar, Iran and Zimbabwe. From <www.refworld.org/pdfid/4f30f0732.pdf> (Retrieved on 2 June 2019).
- Evenett SJ, Keller W 2002. On theories explaining the success of the gravity equation. *Journal of Political Economy*, 110(2): 281-316.
- Firestone JM, McElroy MW 2003. *Key Issues in the New Knowledge Management*. Oxford, United Kingdom: Butterworth-Heinemann.
- Fischer F 1998. Beyond empiricism: Policy inquiry in postpositivist perspective. *Policy Studies Journal*, 26(1): 129-146.
- Fowale T 2010. Zimbabwe and Western Sanctions: Motives and Implications. *The American Chronicle*, 9 June, pp. 7-11.
- Frey B 1984. *International Political Economics*. Oxford, United Kingdom: Basil Blackwell.
- Friedman TL 2007. *The World is Flat*. 3rd Edition. New York, USA: Picador.
- Fukuyama F 1995. *The Social Virtues and the Creation of Prosperity*. New York, USA: Free Press.
- Gerring J, Thacker MC 2004. *Political Institutions and Corruption: The Role of Unitarism and Parliamentarism*. Cambridge, UK: Cambridge University Press.
- Ghanbari A, Ahmadi M 2017. The effect of innovation on international trade: Selected medium-high-technology industries, evidence on Iran. *Iran Econ Rev*, 21(1): 21-44.
- Gono G 2006. An Analysis of Socio Economic Impact of Sanctions on Zimbabwe, *Supplement 7*, Harare, Zimbabwe, Reserve Bank of Zimbabwe.
- Government of Zimbabwe 2008. *The 2009 National Budget Presentation*. Harare, Zimbabwe: Government Press.
- Government of Zimbabwe 2019. *Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development (MHTEISTD) and Regional Universities Forum for Capacity Building in Agriculture (Ruforum)*. Harare, Zimbabwe: Printflow.
- Haas RN 1997. Sanctioning madness. *Foreign Affairs*, 76(6): 74-85.

- Hakim C 1982. *Secondary Analysis in Social Research, A Guide to Data Sources and Methods with Examples*. Boston, USA: Allen and Unwin.
- Hanke SH 2013. R.I.P. Zimbabwe Dollar. From <www.cato.org> (Retrieved on 14 July 2020).
- Hufbauer GC, Oegg B 2003. The Impact of Economic Sanctions on US Trade: Andrew Rose's Gravity Model. From <https://piie.com/publications/pb/pb03-4.pdf> (Retrieved on 5 June 2019).
- Hufbauer GC, Elliott KA, Cyrus T, Winston E 1997 US Economic Sanctions: their impact on Trade, Jobs and Wages. From <https://www.piie.com/publications/working-papers/us-economic-sanctions-their-impact-trade-jobs-and-wages#:~:text=US%20Economic%20sanctions%3A%20Their%20Impact%20on%20Trade%2C%20Jobs%2C%20and%20Wages,-Gary%20Clyde%20Hufbauer&text=Economic%20sanctions%20have%20resurfaced%20at%20the%20center%20of%20public%20policy%20debate.&text=Previous%20research%20at%20the%20Institute,in%20the%201970s%20and%201980s.> (Retrieved on 5 June 2019).
- Hufbauer GC, Schott J, Elliot KA, Oegg B 2007. *Economic Sanctions Reconsidered*. Washington, DC, USA: Peterson Institute for International Economics.
- IMF 2003. Press Release: IMF Suspends Zimbabwe's Voting and Related Rights From <https://www.imf.org/en/News/Papers/2015/09/14/01/49/pr0380> (Retrieved on 5 June 2019).
- IMF 2012. Executive Board Uphold Sanctions against Zimbabwe, Press Release No. 06/4. From <http://www.imf.org/external/np/sec/pr/2006/pr0645.htm.> (Retrieved on 23 July 2012).
