

Bachelor Thesis

Internationalization Of Higher Education And How It
Can Be Used To Promote And Progress Sustainable
Development In Africa

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Abstract

This thesis aims to show how internationalization of higher education can be used to increase access and quality of higher education in Africa and how more and better education can be used to achieve sustainable development for African countries. Aspects of the internationalization of higher education, such as mobility and the use of technology already benefit African higher education. However, at the moment they come with numerous challenges, inefficiencies, and negative consequences. The thesis will provide possible solutions to the most severe problems to use the internationalization of higher education to its full potential in Africa. The literature review has led to the conclusion that special focus should be paid to reducing the language barrier and to ensuring cultural adaptation of imported learning materials and curricula. Furthermore, focused funding and increased cooperation between African nations, should help improve the infrastructure, allow for parallel educational and economic development, and reduce the currently experienced negative consequences of mobility.

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Method

This thesis reviews existing literature, to provide a new perspective on the internationalization of higher education, how it currently impacts Africa and how it could be used to benefit the continent's development more. During the research, numerous literature was found on the topic of internationalization. However, these in-depth evaluations were rarely region specific. On the other hand, literature with a focus on regional case studies was either brief and summative or targeted only one aspect of internationalization of higher education. This thesis aims to offer a collective summary of the topic in its entirety, while it maintains a regional focus on Africa. For this purpose, comprehensive reports on the global phenomenon of internationalization of higher education, specific works on individual aspects thereof, and Africa-specific findings were consulted and reviewed.

It should be noted that internationalization of higher education is not a new development. While over the last decades a noticeable expansion of participants in internationalization can be witnessed, the concept itself has changed little in that time. Consequently, a substantial amount of the literature regarding this topic has been provided by the same authors or has expanded upon the works of said authors. To counteract the risk of subjectivity, sources on distinctive characteristics of internationalization, such as brain drain and mobility, were explored individually. So, this thesis' brain drain subchapter is not exclusively based on findings from literature concerning internationalization of higher education. Instead, economic papers and developmental studies on Africa were, also reviewed and included in the analyses. This method was applied to all included themes. In addition, a variety of sources were reviewed for the presented findings of this thesis. The majority are academic essays and reports. However, due to the frequent media coverage of the topic, newspaper and journal articles were also consulted. This allowed for the inclusion of more recent and societal movements influencing the subject of internationalization of higher education and, or the sustainable development of Africa.

Introduction

Internationalization of higher education (HE) is not a modern phenomenon. Since the popularization of academic pilgrimages in the 12th century, and even before, some form of internationalization of higher education can be witnessed throughout time at any time (DeWit & Merckx, 2012). Yet, unprecedented leaps in technology have facilitated the flow of information, people, knowledge, and resources tremendously in the last decades. This has led to a continuously more globalized society, as well as increased internationalization. While the concepts of globalization and internationalization are interconnected, they are not synonymous (Daly, 1999). Originally, globalization refers exclusively to the integration of a global economy (Daly, 1999). Globalization, therefore, relates mostly to trends of global standardization.

“Internationalization refers to the increasing importance of international trade, treaties, allies, etc.” (Daly, 1999: 1). Contrary to globalization, it maintains a stronger emphasis on the individual nations even as interconnectedness between nations increases. It is important to distinguish the two, as internationalization, if done correctly, better represents individual countries needs and interests. It is thus often more helpful to promote sustainable development in individual countries more effectively. However, so far, there is still a misrepresentation of interests. All benefits derived from this increased globalization have been diverted almost exclusively to first world countries. Similar inequalities can be witnessed in the internationalization of education (Altbach & Knight 2007; Alemu, 2014). Nonetheless, internationalization, specifically of HE, could be a powerful tool to better balance the benefit distributions between first and third world.

This thesis’ focus on HE was chosen because tertiary education is by trend both the costliest level of education and the least funded by African government (Oya & Kalema, 2014). Ballog summarizes, how a slow but continuous deterioration of African HE over the past decades has led to the situation of today: “By the late 1980s, governments began redirecting funding from higher to primary education, in part at the insistence of international lending institutions, which argued, not unreasonably, that with high levels of illiteracy in Africa, money spent on basic education would do the most to alleviate poverty. At the same time, many donors reduced support for higher education, including high cost graduate scholarships, and phased out subsidies for expatriate faculty members teaching at African

universities. Moreover, the collapse of communism in the former Soviet bloc brought an end to the generous scholarships that allowed many young Africans to undertake their university studies in Eastern Europe, the Soviet Union, and Cuba. In a vicious cycle, worsening conditions have led many of Africa's best minds to emigrate to the Northern hemisphere, where they benefit from far superior academic facilities and living conditions. Their departure deprives African higher education of its most important resource: local intellectual power.” (2004: 3). Due to this neglect of HE, it is today far worse developed than other levels of education in Africa. All the while it remains just as important to the progression of sustainable development.

The majority of the world's countries are classified as developing nations (United Nations, 2012). Yet, Africa was chosen as the focus for this thesis for three reasons: It is the least developed region in the world in regards to HE, it is the “youngest” continent (Murphy, 2014: para. 4) and it arguably has the largest economic potential (Murphy, 2014; Schulmann, 2017). African countries include three of the top 10 fastest growing economies and 29 of the 30 “countries with the largest proportion of population under 18 years old” (Schulmann, 2017: Recommendations for U.S. HEIs Seeking to Increase African Students' Enrollments section, para. 1). With over 200 million young people (age 15-24), as of 2014, Africa has the human resources to allow for economic growth and general sustainable development (Murphy, 2014; Alemu, 2014). Nonetheless, practically for development to occur a “well-trained and educated work force” is required (Schulmann, 2017: Recommendations for U.S. HEIs Seeking to Increase African Students' Enrollments section, para. 1). Yet, despite “considerable growth in enrollment numbers in the last decade” (Altbach, Reisberg & Rumbley, 2009: 132), Sub-Saharan Africa's (SSA) HE enrollment remains the lowest in the world at around five percent in 2014 (Murphy, 2014). In addition to low enrollment rates, Africa also constitutes for the “least-developed higher education in terms of equity and quality” (Alemu, 2014: 76). “By 2004 there were no more than 300 higher education institutions on the continent that satisfied the criteria of a university” (see Damtew & Altbach, 2004; Tekku, 2008 cited in Alemu, 2014: 76-77). Due to these disparaging conditions, many African countries face high dropout rates in HE, at times up to 40 percent and higher (Zeelen, 2012). Internationalization of HE could help provide easier access to more and higher quality education for the African population and thus unlock the abundance of currently unused potential in Africa.

There is more than one acceptable definition of the concept of internationalization. This thesis will use Schoole and Knight's definition, which defines internationalization of education as "a series of international activities such as academic mobility for students and teachers; international linkages, partnerships, and projects; new international academic programs; and research initiatives." (2013: 4). As already exhibited in the definition, internationalization is a process, which can take on a vast variety of forms. From the movement of African students abroad or teacher from abroad to Africa, over shared research programs and branch campuses, all the way to the integration of technology and Massive Open Online Courses (MOOCs), the possibilities seem endless. Nonetheless, the majority of the numerous projects of internationalization of HE can be categorized under one of two themes: mobility or technology.

This thesis will first show the link between education and sustainable development. Then it will subsequently show how the internationalization of HE could be the foundation to help close the gap between developing and developed nations. For that purpose, the benefits and consequences of mobility and technology implementation will be explored and policy suggestions on how to improve the current system will be made. In conclusion, this thesis will examine whether internationalization of higher education is beneficial for Africa and African development from a utilitarian perspective. Thus, the balance between positive consequences and negative consequences for African individuals and nations will be assessed. Moreover, future proposals to improve the African HE system will be provided to improve HE and encourage sustainable development in Africa in the future.

The Sustainable Development Goals

Just like internationalization, sustainable development can be defined in numerous ways. For simplicity, this thesis will define sustainable development according to the new Sustainable Development Goals (SDG) as defined by the United Nations. This will provide a clear definition without overgeneralizing the complexity of the matter. In 2015, after the set deadline of the Millennium Goals, all 193 member states of the UN agreed on 17 goals and 169 specific targets¹, which aim to “end poverty, promote prosperity and help people’s wellbeing – while protecting the planet” (Watt, 2015: What are the Sustainable Development Goals section, para. 1). These 17 goals are:

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

¹ The specific targets will not be included nor explicitly referred to in this thesis. For information about them see Watt, E. (2015). *Education is key to all of the new Sustainable Development Goals*. Retrieved 19 May, 2017, from <http://theirworld.org/news/education-is-key-to-all-of-the-new-sustainable-development-goals>

15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development (Sustainable Development Knowledge Platform, 2015).

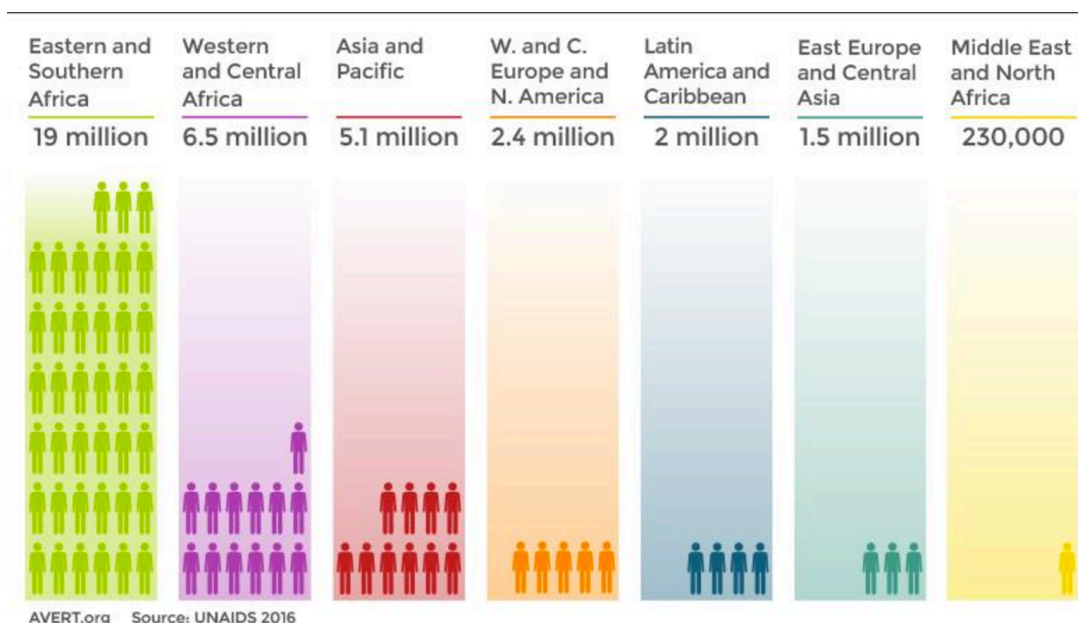
Out of all 17 goals, only one is specifically about education. However, the interconnection between each of the other 16 presented problems and education is undeniable. Education is not only connected to each problem but it is also a major part of the solution to each problem (Watt, 2015; Global Education First Initiative, 2015). A Harvard study showed that a one-year increase in the average education level could result in a 12.2 percent increase in Africa's GDP (Murphy, 2014) and according to the Global Education First Initiative, one additional year of education equates a wage earnings increase of ten percent. The initiative estimates that "if all students in low income countries left school with basic reading skills, 171 million people could be lifted out of poverty" (2015: 0:12). Consequently, the increased earning will provide access to basic needs and raise living standards - effectively reducing poverty (Awan, Mailk, Sarwar & Wagas, 2011). Education is not the only connection between the goals. For example, women empowerment is strongly linked to improvement of poverty and health. Yet women empowerment itself is not possible without education. "If all women completed primary education maternal mortality would decrease by 66 percent" and if "all women had secondary education there would be 49 percent fewer child deaths" (Global Education First Initiative, 2015: 1:00 and 0:48 respectively). It does not end there.

