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Key Factors Hindering the Development of Education in Sub-Saharan Africa – Scoping Review

Abstract: Lack of effective education is often highlighted as one of the main factors hindering the development of African countries. Most of Sub-Saharan Africa exhibit some of the lowest national GDP indexes and the lowest literacy rates and additionally account for more than half of out-of-school children globally. Despite gradually implemented reforms, Sub-Saharan educational systems still face numerous challenges and do not meet global standards. Although the number of articles referring to Sub-Saharan education has been growing in recent years, they remain fragmented and do not provide a synthetic analysis of the main factors shaping education in the region. This article addresses this gap in the understanding of impediments to education in Africa, aiming to connect existing discussions to identify the barriers in the Sub-Saharan education systems. Based on an analysis of a selection of existing research evidence, statistics and reports, this study delivers a holistic analysis of education systems in Sub-Saharan Africa along with their determining factors. This study contributes to a better understanding of Sub-Saharan education as one of the critical factors in the social and economic development of this region.

Keywords: educational barriers; educational outcomes; education systems; socio-economic development of the Sub-Saharan region; Sub-Saharan Africa

Introduction

There is a consensus among academics that one of the main factors hindering the development of African nations is the lack of accessible, universal and reliable education systems (Arora, Vamvakidis, 2005; Glewwe, Maiga, Zheng, 2014). Sub-Saharan countries exhibit adult literacy rates ranging from 65% to just 29% (Smith-Greenaway, 2015;

UNESCO, 2014). Existing studies show that despite gradually implemented education-al reforms, Sub-Saharan educational systems still face numerous challenges in order to reach global standards (Majgaard, Mingat, 2012; Mingat, Ledoux, Rakotomalala, 2010; UNICEF 2009).

The research referring to education in Africa remains fragmented and tends to focus on selected aspects. Some recognise the colonial past as a dominant factor for poor education. For example, according to P. Freire (1979) in the colonial era lack of access to education was intentional and served to prevent empowerment and social change, while accessible education was ideological, serving the colonial agenda. Other works recognise the problems of post-colonial educational standardisation on the African continent; neglecting schooling in local languages and producing discord between the curriculum and the ethnic African cultures (Babaci-Wilhite, Geo-JaJa, Lou, 2012). Authors also mention the neo-liberal reforms which have resulted in financial cuts and the privatisation of education (Oketch, 2016; Potulicka, Rutkowiak, 2012). Other works address contemporary issues, such as teacher training and salaries, the quality of education (Bourdon, Frölich, Michaelowa, 2010) or government policy and spending (Stasavage, 2005). Although the number of articles referring to education has been growing in recent years, they do not provide a synthetic analysis of the main factors and in reference to Sub-Saharan African countries.

This paper aims to connect up the existing discussion to identify the prevailing barriers and limitations of Sub-Saharan education systems; as research shows, understanding these hindering factors is critical for its development. Many authors emphasise that education plays a critical role in the process of the democratisation of these countries (Chisholm, Leyendecker, 2008). Additionally, in the *Africa competitiveness report*, lack of appropriate knowledge is indicated as one of the main obstacles for the development of African business (Bah et al., 2017). Taking the relatively high proportion of early-stage entrepreneurial activity in African countries (Dvouletý, Orel, 2019), research indicates that Africa's major problem in growing entrepreneurship is poor education and basic infrastructure (Acs, Szerb, Jackson, 2013). Hence education stands out as the driving factor for individual well-being, democratisation, economic development and business growth.

This article constitutes an attempt to deliver a holistic overview of Sub-Saharan education systems and offer new insights for understanding its educational development. The study is based on secondary data analysis using the scoping review methodology. It refers to the 42 Sub-Saharan countries, which are ranked at the bottom of all developing regions while facing similar problems and challenges concerning education development (Calderón, Servén, 2010). South Africa, the most robust Sub-Saharan economy, has been excluded from the analysis as it accounts for 22.7% of total Sub-Saharan GDP. Authors see this country as a strong independent, international player, the only Sub-Saharan member of BRICS and G20, and thus typically not regarded in the literature in an African perspective (Alden, Schoeman, 2013; Arora, Vamvakidis, 2005).

Methodology

To achieve our research goal, we have employed a scoping review approach, a five-stage framework, enabling replication of the research strategy and increasing the reliability of the findings (Arksey, O'Malley, 2005). The focus of the review is an exploration of the

key hindering factors to Sub-Saharan education systems at primary, middle and higher levels of education, with a particular focus on the cultural and economic. To ensure that a substantial range of literature was captured relating to this topic, we posed the following initial research questions to guide the search:

1. What are the key factors hindering Sub-Saharan education systems?
2. What factors account for the disparities in the education systems in Sub-Saharan countries?
3. What is the role of economic, cultural and geographical factors in the development of education systems in Sub-Saharan Africa?