- Kanyenze G, Kondo T (Eds.) 2011. *Beyond the Enclave. Towards a Pro-Poor and Inclusive Development Strategy for Zimbabwe*. Harare, Zimbabwe: Weaver Press.
- Kariwo MT 2007. Widening access in higher education in Zimbabwe. *Journal of Educational Research*, 20(3): 23–50.
- Keller KR I2006. Investment in primary, secondary and higher education and the effects on economic growth. *Contemporary Economic Policy*, 24(1): 18–34.
- Keho Y 2017. The impact of trade openness on economic growth: The case of Cote d'Ivoire. *Cogent Economics & Finance*, 5(1): 1332820.
- Kotecha P 2010. Rebuilding Higher Education in Zimbabwe: Implications for Regional Collaboration. From <https://www.sarua.org/files/publications/SARUA%20leadership%20Dialogue%20Series/Leadership%20Dialogue%20Series_Vol%202%20No%201.pdf.> (Retrieved on 14 May 2019).
- Kurebwa J 2000. *The Politics of Multilateral Economic Sanctions on Rhodesia (Zimbabwe) during the Unilateral Declaration of Independence Period, 1965 to 1979*. PhD Thesis, Unpublished. Harare, Zimbabwe: University of Zimbabwe.
- Lee A 2020. Conservatives divided: Defending Rhodesia against Malcolm Fraser 1976–1978. *Australian Journal of Politics & History*, 66(3): 503–521.
- Makotose AB 2001. *The Role of Technical Education in Community Upliftment in Zimbabwe: A Historical Perspective and Evaluation*. Pretoria, South Africa. Master of Education. Dierdorp: University of South Africa.
- Makochekanwa A, Mahuyu J, Pindiriri C 2016. Employers' perceptions of technical vocational education and training activities in Zimbabwe. *The African Review*, 45(2): 109–133.
- Maravanyika OE 1990. Implementing Educational Policies in Zimbabwe. *World Bank Discussion Paper* No. 91. Africa Technical Department Series. Washington, DC, USA, The World Bank.
- Marongwe N 2004. Socio-economic conflicts of the Fast Track Resettlement Programme. In: M Masiiwa (Ed.): *Post-independence Land Reform in Zimbabwe: Controversies and Impact on the Economy*, Harare, Zimbabwe: Friedrich Ebert Stiftung and Institute of Development Studies, University of Zimbabwe, pp. 23–41.
- Mart CT 2011. British Colonial Education Policy in Africa. *Internal Journal of English and Literature*, 2(9): 190–194.
- Minn J 2009. Rule of Law: What does it mean? *Journal of International Law*, 18(2): 293–303.
- Moyo D 2009. *Dead Aid: Why Aid is not Working and How There is a Better Way For Africa*. New York, USA: Farrar, Straus and Giroux.
- Mpofu B 2016. Local Banks' Nostro Accounts Depleted. Zimbabwe Independent, 11 March 2016. From <www.theindependent.co.zw> (Retrieved on 4 June 2019).
- Munongerwa C 2016. An evaluation of the relevance of the AK model to developing countries such as Zimbabwe. *Afro Asian Journal of Social Sciences*, 2(2): 2229 – 5313.
- Nyarota S, Kavila W, Mupunga N, Ngundu T 2015. An Empirical Assessment Of Binding Constraints To Zimbabwe's Growth Dynamics. *Reserve Bank of Zimbabwe Working Paper Series No. 2*, 1–38., Harare, Zimbabwe: Reserve Bank of Zimbabwe.
- Neuenkirch M, Neumeier F 2014 The Impact of UN and US Economic Sanctions on GDP Growth. From <https://www.econstor.eu/bitstream/10419/121131/1/N_138.pdf> (Retrieved on 4 May 2019).
- Nherera C 1999. *Capacity Building in Educational Research in Southern Africa: Empirical Insights Into Qualitative Research*. Harare, Zimbabwe:, University of Zimbabwe, Human Resources Research Centre.