Another example is the infection rate of HIV/AIDS, a problem, which although not unique to Africa, is much more widespread there than in the rest of the world as can be seen in figure 1. African women who completed secondary education have a significantly lower infection rate with HIV than women who did not (Pettifor, Levandowski, MacPhail, Padian, Cohen & Rees, 2008). This is not at least due to the fact that, "better-educated women are more likely to delay marriage and childbearing, have fewer children, earn better incomes, and have greater decision maker power within relationships (Pettifor et al., 2008: Discussion

section, para. 2). In fact, if “all children received a basic primary education 700,000 cases of HIV in young adults could be prevented each year, according to the Global Partnership for Education” (Watt, 2015: How does Education fit into the Other 16 SDGs section, para. 1).

Figure 1: Number of People Living with HIV in 2015

(Avert, 2017)



Education can provide “life-saving information - including how to protect themselves from sexual abuse, landmine awareness, hand-washing and other survival skills necessary in the specific context. But it can also give the hope of a good future and give them an alternative to such practices as child labor and child marriage” (Watt, 2015: How does Education fit into the Other 16 SDGs section, para. 3). Communities, in this case, the UN “develop sustainability goals, local educational systems can modify existing curriculums to reinforce those goals” (McKeown, Hopkins, Rizi & Chrystalbridge, 2002: 2)

Mobility

The growing connectedness of the world, the availability of easier and cheaper travel, the increasing importance of global networks, also in regard to knowledge production, and the changes in regional and national immigration policies are transforming transnational academic mobility in the 21st century. In the first five years of this century alone, student mobility has increased by 50 percent (Kim, 2009) and “while mobility is increasing globally, African students have become the most mobile [on a global scale]” (see Kishun, 2006 cited in Jowi, 2017: para. 4). As of 2013, every 10th internationally mobile student was African, rendering Africa’s mobility rate twice as high as the world average (Schulmann, 2017; “La Mobilité Internationale des Étudiants Africains”, 2017). A trend that only seems to be growing, as “the number of African students pursuing post-secondary degrees abroad grew 24 percent, rising from 343 370 to 427 311” (Schulmann, 2017: para. 1) between 2006 and 2014. This trend can be attributed mainly to the continents “increasingly youthful population and growing demand for education” (Jowi, 2017: para. 4).

According to Altbach and Knight and the International Mobility of African Students report by Campus France (2007, 2017, respectively), the main incentives for mobilization in education globally are:

- The desire to explore and learn about other cultures or languages. This refers mostly to Western students. However, it can impact Africa’s development indirectly, as the interest of Western students can lead to better exchange programs or research projects with African universities. In 2003, South Africa hosted 51 400 international students out of which 7 100 were not African, including 4 700 students came from Europe and North America (Times higher education, 2005)². An increased interest in Africa as an education destiny could

² South Africa is not representative for the norm in Africa. It is likely that most other African nations host less international students. For more detailed information about student migrations see Unesco. (c2017). *Global Flow of Tertiary - Level Students*. Retrieved 20 May, 2017, from <http://uis.unesco.org/en/uis-student-flow>

create a new income source for African nations³ (Altbach & Knight, 2007; Kim, 2009; Fatunde, 2014).

- Out of necessity. In extreme cases, this can refer to dangerous or unstable circumstances in the country of origin, such as serious economic or food crises, armed conflicts or civil wars (“The International Mobility of African Students”, 2017). More commonly it refers to the need for a specific education, to be more open to better job opportunities. The main consequence from this incentive is the human capital flight or brain drain, which will be examined in detail in the next chapter.
- For quality assurance. African universities often cannot provide the same quality education, well established and well-funded universities in developed countries can offer.
- Constraint. Setting apart quality, many African nations are not equipped to provide higher education for everyone who wants it. As will be discussed in more detail in the following paragraph.

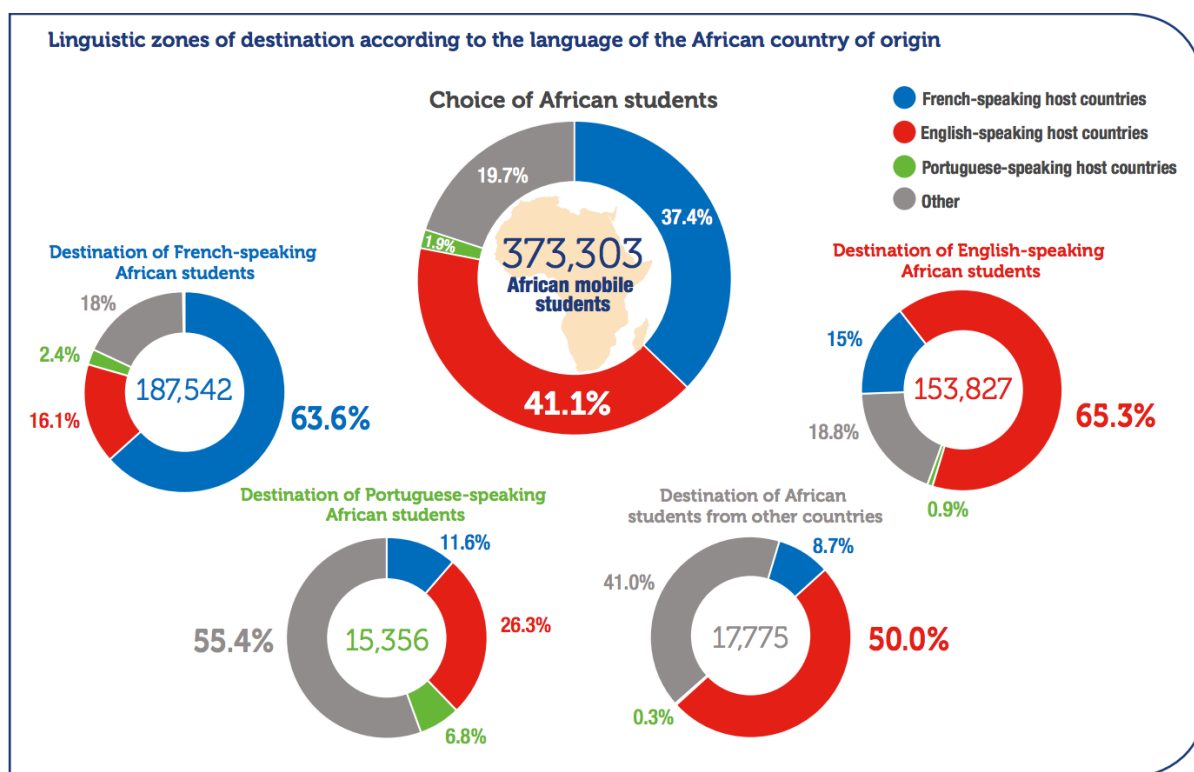
The Language Component

Language has an important influence on mobility in Africa. Presently 99 percent of international students from Africa, come from French and English speaking countries. The main destination countries, share a native language with African countries. Thus, as of 2014, 42.5 percent of African students emigrated to English speaking countries, 34.4 percent to French speaking countries and 7 percent to Middle Eastern countries, primarily Saudi Arabia. The slowly increasing popularity of Middle Eastern countries is partially due to a common language with North African nations, as well as a shared religious identity and growing scholarship availability particularly to Arabic speaking North Africans (“The International Mobility of African Students”, 2017). Countries which have renowned higher education institutions, desirable economic conditions, and standard of living, yet do not share an official language with African countries, are much less considered. Consequently, the next main destination countries are Germany and Italy with 3.3 and 2.4 percent of African international students respectively (“The International Mobility of African Students”, 2017). The advantage of not having to learn a new language to communicate in the destination countries

³ Economies benefit from increased students, as all student expenditure and services will be added to the national GDP.

is substantial. It allows for a better focus on the education pursued and facilitates cultural and social integration as well. It is therefore not surprising that a majority of French speaking Africans (63.6%) and of English speaking Africans (65.3%) explicitly seek out education in countries that share their language. The only noticeable exception to this rule are Portuguese speaking African students (“The International Mobility of African Students”, 2017), as can be seen in figure 2. This could be attributed to the fact, that the main Portuguese speaking countries, namely Portugal and Brazil, often cannot offer the same quality education or economic opportunities as for example France or the US. For all other international African students, English speaking countries are preferred by half (“The international mobility of African students”, 2016), potentially because English, as the world language, is most accessible to be learned.

Figure 2: Impact of Language on African Mobility
 (“The international mobility of African students”, 2016)



These numbers emphasize that mobility can be encouraged and facilitated through the availability of language programs, particularly in English and French, whether it is in African education institutions or offered inclusively by destination HE institutes.

Overcrowding and Scarcity of Resources

From these 427 311 internationally mobile students, an uncontested majority of 78.4 percent originate from Sub-Saharan Africa (SSA) (“La Mobilité Internationale des Étudiants Africains”, 2017). This is no coincidence. For the last 40 years, enrollment in SSA consistently increased at an average annual rate of 8.6 percent. In other words, over the last decades, education planners were faced with the nearly impossible task to adjust higher education systems for a doubling demand every eight years (see Bruneforth, 2010 cited in Zeelen, 2012). The system is expanding. Uganda, for example, had only one university up until 1988, in 2010 the Ugandan National Council for Higher Education (NCHE) reported 29 universities and 152 other tertiary education institutions (Zeelen, 2012). Yet it is not enough to counteract the surge in demand, leading to a massification of higher education, where universities run well over capacity.

One reason behind this phenomenon can be traced back to the end of colonialism: at that time, there was a dire need to fill numerous civil servant and other positions, which opened up to the native population after independence. This “availability of employment opportunities” (Zeelen, 2017: 159), practically guaranteed a job upon completion of the university degree. A strong stigma was hence created, that universities lead to “social mobility” (Zeelen, 2017: 163) and improved status. Other, more prominent reasons, for the rise in demand for HE, is the considerable population growth Africa has experience in the last few decades. According to United Nations estimates, the African population almost quadrupled from 277 million people in 1960 to 955 million people in 2011 (see UNESA, 2004 cited in Zeelen, 2017). Furthermore, the World Bank estimates predict a doubling of Africa’s population by 2036 (Zeelen, 2016). Such a substantial increase will naturally also increase the number of youth and hence the number of potential students on the continent. Especially when considering “the expansion and improvement of standards at both primary and secondary schools” (Zeelen, 2017: 159), which inevitably led to an increase in students qualified for and in want of tertiary education. Returning to the case study of Uganda, a rise from 2.2 million to 6.8 million primary school enrollments has been observed between 1986 and 2003 – a trend not unique to Uganda (see Openjuru, 2010: Mkude et al., 2003 cited in Zeelen, 2017). Consequentially, this massification of higher education endangers the quality of education provided. There are not enough resources to expand accordingly to the population’s demand. To complicate matters, it is almost impossible to determine how much funding or resources are needed precisely to solve this problem. Too many factors, such as

infrastructural improvements, sufficient salary for professionals to remain in Africa, etc. must be considered to compute an accurate number. Even if it were possible this number could fluctuate with changes in political stability, natural events or level of education. More educated politicians and professionals could find ways to use the available resources more efficiently or to create more job opportunities and income to increase national funding (Bollag, 2004). While this further emphasizes the importance of HE, it also highlights the difficulty of quantifying Africa's needs for improvement of HE.

The HE system in Africa is faced with insufficient faculty and teaching materials. Shortages of faculty, not only lead to overcrowded lectures but can also lead to moonlighting, a practice where groups of lecturers circulate among universities (Alemu, 2014; Zeelen, 2017). While the absence of sufficient study material results in African students and lecturers “working predominantly with notes and not with original publications; the absence of a reading culture; the use of outdated teaching and reference materials; teaching materials without links and examples referring to African realities; neglect of the local African languages; and teaching programs which are often test- and exam-oriented, with sometimes the unintended negative consequences of plagiarism and fraud” (see Kanyandago, 2010, Ramani & Joseph, 2002, Openjuru, 2010 cited in Zeelen, 2017: 160). These deficiencies in HE institutions naturally correlate to the lack of infrastructure and often underfunded and unstable governments (see Sy Habib, 2003, Damtew and Altbach, 2004, Sichone, 2006, Teichler, 2004, Knight, 2013 cited in Alemu, 2014). Wanting infrastructure, of course, restricts equitable physical access to HE. This only increases the financial need of the HE system in Africa. However, the African governments are restricted by financial austerity, limited and often undependable funding, as well as high corruption, which remains a big barrier towards sustainable development. Moreover, there habitually appears to be the argument that “public investment in universities and colleges brings meagre returns compared to the returns for primary and secondary education and higher education magnifies inequalities” (World Bank, 2000 cited in Zeeland, 2017: 161). “Growing budget constraints in higher education has, to a large extent, hampered efforts for higher education to achieve its goals” (see Altbach & Peterson, 1999 cited in Zeeland, 2017: 161). It is therefore not shocking that “a 2016 World Education Services (WES) report, *Improving the International Student Experience: Implications for Recruitment and Support*, finds that ““better education outside of my home country” is the top reason 70 percent of African respondents leave their

country of origin to enroll in institutions abroad” (Schulmann, 2017: Recommendations for U.S. HEIs Seeking to Increase African Students’ Enrollments section, para. 2).