H. Arksey and L. O'Malley (2005) suggest that a broad definition of key concepts for search terms should be adopted to glean a "broad coverage" and they were developed to capture literature that related to the research questions defined. The final key search terms for education included: education*, school*, system*, and for Sub-Saharan Africa: Sub-Sahara*, Sub Sahara* and Africa*.

We developed inclusion and exclusion criteria for a comprehensive extraction of existing literature. In order to reflect the focus of the scoping review on current knowledge, the review concentrated on literature from the previous 20 years (2000–2020) while other inclusion criteria included peer-reviewed journal articles, books, and research reports. Excluded from the review were dissertations; theses and conference papers; policy documents; studies that did not address education and Sub-Saharan Africa together; and texts in languages other than English. Four electronic journal databases, specifically AgeLine (EBSCO), Science Direct, Scopus, and Web of Science, were used to conduct searches for relevant materials. Different combinations of keywords were used until a saturation point was reached, i.e. where duplicate results were returned, or material was no longer relevant.

A full list of inclusion and exclusion criteria is outlined in Table 1.

Table 1. Inclusion and exclusion criteria

Selection steps	Comments	No
Items identified through initial database searches	Databases: EBSCO, Science Direct, Scopus, Web of Science	998
Duplicates removed		759
Title review		345
Abstract review: those with low reference to research questions were removed	Articles that made a passing reference to the research objective, typically those covering the effects of poor education in Sub-Saharan Africa. Articles that were editorials, discussion or personal opinion pieces were removed.	87
Items where population/sample did not fit research objectives, were removed	Articles whose focus was on a subsample of the student population (females, private schools, agriculture education etc.).	52
Full-text review	Items without access to the full text and low input conceptual papers were removed.	31
Final review sample		22

Source: authors

After using the key search descriptors, 998 articles were identified. First, duplicates were removed. A review of the titles revealed large numbers of articles outside our direct scope, particularly those related to a specific aspect of African education such as ethnicity or HIV. Despite the attraction of the cognitive component of works dedicated to culture or indigenous aspects of education, these do not add substantial insights into evaluating public education systems. A large number of articles were removed through a review of abstracts, particularly articles which merely made a passing reference to our study objective. Guided by the inclusion and exclusion criteria, 31 works were identified as being relevant to the research topic. Full-text versions of these articles were obtained, with each article being reviewed and confirmed as appropriate by the authors. This process provided an opportunity to identify three further studies from a review of the reference lists of each article. After the removal of those with low input, the final sample was 22.

The charting of selected papers was carried out in Microsoft Excel. Summaries of each article were developed by author, year, location of study, study design, study methods and sample size. Specific attention was paid to the insights that each article carried in terms of the study objective: identifying the critical hindering factors of Sub-Saharan education systems. Comments on these insights were inserted into the Excel document. This paper also used reports published by UNICEF, UNESCO, the World Health Organization and the World Bank to understand change over time in education in Sub-Saharan Africa.

Findings

The findings below are based on the scoping review of the key factors hindering education in Sub-Saharan Africa. Although existing studies report educational disparities between Francophone and Anglophone African countries suggesting that the latter are more advanced in their educational development (Bashir et al., 2018; Fehrler, Michaelowa, Wechtler, 2009), we do not emphasise this phenomenon in our findings. It is because it does not constitute a hindering factor, but rather a characteristic feature prevailing in Sub-Saharan education systems.

Five factors were identified as a result of the scoping review process based on the economic, cultural and geographical context of education development in Sub-Saharan African countries.

Education costs and household expenditures

The first factor vividly signalled by the literature is the cost connected with schooling in combination with low household incomes. One of the most severe education schooling costs is the existing obligatory admission fees at all school levels (Colclough, Al-Samarrai, 2000; Lewin, 2008). Despite several attempts to abolish such fees, financial unsustainability and budgetary constraints have hampered such initiatives in many Sub-Saharan African countries (Lewin, Sabates, 2012). The problem has been recognised by the United Nations Children Found (UNICEF) and the World Bank, and in 2005 they decided to cooperate by introducing the School Fee Abolition Initiative (SFAI) in several of the countries. A year after the abolition of school fees, there was a significant growth of total primary school enrolments in all the concerned countries (Lewin, 2009).

Formal fees to attend schools still exist in at least 11 African countries, and informal fees function in a significant number of Sub-Saharan schools (UNESCO, 2016). Many of the countries that have abolished school admission fees (for example Rwanda, Zambia, Uganda), find that more than half of education expenditure is still covered by households (Tooley, Dixon, 2006; UNESCO, 2016). Moreover, in some countries, where education is officially free, it is a frequent practice that schools impose illegal registration fees (Antonowicz, 2010).