- Nonaka I, Takeuchi H 1995. *The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford, UK: Oxford University Press.
- Oketch M, McCowan T, Schendel R 2014. The Impact of Tertiary Education on Development, A Rigorous Literature Review. From <https://eppi.ioe.ac.uk/cms/LinkClick.aspx?fileticket=P0RTfd_qWFO%3D&tabid=3437> (Retrieved on 19 May 2019).
- Olaniyan DA, Okemakinde T 2008. Human Capital Theory: Implications for educational development. *European Journal of Scientific Research*, 24(2): 157–162.
- Omorewa M 2006. Educating the "Native": A study of the education adaptation strategy in British Colonial Africa, 1910–1936. *J Afr Am Hist*, 91(3): 267–287.

- Pape RA 1997. Why economic sanctions do not work. *International Security*, 22(2): 90-136.
- Parliament of Zimbabwe 2019. *Ministerial Statement State of Science, Technology, Engineering and Mathematics (STEM)*, Harare, Zimbabwe: Parliament of Zimbabwe.
- Rhodesia 1966. *Annual Report of the Secretary For African Education for the Year 1966*. Salisbury, Rhodesia: Government Printer.
- Rhodesia 1974. *Report of the Commission of Inquiry into Further Education in the Technical and Commercial Fields (Camemn Commission)*. Salisbury, Rhodesia: Government Printer.
- Rodney W 1972. *How Europe Underdeveloped Africa*. London, UK: Bogle – L'ouverture Publications.
- Schultz TW 1971. *Investment in Human Capital*. New York, USA: The Free Press.
- Southern Rhodesia 1963. *Report of the Southern Rhodesia Education Commission (Judges Commission)*. Salisbury, Southern Rhodesia: Government Printer.
- Southern Rhodesia Education Commission 1963. *Press Statement by the Chairman, Professor A. V. Judges*. 17th September 1963. Salisbury, Southern Rhodesia, Ministry of African Education.
- Strack H 1978. *Sanctions: The Case of Rhodesia*. Syracuse, New York, USA: Syracuse University Press.
- Tandon Y 1984. The post-colonial state. *The Journal on Social Change and Development*, 8: 2-4.
- Teal F 2011. Higher education and economic development in Africa: A review of channels and interactions. *Journal of African Economies*, 20(AERC Supplement 3): 50-79.
- Teferra D, Altbach PG 2004. African Higher Education: Challenges for the 21st century. *Higher Education*, 47(1): 21-50.
- The World Bank. 2007. *Zimbabwe Manpower Development and Training Project, Staff Appraisal report number 7005-Zim*. Harare: Population and Human Resources Department.
- Urch EG 1971. Education and colonialism in Kenya. *Hist Edu Q*, 11(3): 249-264.
- US Department of the Treasury 2013. Zimbabwe Sanctions Program, Office of Foreign Asset Control From <<https://www.treasury.gov/resource-center/sanctions/Programs/Documents/zimb.pdf>> (Retrieved on 12 June 2019).
- Usher D 2003. *Political Economy*. Oxford, UK: Blackwell Publishing.
- Van Wyk JA 2018. Sanctions and summits: Sanctioned African leaders and EU–Africa summits. *South African Journal of International Affairs*, 25(4): 497-515.
- Wang LF 1991. Trade sanctions, sector-specific unemployment and income distribution: A Dual Approach. *South African Journal of Economics*, 59(2): 72-76.
- Wood RM 2008. A hand upon the throat of the nation: Economic Sanctions and State Repression, 1976–2001. *International Studies Quarterly*, 52(3): 489-513.
- Zembere M 2018. *Democratic Citizenship Education in Zimbabwe's Higher Education System and its Implications for Teaching and Learning*. Doctor of Philosophy Thesis, Unpublished. Stellensboch: Stellensboch University, South Africa.

Paper received for publication in August, 2020
Paper accepted for publication in October, 2020