This is not to say that the improvement of Africa’s HE institutions is a hopeless undertaking, nor that it should be abandoned. Quite the opposite is the case. Africa needs to develop its own formidable universities and other tertiary institutions, otherwise, its development will remain dependable on the West. Thus, it is essential for Africa to improve its higher education program to achieve independent sustainable development. At the same time, external support in this task can significantly speed up the process. This external support can be in form of funding but also in the form of encouraging and facilitating mobility of HE. So that “while Africa strives to strengthen its universities and develop its centers of excellence in various fields, mobility [can be used to augment] local capacity needs” (Jowi, 2017: para. 4).

How can mobility be used to support the African HE institutions? Most directly by “absorbing” the demand for HE and by providing access to HE abroad for students who otherwise would not be privy to it (Altbach & Knight, 2007: 294). Mobility can take more than one form and extends much beyond the concept of mobility of students from developing to developed nations. In fact, the positive effects inbound students can have on the existing education system are often underestimated. Therefore, programs to encourage exchange from industrialized countries to Africa can also prove to be very beneficial to African tertiary education programs, in terms of quality, diversity, prestige and gained income, all the while being beneficial to the participating students (Altbach & Knight, 2007). Mobility can also suggest the mobility of staff, to enhance the training and confidence of African professors or to improve the quality of African institutions by hiring excellent foreign staff. The problem with the latter, of course, remains the funding and the offer of a challenging research environment to hold on to the excellent staff. Consequently, some universities decide to apply mobility to curricula and institutions, in the form of direct partnerships with local programs, franchised degree programs or the establishment of branch campuses (OECD, 2017a; Altbach & Knight, 2007). One important aspect of this approach is to modify and adapt the curricula or branch campuses to the reality in Africa. If not, the exported curricula do not have relevance or set impossible expectations among the student body, concerning their following working conditions (Alemu, 2014; Friedman, 2004). The curricula for healthcare training, in particular, should be adjusted “to prepare graduates for the conditions

in which most will practice in Africa, including an emphasis on primary health care and common health problems. [...They should further be] re-oriented to include critical thinking and problem-solving.” (Freidman, 2004: 4). “The context and conditions in which science and technology are able to prosper require political decisions, funding, infrastructure, technical support, and a scientific community [as well as opportunities to use the knowledge economically]; these are generally unavailable in developing countries” (Dodani & LaPorte, 2005: 490). Mobility can support existing HE institutions in Africa, as well as help in expanding HE, to allow for a quicker realization of these goals. It is the basis for improving “governance, research methodology [and] policy making” (Alemu, 2014: 85), through improved education. In the long run, such improvements should lead to a more effective and stable government, which of course would benefit HE, and sustainable development. As long as emphasis is put on the context in which knowledge can and will be applied, “international higher education initiatives such as academic mobility of students and faculty, open educational resources, and international partnerships can help build capacity, enhance access, inform policy, strengthen curriculum, promote social cohesion, and broaden perspectives in African universities” (Sehoole & Knight, 2013: 2).

The Importance of Research

“Research in higher education has an initial target to improve the quality as well as process of education” (Sharma, 2014: Financial Assistance for Research and Higher Education section, para. 2). Research is considered “a central priority in higher education and an important instrument of the knowledge economy” (Alemu, 2014: 77). The resultant innovation is essential to progress sustainable development (White & Lee, 2009). It could provide solutions to existential problems, including climate change and food and water scarcity. Furthermore, it is a frontier for international academic exchanges, partnerships, and engagements (Jowi, 2017). Yet, as many African HE institutions accommodate twice the capacity they were meant for (see Sawyerr, 2004 cited in Zeelen, 2017) due to, as aforementioned, “explosion of population, poor funding of higher education, overcrowded classes, and poor teaching materials [Africa is facing] challenges to higher education that allow too little room for research activities” (Zeelen, 2017: 160). As of 2007, SSA had the lowest rates of scientific research publications in the world, with a contribution of only one percent to global knowledge, mainly because of their weak research capacities (Alemu, 2014; Jowi, 2017). This is in part due to the aforesaid scarcity of resources available to HE in Africa. It makes it more difficult to find the required equipment or to access or collect

sufficient data to conduct proper research. “Moreover, dissemination through publication and international conferences is a daunting task. The requirements of reputable Western journals, along with issues of research priorities and obtaining the required funding to participate in international conferences, are discouraging for African academics” (Alemu, 2014: 77). These restrictions have become less with the introduction of e-journals and open educational resources (OER), which include free e-libraries (Jowi, 2017; Altbach et al., 2009). Yet these new opportunities come with restrictions of their own, such as limited internet access⁴. In addition to these restrictions, African faculty and students often still suffer from the effects of colonial education, which has undermined their self-confidence and self-esteem (Zeelen, 2017). Zeelen describes the discomfort among African intellectuals with the concept of research in the following words: “Its legacy was also visible to me in the way some seniors who had obtained their degrees and titles in the old system were using the word “research” to intimidate the so called uneducated” (2017: 161). And Jonathan Jansen, the now Rector and Vice-Chancellor at the University of the Free State⁵ remarked that: “the sad reality is that most deans and heads of departments (and indeed many of our vice-chancellors) are such poor researchers themselves that they cannot make the (necessary) kind of demands on new researchers in the faculties for sheer lack of credibility” (Zeelen, 2017: 161). On top of that comes the insufficient number of “qualified editors and editorial staff; a shortage of publishable materials; a restrictive environment that inhibits freedom of speech; and a lack of commitment to and appreciation of journal production by university administrators” (see Damtew & Altbach, 2004 cited in Alemu, 2014: 78).

Internationalization and mobility of higher education could be a powerful tool to “increase the visibility of African universities in areas such as research and development, and increase the contribution that the institutions are making to the development of Africa, and open channels for Africa to benefit from the global stock of scientific knowledge” (see Ogachi, 2011 cited in Alemu, 2014: 79). Internationalization and mobility could strengthen research capacities at African Universities and could induce a more confident attitude to research, as well as equip the younger generation with better research skills, so that “the cycle of reproducing research mediocrity” (Zeelen, 2017: 161) can finally be broken. This could be

⁴ The benefits and limitations of technology in regard to research and HE in general will be explored in a later chapter (Technology and MOOCs).

⁵ The University of the Free State is a South African University.

achieved through transnational research partnerships. “In recent years, there has been growing interest in research partnerships with Africa not only from the traditional partners in the north but also by new entrants such as China, Brazil and India” (Jowi, 2017: para. 1). While this can have very positive consequences for Africa’s research capacities (See Zeelen & Van der Lindern, 2009 cited in Zeelen, 2017), as always, such collaborations need to be approached with caution. One major criticism of these collaborations in the past was that “significant intellectual benefits are [...] secured outside Africa” (Alemu, 2014: 79) and thus, the African partner in the collaboration often does not benefit to the same extent as the other country involved. Mobility is not the only substantial component in improving research capacities in African HE - improved access to technology can also enhance research capacities in Africa. The effects of technology will, however, be analyzed in more detail in a following chapter in this thesis.

“A strong research component would create the possibility of nourishing the teaching programs with new knowledge, experiences from elsewhere, and current academic debates” (Zeelen, 2017: 160). It could moreover be used to increase the number of inbound international students. As mentioned in the introduction of this chapter, mobility is not unique to students who do not have the option of quality education in their native country: it is also massively explored by students from developed nations to enhance their university experience with extra cultural understanding and language skills (Altbach & Knight, 2007). Once this cycle, of African research being able to attract a sufficient number of inbound international students, is established, there will be a steady additional flow of funding for the augmentation of Africa’s research capacities but also of Africa’s higher education system and everything that is connected to it, as well. One unique aspect of mobility which applies to research, in particular, is the outsider perspective. Kim found that often outsiders, in this case, international students, are often in the exclusive position to evaluate already existing research more objectively or from a different perspective (see THE, May 8, 2008; Seabrook 2009 cited in Kim, 2009). That can offer new findings to the research. Arguments like this could be used to create more incentive for joined research projects on a global scale. For the beginning, it might be more effective to focus on research areas where Africa has a natural advantage and which could induce economic development. One example for such a topic is solar energy production. With the EU goals for renewable energies, many western European countries have an increased interest in the research and development of renewable energy sources (German Federal Ministry of Education and Research, 2009). That, of course, includes solar

power. Africa is in an exclusive position for the creation of solar power due to the Sahara Desert. Collaboration between western Europe and particularly central Africa would, therefore, be logical and could create benefits for both parties involved. Other research opportunities include the exploration of raw material production, as many African countries are rich in natural resources. It would be sensible to focus specific research projects on specific African countries with most beneficial conditions for the research. Thus, focus solar energy projects on countries such as Chad and the Central African Republic while focus research into mining on South Africa and research on raw material production on raw material rich countries such as the Democratic Republic of the Congo (DRC).

Quality and Accreditation Assurance

As aforementioned in regard to overcrowding, the quality of African higher education institution suffers substantially under the increasing demand for HE and the shortage of resources to accommodate it. Many African countries, particularly SSA countries lack a basic stability and effectiveness in government. Although many are socially stable enough to avoid civil war and major crises, the administrative structures are clearly not established, nor funded enough to handle the list of problems Africa is juggling at the moment. This also suggests that it is very likely that African governments do not have the same quality of education assurances in place, as most developed nations do. Nor do they have the resources to ensure their implementation and regular observation on a national level, yet alone a global level. Many African nations, such as Uganda are already struggling with “debatable” degrees within their own country (Zeelen, 2017: 160). Now, however, through mobility, this problem is stretched out to a global scale. Quite often regulatory frameworks for the quality of education or for the assurance of accreditation do not even exist for cross-border education (Altbach & Knight, 2007). With the mobility of students comes the issue of quality assurance, as well as the problem of accreditation of credits and degrees that were completed over several institutions, possibly across different countries or continents. How can cross-border academic achievement be properly monitored and assessed, especially if there is a lack of resources, to begin with? The loopholes in the current answer to these issues are extensive, as they permit “bona fide and rogue foreign providers to avoid compliance with national regulations in many countries and makes monitoring their activities difficult” (Altbach & Knight, 2007: 300). In fact, the International Association of Universities’ (IAU) global survey from 2005 identified “the increase in the number of foreign degree mills and low-quality providers” (Khorsandi Taskoh, 2014: 35), as one of the three main risks from the

internationalization of higher education. Bona fide national and international accreditation agencies are now represented in many countries, through the commercializing of the accreditation process (Altbach & Knight, 2007). US accreditors, for example, are active in more than 65 countries. However, not all of these organizations will always offer an objective assessment, as there might be a stronger incentive to “[race] for accreditation “stars” than [to] improve quality” (Altbach & Knight, 2007: 301). Even more dangerous are the so-called “degree mills”, which outright sell certificates and degrees with no or minimal course work” (Altbach & Knight, 2007: 301). The issue of false accreditation or degrees is not only applicable to far-reaching programs but can be witnessed across borders within SSA as well. One predominant example is Ghana. According to official estimates, Ghana is the “third leading destination country for globally mobile students in Africa” (Schulmann, 2017: Higher Education Destinations for African Students section, para. 3). Especially Nigerian students, who make up for a majority of all African mobile students, with 71 351 mobile students compared to 1.4 million students enrolled within the country (as of 2015), emigrate to Ghana to study (Gu, 2017; “La Mobilité Internationale des Étudiants Africains”, 2017). Yet, the quality of HE in Ghana suffers from the same fast expansion, as in most other SSA countries. The quality issue applies particularly to the approximately 50 private institutions in Ghana (Fatunde, 2014). Some of the issues with 49 of these private tertiary institutions listed by Fatunde, which were discovered in investigations following the death of a Nigerian student in Ghana, include: “[mostly absent] quality control mechanisms [...], weak infrastructure, with institutions housed in rented, inadequate and in some cases incomplete structures, *and* prospective students do not have to possess required numbers of credits before being admitted: such students register for remedial courses to make up the shortfall while simultaneously undertaking undergraduate courses“ (2014: Media Highlights Problems section, para 8). In said investigations, it was also found that some Ghanaian academics, of public universities, have always been suspicious about the academic quality of the private institutions, yet this information had never made it across the border to Nigeria until recently.