Public school funding is at the world's lowest in Sub-Saharan Africa and the amount of government spending per student remains significantly lower than in other parts of the world (Colclough, Al-Samarrai, 2000; Daun, 2000; İşcan, Rosenblum, Tinker, 2015). Whilst public expenditure per primary education student in many highly--developed countries in 2011 was on average USD 654, the average for the Sub-Saha-ran region was USD 131, and in the Democratic Republic of Congo as low as USD 18 (UNESCO, 2014).

Indirect costs related to schooling are a critical cost-related aspect of Sub-Saharan education. For example, expenditure on school uniforms, equipment or living expenses, as a large number of schools, especially in East Africa, are boarding schools (Lewin, 2009).

Although student grant programs officially exist in many Sub-Saharan African countries, the payments remain relatively low and tend to be delayed (Daun, 2000). In Madagascar, for example, the grant is frequently equivalent to the sum of money that needs to be spent in order to collect it (for example from the remote post office); frequently it is delayed for even over a year. Similar delays have been noticed in Ghana and Uganda; additionally, the sum of aid received is irregular, which constrains effective planning and spending (Antonowicz, 2010).

The analysis of research and reports suggest that costs will likely be one of the most significant hindering factors in access to education, despite school fees being abolished and with systemic changes such as government financial aid programmes being implemented (Daun, 2000; Lewin, 2009; İşcan, Rosenblum, Tinker, 2015; UNICEF, 2009).

Learning conditions

Existing research indicates that overcrowding in classrooms constitutes one of the most severe problems in Sub-Saharan education systems (Dembélé, Lefoka, 2007; Fehrler, Michaelowa, Wechtler, 2009). According to Early Grade Reading Assessment surveys, classes in Sub-Saharan Africa frequently have over 50 pupils, reaching up to 80 in Tanzania (Bashir et al., 2018). In Malawi, which is one of the worst countries when it comes to overcrowding in classes, the average number per class is over 150 in grade 1, grades 2 and 3 are attended by over 125, grade 4 – over 100, grade 5 – over 90, grade 6 – over 80 and grade 7 – over 70 (Bashir et al., 2018). Consequently, class overcrowding results in more unsatisfactory school performance among children.

Another essential problem facing education in Sub-Saharan African countries is the poor physical condition of schools with about half of public schools lacking hygiene infrastructure such as toilets (WHO, 2015). More than half of primary schools lack access to drinking water. For example, in Angola and Niger, more than 80% of schools operate without access to drinking water (UNESCO Institute for Statistics). Electricity is accessible to only about 34% of Sub-Saharan primary schools (UNESCO Institute for Statistics).

However, in many Sub-Saharan countries, it does not exceed 20% (for example in Uganda it is only about 2%, Madagascar about 3%, Sierra Leone, Burundi and Niger about 5%, Chad about 7%, Mali, Ethiopia and Togo about 10%) (Bashir et al., 2018). Lack of electricity significantly limits not only learning times but the adoption of modern technology (Alzouma, 2005; Donou-Adonsou, 2019).

Completion rates and drop-outs

Evidence shows that yearly school drop-out rates in Sub-Saharan African countries are high, for example in Malawi, primary school is completed by less than half of pupils (Bashir et al., 2018). According to the UNESCO data, in 2010 the completion rates in Sub-Saharan countries varied from 25% in Uganda up to 97% in Mauritius, but for half of them, the rate was under 60% – compared to nearly 100% in developed countries (UNESCO, 2014).

Arguably, one of the significant causes of school drop-outs is the distance between the school and home (Bashir et al., 2018; Estache, Wodon, Lomas, 2014; Daun, 2000), which affects parental decisions on whether to send their child to school or not, with a drastic enrolment fall for distances over two km (Lehman, 2003). Girls, in particular, are significantly impacted by this; their enrolment decreases by 14% for every extra 500 metres from school (Andrabi et al., 2010). In addition to influencing the enrolment decision for a child, long distances to school negatively affect their performance (Bashir et al., 2018); children who live far from school are much more frequently late or absent from classes, tired and less focused. The percentage of children living more than three km from school differs from country to country, but also within countries between rural and urban areas. In Ghana, for example, 42% of children from rural areas and 45% from urban areas need to travel over three km. In Burkina Faso, 67% of rural children and 19% of urban need to travel three km to reach school (Bashir et al., 2018). These numbers show the serious scale of distance-related education barriers in the Sub-Saharan African countries.

Language barriers

A further hindering factor in Sub-Saharan education is the language barrier (Bashir et al., 2018; Dembélé, Lefoka, 2007). Findings indicate that especially in Francophone African countries even if the official language is French, many households still use the traditional tribal languages, the number of which is estimated to be from 1250 to over 3000 (Heine, Nurse, 2000). It prompts families, which are not well-educated and are not fluent in the use of the official language, to have extra difficulties in sending their children to school and helping them perform; the family is not able to help them with homework nor explain issues which were discussed in the class. Without extra language classes (mostly non-existent) and attention from the teacher (lacking due to overcrowded classes), children schooled in a second language are subject to poorer educational performance (Dembélé Lefoka, 2007). Even though the problem was addressed in UNESCO's schooling recommendation from the 1950s that children should be taught in their mother tongue, at least at the early stages of education, there are still many Sub-Saharan countries which do not provide this opportunity.

Limited access to good quality higher education

One of the main challenges confronting tertiary education in Sub-Saharan Africa is the enrolment ratio which is three times lower than the world's average (Banya, 2001; Darvas et al., 2017). Interestingly, tertiary enrolment ratios rose from 400 000 students in the 1970s to 7.2 million in 2013 (Darvas et al., 2017). Nevertheless, the growth is insufficient in combination with changes to Sub-Saharan demographics which entails a high demand for educational development.

Financial constraints are one of the major factors hindering tertiary education. Prioritisation of other developments at the expense of investment in public universities results in a proliferation of private higher institutions, which currently account for two-thirds of Sub-Saharan universities (Johnstone, 2006) while limited state support also results in low competitiveness (Yusuf, Saint, Nabeshima, 2009). Looking at three relevant African rankings, the best universities in Africa (appearing the most frequently in the three rankings and occupying the highest positions) are universities in South Africa (30 times) and Egypt (15 times). Among Sub-Saharan countries, Nigeria appears eight times, Kenya – three times, Ghana and Algeria – twice each and Uganda together with Ethiopia are mentioned once each. In QS ranking (top 1000 universities in the world) only four universities appear – two from Nigeria, one from Algeria and one from Uganda. This fact indicates that the Sub-Saharan universities (excluding South Africa) are not competitive worldwide.

Teaching quality

The working conditions of teachers strongly determine education in Sub-Saharan Africa. Studies indicate that the number of students per teacher is amongst the highest in the world (Thakrar, Wolfenden, Zinn, 2009). Hence a teacher in the Democratic Republic of Congo teaches approximately twice as many students as one in developed countries. The numbers change for secondary schools (Thakrar, Wolfenden, Zinn, 2009) which confirms the high drop-out rates during or after primary school.

Studies indicate that a significant number of Sub-Saharan teachers have not had any training to prepare them to teach (Hardman et al., 2011). According to the World Bank database, only 65% of teachers in primary education received training in 2017, which is lower than the average for all low-income countries put together (72% in 2018). Additionally, existing teacher training is outdated and Eurocentric (Chang'ach, 2016). The problem of underqualified teachers is exemplified by the results of the Ugandan National Assessment of Progress in Education (NAPE) indicating that only about 60% of Ugandan primary teachers can be rated proficient in numeracy (UNEB, 2015). The report reveals similar outcomes regarding literacy in English. Over 33% of primary teachers in Uganda were not able to pass a test, and only about 40% demonstrated proficient writing skills. The poor quality of teaching contributes to the limited reading and mathematics skills of students (Bashir et al., 2018).

Conclusions

The driving aim of this study was to identify the barriers and limitations in Sub-Saharan education systems. As the effect of the scoping review process, we have identified five key

interconnected factors that impede development and act as contributing factors to one another. The analysis reveals the very complex and multifaceted picture of the current state of education in Sub-Saharan Africa. In order to move forward, all highlighted issues need to be addressed, although the common denominator for all current challenges seems to be the economic factor. It is a lack of resources at the household level that produces child labour and high drop-out rates, and it is a lack of funding that results in poor learning conditions and inadequate teacher training. Despite numerous similarities, our results indicate that Sub-Saharan countries cannot be perceived as a whole and that each country has a different educational context and needs which should be confronted in educational reforms. While the economic factor appears to be the key differentiating variable between Sub-Saharan countries, the geographical proximity of schools and languages are also essential aspects of education in these countries.

Future research avenues should focus on exploring progress within each of the five key hindering factors identified in our scoping review. Detailed studies could also identify numerous bottom-up grassroots initiatives addressing these factors which were not within the scope of this paper. Identifying projects and programs that create sustainable and lasting value within particular Sub-Saharan Africa education systems can undoubtedly contribute to the development of this region.

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