Ghana is not an exclusive case of absent educational quality. “According to the Academic Ranking of World Universities (ARWU), only two of the top 500 universities in the world are in Africa, both in South Africa” (Schulmann, 2017: Recommendations for U.S. Seeking to Increase African Students’ Enrollments section, para. 2). It is, therefore, essential that more emphasis is placed on this issue of lacking or outright false accreditation. “Students, employers, and the public need to be warned about these accreditations (and

degree) mills, which are often Web addresses outside the jurisdiction of national regulatory systems” (Altbach & Knight, 2007: 301). There are ongoing efforts towards “harmonization of different country’s systems of higher education and the development of quality assurance and credit transfer systems that would be useful for enhanced internationalization both within Africa and with other partners” (Jowi, 2017: para. 5). Some of these efforts try to develop similar models, such as the European Bologna process to create a better system to monitor quality and accreditation. Other implementations to fight the issue at hand is the Pan African University (PAU), which is a post-graduate training and research network as part of a “continental initiative to revitalize higher education and research in Africa” (Pan African University, 2017: Research and Education for a Peaceful, Prosperous and Integrated Africa section, para. 1). A clear trend towards more regional initiative in the matter can be observed through the respective regional university associations of the East African Community (EAC) and the Southern African Development Community (SADC). In addition to that, it can be seen that other assessment organizations are slowly broadening their reach, including the Assessment of Higher Education Learning Outcomes (AHELO). This organization carries out feasibility studies to test what students are able to do upon graduation (OECD, 2017b). This more result oriented approach might further create more impartial supervision on a global scale for higher education programs, which are affected by internationalization. “Social confidence in higher education demands giving priority to defining the roles and responsibilities of all players involved in quality assurance—including individual institutions and providers, national quality-assurance systems, nongovernmental and independent accreditation bodies, professional associations, and regional or international organizations. Their roles defined, these players must collaborate to build a system that ensures the quality and integrity of cross-border education” (Altbach & Knight, 2007: 302).

Profit as The Main Incentive

It is important for an accurate discussion of the topic of mobility and internationalization in general, to distinguish between the traditional non-profit universities and profit-driven programs. Both can be found on the international market, yet the main distinctive characteristic that divides the two is the principal motivation for their participation in the internationalization of higher education. According to a survey by Knight, held in 2006: non-profit tertiary institution’s motivation is not financial (Altbach & Knight, 2007). “Instead, they wish to enhance research and knowledge capacity and to increase cultural understanding” (Altbach & Knight, 2007: 292). Due to the commercializing of

internationalization of HE, many other forms of institutions or even national policies are now aimed more at the profits, which can be generated through the recruitment of international students. This can be witnessed by a shift in the use of international cooperation projects for “status-building initiatives and the augmentation of revenue” (Alemu, 2014: 74), instead of development and capacity building. Apart from the ability to charge higher fees from international students, the globally mobile students can also be used as cheap labor for research and teaching services (Altbach & Knight, 2007). Naturally, this “increasing emphasis of internationalization on marketization/revenue rather than on capacity building has directly affected quality and equality” (Alemu, 2014: 75). Apart from the loss in quality, the loss in equality is possibly even worse. Once this potential for revenue increase was discovered, a shift in leadership style for universities could be perceived. Nowadays, “British university leadership is often recruited from abroad or among corporate managers” (see Kim 2006: 204–17 cited in Kim, 2009: 400). A trend that is not unique to the UK. In fact, SSA is also not above this phenomenon. As said, Ghana is one of most commonly frequented countries for mobile African students and their institutions stand to gain considerably from it. The roughly 71 000 Nigerian students estimated to study in Ghana are paying nearly US\$1 billion annually in tuition fees and upkeep (Fatunde, 2014). While this is comparatively little as to what universities and economies of developed nations are making of internationalization, it is nevertheless a sum not be scoffed at. As aforementioned, the profit incentive is not limited to HE institutions. Governments are unlikely to undermine this trend from an economic standpoint, as the nation’s economy stands to benefit substantially from the living expenses of international students during their stay. So, the US economy earned an estimated US\$12 billion directly in 2003, while the UK benefited by close to £11 billion directly and a further £12 billion indirectly annually as of 2007 (see Davis, 2003 cited in Altbach & Knight, 2007; Kim, 2009). For the UK, these revenues generated through internationalization of education are comparable to the export of oil and financial services, which gained the UK economy £14.3 billion and £13.6 billion, respectively in 2002 (Kim, 2009). The incentive of revenue as the key motivation for internationalization highly restricts equitable access to it and “the transnational flows of academic mobility” (Kim, 2009: 399). For developed nations, there is increased uncertainty in employment in academic institutions, as short-term contracts become more usual (Kim, 2009). Yet, those that stand to suffer the most, are developing and emerging nations. Especially developing regions participation in global HE is strongly confined by the high costs of HE abroad (see Damtew, 2014 cited in Alemu, 2014). A 2015 World Education Services (WES) report (How Master’s Students

Choose Institutions: Research on International Student Segmentation), among others, “indicates that prospective international students from Africa were much more likely than other respondents to cite cost as the most important attribute in determining which programs to attend” (Schulmann, 2017: What is the Potential for Attracting Additional African Students to the U.S. section, para. 4). In fact, the cost is the most deciding factor for 30 percent of SSA respondents, which is about twice the average percentage. Many students are deterred from seeking out excellent universities because they are not confident they can afford the costs associated with it (Schulmann, 2017). The students that try anyway, often struggle with maintaining the costs throughout their studies. The aforementioned WES survey from 2015 identified the *cost of living expenses* and *cost of tuition fees* to be the two main challenges faced by 71 percent of African students abroad (Schulmann, 2017).

It is very difficult to solve the problem of profit-seeking institutions in HE. One way to limit the negative consequences would be to place greater emphasis on quality standards in global education. This way universities that want to attract students, and their money, through rankings, will at least have to guarantee excellent quality of education. The quality could also be ensured if universities were linked to resultant job opportunities by an independent party. Statistics about what jobs were achieved and held with the accomplished degree would ensure that universities would provide for their students.⁶ Another option is to highlight the benefits cultural diversity can contribute to the overall program. “African students can bring an invaluable perspective and drive to campuses, say university leaders who have worked with recent cohorts of students from Africa” (Schulmann, 2017: What is the Potential for Attracting Additional African Students to the U.S. section, para. 2). This might incentivize universities to provide more scholarships or engage in more research and knowledge cooperation with African universities, in order to increase their attractiveness to wealth globally mobile students. Lastly, government policies in favor of more accessible international higher education can help as well. Due to the economic promise and the threat of increasing number of refugees, governments might be more incentivized in the future to

⁶ This might not be the most accurate insurance of quality, as certain western Universities have accomplished brand like names, including Harvard, Oxford, MIT, etc. These universities while undoubtedly excellent are not the only excellent academic institutes in the world. Younger universities might not benefit from the same powerful alumni and could therefore not guarantee the same job opportunities, while still providing excellent education.

support improved education and resulting sustainable development in Africa, even from a largely selfish motivation. China, for example, has made “a concerted effort to attract post-secondary African students, both for degree programs and for vocational and shorter term programs” (Schulmann, 2017: Higher Education Destinations for African Students section, para. 3). To the extent that in 2016, African students made up for 12.5 percent of China’s total international student population. This interest stems mainly from economic implications: The Chinese have heavily invested in African infrastructure and other important developmental sectors, and have “an interest in Africa’s natural resources, including oil and copper” (Gu, 2017: Six Decades of Sino-African Educational Exchange section, para. 1). As suggested above, when such Africa particular niches exist in the market, they should be focused upon to extend research connections and funding. “These considerations [...as well as other political implications...] form the backdrop for China’s increased interest in the post-secondary qualifications of Africans” (Gu, 2017: Six Decades of Sino-African Educational Exchange section, para. 1). This reasoning could also be applied to other countries, especially English and French speaking countries. As aforesaid the language barrier can be a substantial handicap for cooperation, hence countries that are not affected by it already have an advantage. Incentives such as these should limit the negative and restrictive effects profit-seeking practices have on sustainable development in Africa.

Although mobility still needs improvements concerning quality and accreditation assurance, and adaptations of international curricula to the individual African country’s situation, it can overall be marked as a positive development. It can be compared to a support system to the African HE development. It allows African students to receive an excellent education and augments local capacity needs, while Africa aspires to strengthen its local institutions and world contributions in knowledge finding and research (Jowi, 2017). In addition to just the support or substitute for lacking resource in Africa, mobility also helps enhance individuals’ confidence and abilities, providing Africa with improved new generation of professionals (Alemu, 2014), who will be essential in revolutionizing Africa’s HE programs and in inducing sustainable development for the continent. For instance, research has shown that mobility of HE increases women empowerment and gender equality in developing nations. Sehoole and Knight listed a number of studies that support this claim. One of them concerned these developments through internationalization of HE in Kenya and Cameroon (2013). “Results indicate that [...] the very nature and structure of these social constructs [of gender and culture] have become increasingly dynamic, with the influence of

globalization and internationalization destabilizing prevalent conceptualizations and introducing change through the hybridization of culture” (Sehoole & Knight, 2013: 7)

Mobility among African students can affect “the conceptualization of normative gender roles by both female and male students” (Sehoole & Knight, 2013: 8) positively, although only to a limited extent. Further diversification of destination countries (“The International Mobility of African Students”, 2016) can be helpful in counteracting some of the negative social and cultural impacts, internationalization of HE is criticized for causing. Common critiques include “the destruction of cultural heritage, diminished language diversity, [and] reduced variety in academic cultures and structures” (see Teichler, 2004, Knight, 2013 cited in Alemu, 2014: 74). It is further interesting to recognize that mobility is by no means a recent phenomenon and the benefits that had been derived from it then have re-shaped Africa in the past (Jowi, 2017). Many of Africa’s independence leaders, including Jomo Kenyatta in Kenya, Azikiwe in Nigeria and Kwame Nkrumah in Ghana, either studied or strategized abroad, greatly impacting the independence movements within their respective countries. Arguably without this mobility, “independence may have occurred much later [...] in many African countries” (Easterly & Nyarko, 2008: 4).

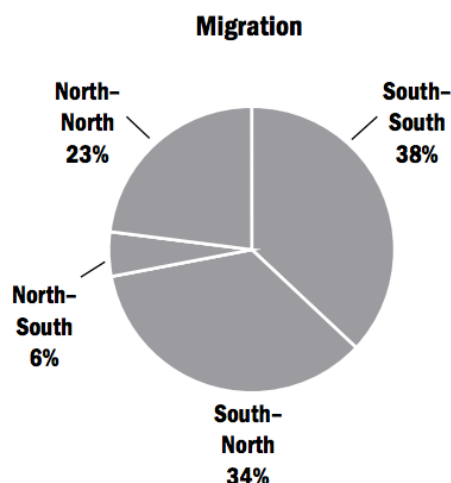
Accounting for the many positive impacts, it should be considered how mobility, under the considerations deliberated in this chapter, can be further encouraged and made more easily available. One big impact on the mobility of students is government policy. Easier immigration policies and visa applications can facilitate the mobility of African students particularly to developed nations substantially (Kim, 2007; Sehoole & Knight, 2013). On the African side, policies encouraging cross-border cooperation can encourage more joined research ventures and inbound knowledge with and to African nations. Further gender policies have been shown to be effective in increasing the number of female African students, who participate in the internationalization of HE and student mobility (Sehoole & Knight, 2013). In addition to that more scholarship opportunities made available by universities, governments, and other international organizations would increase the equity in mobility of HE.

Brain Drain

Mobility in HE permits many Africans to pursue an education, which they would not be privy to in their own countries or without foreign influences. Yet on the negative side, these educated and skilled migrants might leave and never return to their native countries (Dodani & LaPorte, 2005). This issue resulting from mobility in higher education is referred to as human capital flight or more commonly known as brain drain. Brain drain is defined as “the departure of educated or professional people from one country, economic sector, or field for another usually for better pay or living conditions” (Merriam-Webster, c2017: n.p.). Doadani and LaPorte identified higher education as “one of the principal conduits of permanent emigration” (2005: 487). Brain drain is no small side effect of internationalization of HE either. It was branded by the 2003 International Association of Universities (IAU) report on HE as the “number one risk for Africa” (Alemu, 2014: 12). It is important to acknowledge that brain drain does not only occur from developing to developed nations, in literature often referred to as South-North movement but also can be seen among developing nations (South-South).

Figure 3: South –South migration versus South –North Migration

(Rhata, Eigen-Zucchi & Plaza, 2016)



Sources: World Bank staff calculations; UN Population Division 2013; and national censuses.

Note: Definition of the “North” and the “South” in this chart follows UN classification. The data on migration are for 2013, the latest year for which data are available. The data on remittances are forecasts for 2015. According to the UN, the term “North” refers to countries or regions traditionally classified for statistical purposes as “developed,” while the term “South” refers to those classified as “developing.” The developed regions include Europe and North America plus Australia, New Zealand, and Japan. Using World Bank classification of Developing Countries as “South” and High-Income Countries as “North” implies that South-South and South-North migrants constitute 56.4 million (23 percent) and 128.6 million (52 percent) of total international migrants, respectively.

However, this chapter will focus on South-North migration, as it is usually identified as more damaging and occurs very disproportionately in comparison to North-South migration, which can be seen above in figure 3.

In fact, every third African student who went to study abroad in the UK or the USA did not return after the completion of their degree. Although this does not exclude the possibility of a return in the future, it does mean that currently every 9th African with higher education is living in a developed nation - a 50% growth in the last 10 years, significantly higher than any other region in the world (Rybak, 2017; Frising, 2016). This phenomenon is not new, although it has been growing exponentially in the last decades. According to a World Bank report in January 2014, “African migrants have doubled between 1980 and 2010 reaching 30.6 million [... which accounts for] around 3% of the continent’s total population (Frising, 2016: the Introduction section, para. 3). One sector that suffers particularly from the consequences of brain drain, is the healthcare sector in Sub-Saharan Africa. An especially dire example is Zimbabwe, where 9 out of 10 of the nation’s doctors are working abroad (Rybak, 2017). The shortage of healthcare personnel was just recently all too clearly highlighted by the latest Ebola crisis. Liberia, one of the countries most impacted by the Ebola crisis in 2014 used to have 7.76 doctors per 100.000 people in 1973, which decreased to 1.73 doctors for the same amount of people in 2008 (Frising, 2016). The problem of limited healthcare personnel, on top of lacking infrastructure and resources, is not unique to Liberia but can be seen in most of SSA countries. This is most dramatic in rural areas (Friedman, 2004). In Lamu, a mostly rural province in Kenya, there is currently only one doctor remaining for the over 100 000 citizens (Frising, 2016).

Push and Pull Factors

All these terrifying statistics, lead up to the important topic of what can be done to better control the brain drain in Africa? To answer that question, it is essential to understand the mechanisms of brain drain first. It consists of two different categories of factors: push and pull. “Push factors [...] include low salaries and benefits, unsafe working conditions, inadequate human resources [...] and insufficient professional development opportunities” (Friedman, 2004: 3), or more generally the promise of “better standards of living and quality of life” abroad (Dondani & LaPorte, 2005: 487). Pull factors refer to the direct recruitment of skilled labor from developing countries by developed nations (Friedman, 2004). Certain measures have already been taken up against the latter. The UK, for example, has issued a list

of countries, including most African countries, from which recruitment of nurses is banned (Easterly & Nyarko, 2008). Other bans on the direct recruitment of staff from developing nations exist as well, however, all have shown very limited success (Dean, 2005). One way to reduce brain drain would, therefore, be to promote more ethical recruitment from developing nations, including the introduction of legislation, which outright forbids recruitment from developing nations unless an official agreement exists between the nations (Friedman, 2004).

The push factors are more often addressed by international organizations and literature on the subject, as their possible solutions are much more complex. There are many different approaches trying to improve social, economic or political factors to increase the incentive for professionals to remain in their native countries. Many focus on what developed nations can do to reduce brain drain. For once, they could provide more funding and allow for debt relief to improve infrastructure and economic sectors, specifically the health sector (Friedman, 2004). Many educated emigrants leave because they are not equipped with adequate resources to perform well in their professions. With additional funding (and debt relief) African nations could try to create more and improved job opportunities, as well as better working conditions for the available work in Africa. This would create more incentive for educated personnel to stay in the country. In addition to more funding, a better structuring of foreign aid is needed (Friedman, 2004). The problem with foreign aid is that it is usually spread too thin over several different sectors that require support. It would be more beneficial to prioritize essential sectors, such as healthcare and basic education and then to start building on top of them once they have achieved a solid status. It could also be effective to at first treat Africa as one entity and to build up different sectors in different nations. Strong agricultural nations can primarily invest in (HE regarding) agricultural development and mining heavy nations could do the same for their mining industry. This way more specialization is possible at a lower cost. South to South cooperation and mobility would avoid the need to develop each African nation equally, while still ensure equal benefits and development to all. This, however, requires steady investment and African countries often lack the political influence or economic power to ensure a steady inflow of foreign aids from developing nations. Under the current situation, African countries are more at the mercy of developing nations will to donate and provide support, without having much say in the matter. There are signs for change: industrialized nations are starting to realize the benefits of actively supporting sustainable development in Africa, either to create a new market for their exports or to find a

long-term solution to the refugee crises in Europe (Doll & Geiger, 2017). More foreign companies, particularly of Chinese origin, start to invest in African development and HE to create more favorable conditions for their branch businesses situated on-site (Schulmann, 2017). In addition to increased economic interest, politicians of Western European countries are slowly realizing that the refugee crisis of 2015 was only the beginning unless perspective is created for people in their native countries. This, of course, includes many African countries. Thus, in Germany, a *Marshall Plan* for Africa is currently in the making (Doll & Geiger, 2017). Hopefully, this will lead to a more steady and organized stream of funding in the future. However, even then corruption in African government would still very much reduce the efficiency of attributed funding. Thus unless, the distribution of funding would also be overseen by an independent party, which of course conflicts with nation's sovereignty, simply providing funding might not be enough to bring about great improvements.

Another suggestion to impact pull factors is the reimbursement from developed nations to developing nations for the educated labor force that emigrated from Sub-Saharan Africa. "The intellectuals of any country are some of the most expensive resources because of their training in terms of material cost and time, and most importantly, because of lost opportunity." (Dodani & LaPorte, 2005: 487). University costs alone lie at around 15.000 US dollars in Kenya, the training for a doctor at around 40.000 US dollars (Tebeje, 2011). In addition, African countries are faced with the high cost of the wages of foreign workforces needed to fill the vacant positions left by African emigrants (around 150.000 jobs in South Africa) (Rybak, 2017). Reimbursement for the *stolen* talent, could in the least return these costs to the African governments, as well as potentially provide more funding to enhance the in-country education and work conditions. Here similar limitations, as for increased funding, stand in the way of the reimbursement for talent. In theory, it is a rather solid plan, as many numbers to calculate an accurate reimbursement sum are openly available. Yet, it is unlikely that big global players who currently benefit from African brain drain, such as the United States, would agree to such an arrangement. Once again Africa and its individual nations have no means of coercing an unwanted reaction. Even big international organizations, such as the United Nations, are too heavily influenced by the US (Puchala, 2005; Kuziemko & Werker, 2006) to effectively implement a reimbursement policy.

A more realistic approach would, therefore, be, to offer scholarships with a return clause. This way African students get to benefit from the often more superior education abroad while committing themselves to apply the acquired knowledge to the benefit of their native country's development - at least for a certain time period after the completion of their studies. This system could further be used to influence the subjects studied. Arguably some degrees are more valuable for sustainable development than others. The government could identify the subjects most beneficial to their respective country's development, such as medicine for example. The scholarships provided would then only extend to the identified subjects. "Most African students prefer to travel to the global north, to be enrolled as undergraduate rather than graduate students, and to study humanities and social sciences rather than natural sciences, engineering, and technology and health sciences" (Alemu, 2014: 81). The government intervention via scholarships could help reshape this trend and ensure a stronger contribution of internationalization to sustainable development (Alemu, 2014). Further incentive to return, could be achieved if governments of developed countries would be willing to provide a *start capital*, a fixed sum of a few thousand dollars, to all Africans willing to return. This way, returning migrants are given more economic opportunity and the international support does not need to pass through the often corrupt African governments.

One example for a scholarship program with return clause is the BEBUC⁷ excellence scholarship between the university of Kinshasa in the Democratic Republic of the Congo (DRC) and the University Würzburg in Germany. The program is, though still comparatively small scale, quite successful and is currently extending to other universities in the DRC. This scholarship is especially focused on training Congolese teachers abroad and have them return to advance the academic level at Congolese universities (Förderverein Uni Kinshasa, c2017). Theoretically, this is a good way to ensure that the native country will benefit from mobility. However, it is impossible to bind people forever to one country based on a scholarship. If people want to leave, they will leave, especially when they are not presented with enough opportunity upon their return. It is thus essential to develop the economy in parallel with HE. The lack of opportunity does not explicitly refer to HE. Returnees with a degree may find no work or work under conditions, which do not allow for a good standard of living (Zeelen,

⁷ Bourse d'Excellence Bringman aux Université Congolaise. For more information see Förderverein Uni Kinshasa. (c2017). *Excellence Scholarship BEBUC*. Retrieved 28 April, 2017, from http://www.foerderverein-uni-kinshasa.de/?page_id=4

2017). With the scholarship, it might take longer for people to leave but essentially, they cannot be stopped. Therefore, conditional scholarships need to be combined with the aforementioned Marshall Plan for Africa, to create opportunity upon return. Further, it might not be in every foreign universities best interest to offer conditional scholarships. The BEBUC is based on a more idealistic and demonstrate approach good effect with little direct investments. However as will be discussed in more detail in the following chapter, many universities, particularly in the United States are more profit oriented. Profit-seeking, whether it is from an individual university or a nation, does not really go hand in hand with a conditional scholarship. Apart from profit-seeking, universities, of course, look for great minds. This suggests that brilliant people, from developing countries also, might have a greater choice in scholarships, or at least a certain bargaining power, resulting in the most valuable talents avoiding conditional scholarships most easily.

Other policy proposals focus more on what African nations can do better to hold on to their elite. Since the rights of any person to seek a better life must be respected, it would be ethically insupportable to simply forbid professionals to leave the country (Friedman, 2004; Easterly & Nyarko, 2008). Instead, Miyagiwa proposes taxation, which should discourage emigration: either the Bhagwati tax proposal or an emigration tax (1991). The former is aimed at the taxation of incomes of professional emigrants. This can still be seen as a rather radical and morally ambiguous way to limit the brain drain, which could be partially justified by Miyagiwa's findings on the consequences of the brain drain, and the resulting urgency for professionals to remain in African countries in sufficient numbers. According to Miyagiwa's model "professional work increases with an increase in the number of similar professionals concentrated in one location" (1991: 745). In other words, the more talented people leave the country, the worse off are the people left behind due to lack of economies of scale in education. Economies of scale refers to the "cost advantages that arise with increased output of a product" (Investopedia, c2017: n.p.). Regarding education, this refers to following the assumption: the more educated professionals in one location, the higher the academic outcome of these professionals. This can be and has been empirically proven. For example, "it has been estimated that [in 2005] foreign scientists from developing countries, who are involved in research and development produce 4.5 more publications and 10 times more patents than their counterparts at home" (Dondani & LaPorte, 2005: 489). Thus, under the assumptions of this model, for sustainable development to occur, the African nations must ensure that enough knowledge stays or flows back into their country for economies of scale

to occur in education and to prevent a dangerous downward spiral: Talents leave for higher wages abroad, which decreases the effect of higher education further, that in return leads to more brain drain. This essentially leads to an even larger income gap between the south and the north, and also encourage further South-North migration (Miyagawi, 1991).

Yet, even under these circumstances, taxation remains an ambiguous solution. Firstly, there will always be “legal and technical problems of tax collection” (Miyagiwa, 1991: 757), especially for a tax in a global context. The administration costs alone for such a venture would reduce the gained benefits substantially. Secondly, it will only prevent less able professionals from leaving the country, as excellent professionals will likely face enough prospects and job security abroad to consider the benefits worth paying an extra tax. Thus, the most valuable assets will not be guaranteed to stay. Neither will there be a guarantee that enough educated professionals remain for economies of scale to be applicable. Thirdly, there is the question of how best to use the tax revenue, where once again government corruption should be considered. The revenue could either be used to support the lowest income families, be distributed to the educated people with the highest risk of emigrating (Miyagiwa, 1991) or be invested in the economic development of defining national sectors. In the first case, brain drain will most likely remain unaffected in the short to medium run, as the people given the money were the least likely to emigrate in the first place. Thus, development is unlikely to occur to a sustainable degree. In the second case, brain drain could be decreased as an additional monetary incentive is provided to professionals to remain put. As a result, it is the more probable scenario to lead to sustainable development in the country. The emigration tax is expected to have quite similar effects to the Bhagwati tax, as it decreases the incentive for skilled labor to leave the country by increasing the costs of leaving. Just like with the Bhagwati tax, the revenue could be used to either to support the poorest part of society or to further create an incentive to stay for professionals with the highest risk of being drained.

Could Brain Drain Be Good?

So far, the chapter has solely analyzed brain drain under the assumption that it is something completely negative. It is important to take a closer look at the phenomenon that is brain drain and ask whether truly everything related to brain drain is bad (with the possible taxation of emigrants as the only exception and the only way to benefit from brain drain)? More than one research paper has identified positive aspects to brain drain. Firstly,

Miyagiwa's model shows that if only the best professionals emigrate, the surplus they receive in wages and utility working and living abroad should be able to offset any negative consequences⁸ created by them leaving (1991). However, this does not occur in praxis – the negative consequences of brain drain outweigh the benefits for the individuals that left – because it is not only excellent professionals who emigrate. Miyagiwa found that professionals with intermediate-level abilities are always hurt by the brain drain, whether they choose to emigrate or not (1991). So, in addition to the loss of income and opportunity for the remaining professionals in Africa, less excellent emigrants suffer from the brain drain even when living abroad. These are people, who are over qualified for the work they end up doing in the developed nations they have emigrated to, but still live a more comfortable life than they would under the same circumstances in their home country. For example, a taxi driver in the US usually manages to achieve a higher living standard than a taxi driver in Sub-Saharan Africa. It is this group of emigrants in particular that render the tax policies, mentioned previously, ineffective. Not merely for only preventing less abled professionals from leaving, while excellent people will unlikely be impacted by the tax but also because taking into account these emigrants, the taxation of emigrants “to rectify the inequity engendered by brain drain cannot produce an equitable result” (Miyagiwa, 1991: 758). Thus, other approaches might be more effective in restricting the negative effects of the brain drain in Africa. For once Kwok and Leland identified asymmetric information as another significant reason for the wage gap between industrial countries and African nations (Miyagiwa, 1991). Furthermore, the representation of developed nations is generally not realistic in developing countries. Many migrants often have unachievable expectations for their lives abroad. It could, therefore, already be helpful if better communication were to exist between African and developed nations. Another additional way to reduce the consequence of brain drain is to enhance methods of brain circulation. Reduction of cultural and linguistic gaps, as well as better communication and increased access to technology, allow for emigrated professionals to share their gained knowledge with their native people, without

⁸ Miyagiwa identifies these negative consequences as: lower wages for skilled labor that remained, lower wages for not excellent labor that left and an increased discentive to get higher education in the native country due to the lower wages brought on by the brain drain. For more information see: Miyagiwa, K. (1991). Scale Economies in Education and the Brain Drain Problem. *International Economic Review*, 32(3), 743-759. doi:10.2307/2527117

having to give up their accomplished life abroad (Dodani & LaPorte, 2005). This brain circulation faces limitations, in regards to availability of technology and infrastructure in developing countries, and the fact that it won't solve the shortage of present professionals, especially concerning the healthcare sector. Yet, it allows for a more sustainable way of mobility of education. It makes some economies of scale in education possible, even with occurring brain drain, and cuts the losses of opportunity.

While Miyagawi argues that the loss of economies of scale in education, reduces the incentive for education in Africa with increasing brain drain, Easterly and Nyarko argues that brain drain and the promise of a better life abroad can also be a strong incentive to place greater value on education – enough so to even offset the skill loss caused by the brain drain (2008). In fact, it might also impact governments to divert more focus and resources towards education, to better the home conditions and prevent promising talent from leaving the country (Easterly & Nyarko, 2008). With this different outlook on brain drain, it must be weighed carefully if mobility and its positive effects on sustainable development in Africa are worth the negative aspects of brain drain and if brain drain could not just be considered the economic phenomenon of surplus supply. As mentioned several times throughout this chapter, brain drain is stimulated by the lack of infrastructure, acceptable wages and job opportunities in African countries - generally speaking, most African countries currently lack the capacity to make full use of all their skilled professionals (Easterly & Nyarko, 2008). In this light brain drain could possibly be a more effective use of the migrants' skills, and while it has a negative effect on the (public) good provision in developing countries it does lead to one essential benefit for African individuals remaining, as well as African nations as a whole: remittances!

Remittances

Remittances are a big part of brain drain and play a large role in sustainable development in developing nations. "A remittance is the funds an expatriate sends to their country of origin via wire, mail, or online transfer." (Investopedia, c2017, n.p.). Many African expats express a desire to maintain ties with their native countries, which is, among others, shown in money sent back to families and communities in the country of origin (Easterly & Nyarko, 2008). Remittances have large positive effects: "For households, they are a lifeline, improving the recipient's standard of living; for economies, they are a source of foreign exchange, increasing spending, contributing substantially to GDP and expanding

usage of financial services” (Engels, 2015: Introduction section, para. 1). “Cross-country analysis and evidence from household surveys show that remittance receipts are associated with reductions in poverty, increased household resources devoted to investment, and improved health and education outcomes. Migrant remittances help smooth household consumption and act as a form of insurance for African households facing shocks to their income and livelihood caused by drought, famine, and other natural disasters” (Mohapatra & Ratha, 2011: 2). A World Bank report in 2015⁹ found that every additional African migrant creates approximately 2.100 dollars annually in additional exports for his or her country of origin (Frising, 2016). Remittances are higher than the Official Development Assistance (ODA) and more stable than private capital flows (Worldbank, 2017). As such, they are very important for Africa’s sustainable development. “On average, remittances amount[ed] to 81 percent of foreign aid, 13 percent of exports, and 3.2 percent of GDP [worldwide in 2008]” (Easterly & Nyarko, 2008: 24). It is very important to acknowledge the fact, that the above-listed numbers, only account for the officially measurable remittance and are thus much smaller than the actual remittances, as they are difficult to be measured accurately (Easterly & Nyarko, 2008; Mohapatra & Ratha, 2011). But even these official numbers can account for the cost of education¹⁰.

More recent data, suggests even higher growth in remittance rates for SSA, with most recent estimates for 2017 at +3.3 percent (Worldbank, 2017). “Remittances to Africa equaled 2.6 percent of GDP in 2009, higher than the average of 1.9 percent of GDP for all developing countries” (Mohapatra & Ratha, 2011: 4). Yet, SSA remains the region with the lowest absolute remittances, with a mere estimated US\$34 billion in 2017 in comparison to US\$76 billion in Latin America and the Caribbean and over US\$100 billion in each South and East Asia (including the Pacific) (Wordbank, 2017), see figure 4. This can be partially explained by the circumstance, that the brain drain is numerically small in Africa compared

⁹ Migration Foster Exports– World Bank Report from 2015, cited from Frising, S. (2016). *How severe is Africa's brain drain?*. Retrieved 21 April, 2017, from <https://qz.com/599140/how-severe-is-africas-brain-drain/>

¹⁰ Based on Easterly and Nyarko’s findings that: “so long as the remittances of the typical person exceeds 30% of GDP per capita, the remittances exceed cost” (Easterly & Nyarko, 2008: 26).

to other regions in the world. However, partly it is also due to the fact that “the cost of sending remittances to Africa, and especially within Africa, is among the highest among developing countries” (Mohapatra & Ratha, 2011: 3).

Figure 4: Estimates and Remittance Flows of Developing Countries as of 2015
(Ratha, 2016)

	2010	2013	2014	2015	2016e	2017f	2018f
	(\$ billions)						
Low and Middle Income	339.0	425.7	442.7	438.6	442.0	457.3	473.4
East Asia and Pacific	94.1	113.4	121.8	126.7	129.4	134.4	139.7
Europe and Central Asia	37.4	55.2	51.8	40.1	38.5	41.1	43.7
Latin America and Caribbean	56.5	61.8	64.1	68.3	72.6	75.3	78.1
Middle-East and North Africa	39.0	50.0	54.3	51.2	52.0	53.7	55.4
South Asia	82.0	110.8	115.8	117.7	115.0	117.6	120.3
Sub-Saharan Africa	30.1	34.5	34.9	34.6	34.4	35.3	36.1
World	462.1	574.0	596.6	580.6	585.1	606.4	628.8
<i>Memo: Low and Middle Income (previous income classification)*</i>	332.9	418.3	434.3	431.2	435	449.8	465.3
	(Growth rate, percent)						
Low and Middle Income	11.4	5.2	4.0	-0.9	0.8	3.5	3.5
East Asia and Pacific	20.0	6.8	7.4	4.1	2.1	3.8	4.0
Europe and Central Asia	5.1	18.0	-6.2	-22.5	-4.0	6.7	6.4
Latin America and Caribbean	2.6	2.2	3.8	6.5	6.3	3.7	3.8
Middle-East and North Africa	18.2	2.5	8.6	-5.7	1.5	3.3	3.2
South Asia	9.4	2.6	4.5	1.6	-2.3	2.2	2.3
Sub-Saharan Africa	9.6	0.4	1.0	-0.8	-0.5	2.5	2.3
World	8.5	5.3	3.9	-2.7	0.8	3.6	3.7

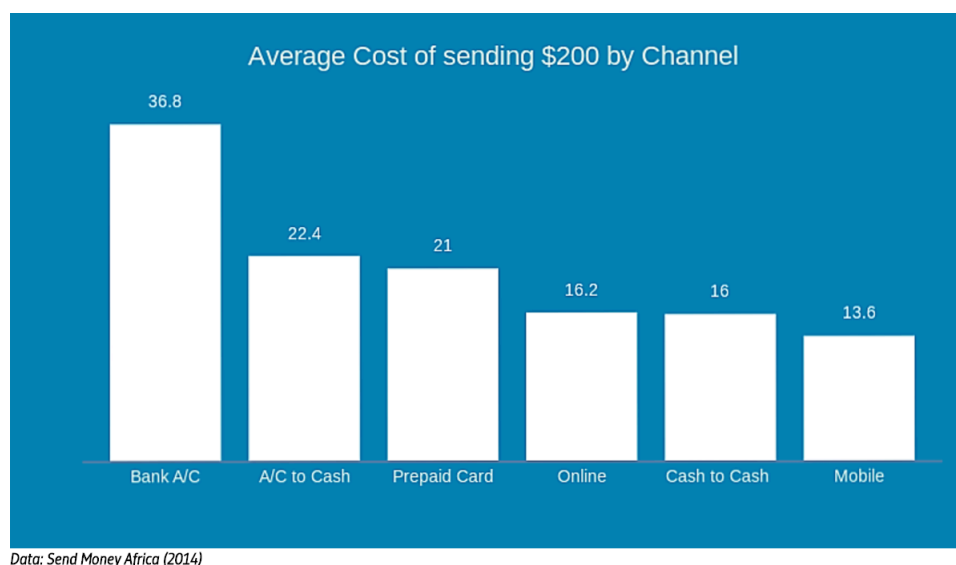
* This group excludes Equatorial Guinea, the Russian Federation, Venezuela and Argentina which were classified as High Income.

In 2016, the average fee for sending remittances to Africa is 9.6 percent for every US\$200, in comparison the global average in the same year was at 7.6 percent of every US\$200 (Worldbank, 2016). The “high degree of informality, lack of effective competition, exchange controls on outward transfers, and often-exclusive partnerships of international money transfer companies with local banks and post offices [...] contribute to high costs and restrict market entry and competition” (Mohapatra & Ratha, 2011: 3-4). Noticeably sending remittances via mobile phone is currently the cheapest method of transfer in Africa, as can be seen in figure 5. This should be good news as 71.1 percent of people in SSA as of 2014, had a mobile cellular subscription and thus a working mobile phone (Ratha et al, 2016). This “widespread adoption of mobile money transfers for domestic remittances represents a success story of how Africa has effectively leapfrogged the technology frontier to design and deliver technology solutions targeting the poorest” (Mohapatra & Ratha, 2011: 3-4). Although even here, there, of course remains room for improvement, since especially in rural

areas, which account for roughly 30 percent of recipients in SSA¹¹, people are still struggling to effectively access the remittances transferred to them (Engels, 2015).

Figure 5: Transfer Costs of Remittances in Africa

(Engels, 2015)



Simply, providing mobile phones for the population is not enough, to use remittances to their full potential. Organizations and SSA governments should work together to lower the remittances cost, so that higher proportions of the send money can be effectively used and to stimulate steady and possibly increasing flows of remittances (Easterly & Nyarko, 2008; Engels, 2015). This can be achieved through “enhanced information, transparency, [increased] competition [among Mobile Network Operators, among others] and cooperation” (Engels, 2015: Remittance Fees section, para. 5) between nations to create a better regulatory environment. There are already several examples that show efforts made by SSA countries to increase the efficient use of remittances, including “One Area Network initiative between Kenya, Uganda and Rwanda to include mobile money transfer; licensing and supervision of stand-alone cross-border remittance service providers in Kenya; removal of exclusivity

¹¹ According to a 2014 report by the International Fund for Agricultural Development (IFAD) cited from Engels, J. (2015). *Remittance Trends in Sub-Saharan Africa: Opportunities for Mobile Money*. Retrieved 19 April, 2017, from <http://solutionscenter.nethope.org/blog/view/remittance-trends-in-sub-saharan-africa-opportunities-for-mobile-money>

clauses in service provider agreements in countries like Uganda, Tanzania, Kenya and Zambia; consistent and accurate remittance data capture and licensing of MNOs (Mobile Network Operators) across Africa to offer cross border money transfer” (Engels, 2015: Regulatory Environment section, para. 1), as well as efforts made by international organizations such as the Global Remittance Working Group to reduce the global average cost of remittances from the current 10 percent to 5 percent until 2020 (Engels, 2015).

Despite the best efforts, one essential problem remains with remittances alone to fight the brain drain: they do not make up for the shortage of professionals, particularly in the healthcare sector, caused by the brain drain. Thus, an effective solution to the brain drain would consist of focused funding to create more opportunities within the country, as well as decrease costs for remittances. Luckily, many people are starting to notice the potential that resides in Sub-Saharan Africa. Many African countries are among the fastest-growing economies in the world. Ethiopia’s, Rwanda’s, Ghana’s, Angola’s and Nigeria’s economic capacities grew consistently at over 5 percent annually for the last 15 years. This is not only attracting the interest of more foreign businesses but is also incentivizing many African emigrants to consider a soon return to their native countries (Rybak, 2017). In many countries (African, as well as most common migration destination countries) agencies have started to form, which specialize in the recruitment of diaspora for top jobs available in Africa. Agencies such as *Kenyans come back home*, based in Nairobi, or *Movemeback*, based in London, help with finding houses and schools to facilitate the return of the diaspora. It is a similar concept to a head-hunting company but with an explicit focus on the African Diaspora (interested in returning) and with every educated returnee, about 8 to 9 new jobs are created locally (Rybak, 2017). For this venture, unfortunately, government corruption remains a chief barrier.

Social Incentives to Return

Yet, these barriers might not be as repelling to returning Africans as one would assume. Nwaochei found that there are many social incentives to return, which to some degree balance out the economic advantages abroad (1979). Firstly, he claims that most African emigrants’ ultimate goal is to contribute to the development of their country and as a result, the primary objective of most African emigrants is to eventually return (once conditions have become better). Secondly, the wage gap between developed and developing nations rarely accounts for the difference in living costs. Once this is accounted for the

economic advantages become less substantial. Lastly, as aforementioned, there is a strong sense of recognition and identity among Africans. Not only in the sense of a cultural connection between the emigrant and his or her native country but also in the way returning emigrants are greeted by their community. Especially in rural areas, returnees are often celebrated as village heroes upon their return. A recognition, anyone is rarely ever privy to in developed nations (Nwaochei, 1979). The new, naturally occurring, developments, in addition to the societal incentives identified by Nwaochei and more and more effective policies targeting the control over the dimensions of the brain drain, and the improvement of remittance mechanisms, should be sufficient to minimize the negative effects brain drain to such an extent that it becomes a relatively small and reasonable price to pay for the many benefits that come from internationalization of higher education. Once this will be achieved brain drain will no longer be a hindrance in achieving sustainable development for Africa but in fact, could be used to further it.

Technology and MOOCs

Although the previous section found brain drain not be inherently bad, it is undoubtedly still an issue for African nations. Thus, in addition to the above-proposed methods to more effectively handle brain drain, technology can also be used to limit mobility and thus brain drain. Over the last decades, there were “rapid and groundbreaking advancements in information and communications technologies (ICTs)” (Altbach et al., 2009: 123-124). ICTs are a rather extensive topic on their own. Currently, there are “more than 20 terms which describe the employment of the new technologies in education” (see Guri-Rosenblit, 2009 cited in Altbach et al., 2009: 125). Most of these new developments, however, are often not very effective to enhance HE in the case of Africa. They are too complicated to be implemented by inexperienced staff and require too frequent updates to be affordable (Altbach et al., 2009). The more *old-fashioned* technologies have therefore generally been proven to be more efficient in the improvement of HE in Africa. Although there are many ICT resources which could benefit Africa’s development¹², it would take another paper to explore every aspect to this extensive and complex issue.

Therefore, this thesis will simplify the subject¹³ to a focused review on topics

¹² “ICT resources-like e-mail, instant messaging, and online social networking spaces-provide avenues for academic collaboration, joint research, and personal and professional networking” (Altbach et al., 2009: 126). One good example of growing international collaboration in HE projects is the African Virtual University (AVU) (Altbach et al., 2009). It was created in 1997 as a World Bank project, which is headquartered in Kenya since 2002. “Over the last 10 years, the African Virtual University has acquired the largest network of open, distance, and e-learning institutions in Africa. It works across borders and language groups in Anglophone, Francophone, and Lusophone Africa, present in over 27 countries with more than 50 partner institutions” (see AVU, n.d. cited in Altbach et al., 2009: 131). Also “the shift to online publications, such as the African e-Journal Project, is providing new opportunities to disseminate African research in an economically sustainable way and with wider reach” (Jowi, 2017: para. 2). For further examples see Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). Trends in global higher education: Tracking an academic revolution.

¹³ For more information on ICT related topics see Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). Trends in global higher education: Tracking an academic revolution.

specifically related to Massive Open Online Courses (MOOCs). “MOOC is a model of educational delivery that is, to varying degrees, massive (no limit on enrollment), open (optional admission requirements and usually no tuition), online, and a course with defined curriculum leading to an award of a completion certificate” (see EDUCAUSE, 2013 cited in Oya & Kalema, 2014: Introduction section, para. 2). Despite the similarity in name MOOCs are not the same as online courses, as demonstrated below in figure 6.

Figure 6: Differences between Online Courses and MOOCs

(Deacon, Small & Walgi, 2014)

Online Course	MOOC
Numbers: Participant numbers capped by facilitation and assessment resourcing	MOOCs have attracted 10 000s by having almost no individual support
Motivation: Participants earn a qualification	Participants selectively take what interests them from a MOOC
Participants: Often have similar backgrounds	Often very diverse backgrounds
Assessment: Meets accreditation standards	Assessment standards less rigorous and not accredited
Cost: Pay to join course	Participants access the course for free, paying for internet connection and optionally certificates
Lecturer: Responsible for teaching a curriculum aligned to a qualification and providing support	Lecturer's role is more limited and excludes individual support

Many MOOCs make use of Open Educational Resources, which “provide free access to courses, curricula and pedagogical approaches not available locally” (Altbach et al., 2009: 126). There are a few remaining terms to the concept of MOOCs, which should be defined for the comprehensiveness of this section. E-learning and distance learning. The former “refers to any type of learning using electronic means of any kind (TV, radio, CD-ROM, DVD, mobile phone, personal organizer, Internet, etc.)” (see Arafah, 2004 cited in Altbach et al., 2009: 125). It ranges “from supplementary functions in conventional classrooms to full

substitution of the face-to-face meetings by online encounters” (see Guri-Rosenblit, 2009 cited in Altbach et al., 2009:125). Although MOOCs can be studied without the support or supervision of professors, they have been found to be very effective as a supplement to traditional teaching practices (see Cann, 2013 cited in Daniel, Cano & Cervera, 2015). Distance learning, on the other hand, describes any lessons or studies that do not “require students to assemble in a particular location” (Altbach et al., 2009: 125). It is a very important aspect for the effectiveness of MOOCs to improve African HE, as will be demonstrated.

MOOCs provide numerous new opportunities to the HE systems in Africa (Boga & McGreal, 2014; see D’Antoni, 2008 cited in Altbach et al., 2009). The improvement of Africa’s online education could help “*leapfrog* over infrastructural insufficiencies and other barriers” (Sehoole & Knight, 2013: 20), which must be overcome for development to occur. “The ICT explosion does hold the promise of breaking down barriers of time, space, and privilege; lowering costs; and enabling collaboration and creativity in teaching, learning, and research” (Altbach et al., 2009: 128). Notwithstanding the substantial benefits that could be derived from such programs, Africa remains “the most passive entity in the global MOOC debate” (Oya & Kalema, 2014: Conclusion section, para. 1) and the current cases of African MOOCs remain limited, see figure 7 below.

Global Use of MOOCs in October 2013

(Deacon et al., 2014)



In fact, there was only one documented MOOC in Africa, as of 2014: The *New Economy Skills for Africa ICT* MOOC in Tanzania (Oya & Kalema, 2014). Other uses of ICTs are more frequent but remain manageable. The following segments will explain why Africa might be hesitant to become involved but also why Africa should get involved in this debate as soon as possible.

Improve Massification and Access to Higher Education

As mentioned in the context of mobility, Africa experiences a quickly increasing demand for HE, which local institutions cannot fulfill (Altbach et al., 2009; Zeelen, 2012). Not only does that leave many students excluded from HE but the massification of HE also impacts the quality of education received by enrolled students. Mobility is one solution to make more and better HE institutions available to African students, however, it is limited particularly by the conjoined costs. Since only a restricted number of scholarships are available, many African students do not have the financial means to pursue an education abroad (Alemu, 2014; Gu, 2017). In fact, poverty often does not even allow for access to HE within the native country (see Materu, 2007; Osakoya, 2007 cited in Oya & Kalema, 2014). Massification of higher education has started a trend of massive privatization to meet the increasing demand. The increase in private institutions has further increased to the cost of HE, which naturally further augmented the number of African students unable to afford tuition. The use of ICTs and particularly MOOCs could, therefore, be an effective means to “accommodate more learners at lower costs and facilitate the spread of knowledge” (Daniel et al., 2015: 65). As aforesaid, MOOCs are open as “access is not restricted by cost, affiliation, or any other type of privilege” (Grünwald, Meinel, Totschnig & Willems, 2013: 1). The issue of cost is particularly problematic in HE, as it has been found that “throughout the world, the cost of education increases by the level undertaken” (Oya & Kalema, 2014: The Case for MOOCs in Africa section, para. 3). This was observed to result in different degrees of government funding for different levels of education. Due to the consequential cost, primary education in Africa received the most funding, while HE receives the least (Oya & Kalema, 2014). MOOCs, on the other hand, could provide a more affordable form of HE and thus could induce more funding from the African government to stimulate tertiary education. This would also allow for more independence from international aids or loans in the funding of HE in Africa (Oya & Kalema, 2014). MOOCs would also increase general access to HE for Africans even without additional government support, as they can be used for free. In addition to lower costs, MOOCs also offer a viable solution to the limited

HE opportunities and quality due to a scarce number of HE institutions and resources in Africa (Murphy, 2014; Grünewald et al., 2013). The distance education aspect of MOOCs is thus important for future educational and other developments.

“Much of the appeal of distance education today is attributed to its ability to accommodate the needs of a wide variety of learners” (Altbach et al., 2009: 133). MOOCs are an “invaluable tool in offering education to marginalized groups such as women or minorities” (Boga & McGreal, 2014: 4). As aforementioned, women education can lead to substantial improvements in sustainable development, including economic stability and growth on a familial and national level (Murphy, 2014). Women are not the only currently disadvantaged group that could be reached with MOOC programs. Others who are unable to physically attend classes on a regular level, due to employment, familial responsibilities, lack of transportation or even incarceration, can gain access to education through MOOCs. The increased flexibility in access to HE not only increases the number of students able to pursue tertiary education but it also gives the opportunity for older age groups to catch up and make lifelong learning a possibility (Altbach et al., 2009). Consequently, they can better develop human resource capacities (Oya & Kalema, 2014; Boga & McGreal, 2014) and trends towards more distance education oriented HE can already be observed in several African countries.¹⁴ The facilitated sharing of knowledge through MOOCs encourages brain circulation and effectively reduces the detrimental effects of brain drain (Dodani & LaPorte, 2005).

Flexible Learning and Appropriate Curricula

MOOCs not only have the potential to provide universal access to HE. They also have the potential to transform current practices to adapt better to individual nations and students needs. As could be witnessed for mobility, imported curricula and teaching practices can display a disconnect to practical applications in the local economy (Alemu, 2014; Friedmann, 2004). This relates, particularly to for-profit companies. Their focus on revenue might compel them to accept “corporate partnerships that may not have the best interests of the learners in mind” (Boga & McGreal, 2014: 8). Unfortunately, the majority of MOOC

¹⁴ For more examples on distance learning implementation in African countries refer to Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). Trends in global higher education: Tracking an academic revolution.

providers are from developed countries, leaving little to no power to developing nations to influence the final product (Altbach et al, 2009). This effect is only increased by copyright protections of MOOC-related materials, as they further impair African countries ability to “adapt, localize or translate content to their own context” (Boga & McGreal, 2014: 8). This incompatibility could be avoided if international companies would be willing to work with local instructors that could ensure accurate cultural and economic representation in the studied material (Oya & Kalema, 2014). This would make MOOCs more viable for the African market, and could potentially create new local job opportunities. Partnerships between for-profit companies, MOOC providers and universities could be made to provide free education for mutual benefit. In this scenario, the for-profit companies would fund skill specific MOOCs to be provided to the African public. As a result, they would have access to a more skilled workforce, which consequently will increase the efficiency of local business branches. At the same time, the MOOC provider would be paid for the services. Firstly, this could help ensure better quality provisions, because if the funding company is dissatisfied with the effectiveness of the MOOC provided they will no longer pay for it. It would, therefore, combine profit motivation with a quality provision. Secondly, it would also provide MOOC platforms with the funds to hire local staff to adapt curricula. Since quality is now related to profit, foreign MOOC platforms have an incentive to provide compatible and easily accessible courses. This development would not only reduce the risk of inaccurate curricula but would further increase work opportunities for teaching professionals. Lastly, the public stands to profit from affordable and remotely accessible quality education. It would also ensure a more capable and less frustrated African workforce in the long run (Friedmann, 2014), which naturally would progress development. These arrangements are not yet common in Africa but do occur in other regions of the world¹⁵ (Boga & McGreal, 2014).

The need for professors to ensure compatibility is just one feature, which proves that staff cannot be replaced by MOOCs. “Anyone who studies the evidence soon sees that MOOCs augment rather than replace formal education models” (see Cann, 2013 cited in Daniel et al., 2015: 66). One of these possible augmentations is the implementation of “adaptive learning techniques to make MOOC courses more personalized” (Daniel et al.,

¹⁵ In North America, such an arrangement exists between Udacity, a MOOC provider, Georgia Tech and AT&T. For more detailed information see Boga, S., & McGreal, R. (2014). *Introducing MOOCs to Africa: New Economy Skills for Africa Program*.

2015: 68). At the moment, it is differentiated between two types of MOOC modules: xMOOCs, which “rely on the traditional lecture format supplemented with interactive exercises and discussion boards, and cMOOCs that are based on a connectivist pedagogy [...] that invites learners to engage in a self-organized and social learning process” (see Siemens 2012; 2005 cited in Grünewald et al., 2013: 1-2). According to Bates, the “pedagogy of xMOOCs is better suited for learning domain knowledge that can be mastered through repetitive practice, but [...] only cMOOCs allow learners to acquire higher order creative skills” (cited by Grünewald et al., 2013: 2). On their own, both modules face limitations in their provision of a practical application of the learned material - xMOOCs more so than cMOOCs (see Bates, 2012; Daniel, 2012; Dillenbourg, et al., 2014; Hollands & Tirthali, 2014 cited in Daniel et al., 2015: 65). Hence, if possible MOOCs should be used in a hybrid system with conventional face to face teaching methods to make the learning process more “holistic” (Grünewald et al., 2015: 3).

While MOOCs are limited in the practical application they can provide, they offer the possibility of building “knowledge cultures” (Boga & McGreal, 2014: 2) or learning communities. Due to their wide reach, MOOCs can connect a variety of learners who can learn from each other and provide support despite physical separation (see Wenger 1998 cited in Grünewald et al., 2013). The diversity of these communities also allows learners to enrich abstract concepts through group annotations, to engage more actively in experiments that allow for creative interpretation of concepts, to develop new perspectives on concrete experience from group discussions and to reflect one’s learning process more thoroughly by linking it to how one’s peers learn (Grünewald et al., 2013: 9). In that way, they allow for Miyagawi’s economies of scale in education even under the condition of brain drain (1991). The encouraged connections between students can last beyond the MOOC experience and can lead to better international research collaboration (see Liyanagunawardena, et al., 2013 cited in Boga & McGreal, 2014).

With the development of MOOC models that combine xMOOC, cMOOC and if possible face to face instruction, MOOCs could become for HE what Khan Academy is becoming for secondary education. Khan Academy is a non-profit educational organization created in 2006 by Salman Khan with the self-proclaimed mission “to provide a free world class education, for anyone, anywhere” (see Noer, 2012; Khan Academy, c2017: n.p.). “Khan Academy offers practice exercises, instructional videos, and a personalized learning

dashboard that empower learners to study at their own pace in and outside of the classroom” (Khan Academy, c2017: para. 1). This does not imply that teacher are no longer needed (Khan Academy Education Team, 2011). If teachers are available, the program is supposed to:

- provide a better overview of their students’ abilities and struggles
- save more time for more practice-oriented tasks. Since the theory and practice are readily available on Khan Academy, teachers can divert more time towards collaboration and teamwork development, communication and presentation skills, creativity, problem solving and leadership abilities (Khan Academy Education Team, 2011).

On the other side, the students benefit by, easier access at any given time and more flexible study methods. Every student is able to work through the material at their own speed, in their preferred language¹⁶, with or without subtitles, etc. and profit from the extra skill development mentioned above (Khan Academy, c2017). This ensures more “mastery-based learning”¹⁷ (Khan Academy Education Team, 2011: 2:48). Khan Academy allows for facilitated differentiation, rapid feedback and self-directed learning (SRI International, 2014). Since its beginnings in 2006 Khan Academy has grown exponentially and has been integrated fully in the curricula at a number of model schools - so far with considerable success. Research on the Use of Khan Academy in Schools has shown that 85 percent of teachers reported positive effects on their students’ learning and understanding of the material with the use of Khan Academy (SRI International, 2014). Furthermore, “a positive association was found between more Khan Academy use and more problem sets completed and two outcomes: (1) improvements in student test scores, and (2) improvements in three of the four self-reported non-achievement outcomes – math anxiety, math self-concept, and academic efficacy (i.e., belief in one’s ability to succeed in academic endeavors)” (SRI International, 2014: 12)

While some of these aspects become less relevant in HE, many stay substantial to

¹⁶ Khan Academy is so far predominantly available in English, but does offer their services in other languages as well (Khan Academy, c2017). With increased use the language functions are likely to extend as well.

¹⁷ Master based learning, refers to the concept where students acquire mastery skills in the subject and are no longer hindered by holes in their understanding of a subject matter.

successful post-secondary education. In fact, many college and university students (mostly in the US) are or have used Khan Academy to further their education (Khan Academy, c2017). Considering that Africa is faced with scarce resources and suboptimal conditions in almost every aspect, creative thinking, and problem-solving skills are essential for the African workforce (Friedmann, 2014). Improvements in academic efficacy are also not to be underestimated. As was described in the mobility chapter, limited African research can, in part, be attributed to the lack of confidence in research (and academic skills) (Zeelen, 2017).

In regards to MOOCs similar initiatives are emerging or already exists. One example is a collective initiative by Coursera, an American MOOC platform provider, the World Bank and the Tanzanian government. It aims to “provide MOOCs to African students in an ICT education initiative” (Boga & McGreal, 2014: 2). Although Coursera’s involvement creates a threat of profit incentives and mismatched curricula, the project strives to align the MOOC IT curriculum with the explicit needs of the growing Tanzanian IT market (Boga & McGreal, 2014; see Trucano, 2013 cited in Daniel et al., 2015). Project such as these could further be personalized to the student, with the development of “software agents [...] to collect data automatically from the e-learning environment according to pre-defined indicators contained in a framework using advanced Educational Data Mining and Learning Analytics techniques and tools” (see Daradoumis, Bassi, Xhafa, & Caballe, 2013; Nguyen, Piech, Huang, & Guibas, 2014 cited in Daniel et al., 2015: 68). “Agents analyzing the learner’s profile could customize a course as follows: adjusting course content according to the participants’ pre-requisites or educational background; changing course content according to the participant’s location or country of origin, for example language, units of measure, currency symbol, seasons, etc.; and showing relevant case studies or further readings according to the country or region of origin/interest” (see Daradoumis, Bassi, Xhafa, & Caballe, 2013; Buffardi & Edwards, 2014 cited in Daniel et al., 2015: 68). These analytics would help ensure “cultural adaptation” (Daniel et al., 2015: 69) and prevent incompatible curricula. It would also facilitate the use of MOOCs substantially for the student and the instructor - A very important aspect in countries with low computer literacy and limited experience with technology.

Infrastructure and Preparation

Technology-based learning and MOOCs in particular, have the potential to revolutionize Africa’s HE education. As discussed above MOOCs facilitate access to HE through affordability and optionality of physical presence. Moreover, they could increase the

effectiveness of education by more personalized learning options made available to the student through MOOCs. Yet one key limitation remains: they require the internet and some form of technology for access. Two things that are not guaranteed in a developing region such as Africa. When ICT's potential to reform HE was first noticed, a few general assumptions were made:

- “no significant difference between accessing information and constructing knowledge in higher education [...]
- contemporary students of traditional university age were naturally inclined to like and respond well as learners to emerging ICT [...]
- the purveyors of the new technologies could not fail to achieve economies of scale and make profits on their innovative products and services” (Altbach et al., 2009: 128)

These assumptions have not held up and have left to an increasing gap between the world's developing and developed nations. African infrastructure, particularly outside of big cities, does not allow for a strong or solid internet connection nor a reliable electric grid (see Liyanagunawardena, Williams & Adams, 2013 cited in Boga & McGreal, 2014; Oya & Kalema, 2014). This leaves rural areas especially without access to MOOCs, although they are the areas with lowest access to HE in the first place (Altbach et al., 2009). In its current state, Africa is unable to use MOOCs to their full potential. In addition to insufficient infrastructure, teachers and students are also insufficiently prepared to make use of MOOCs. Many HE instructors do not have the appropriate skill set to integrate MOOCs into their teaching. Nor is there a sufficient computer literacy among HE students and the general public to be able to use existent MOOCs (Oya & Kalema, 20014). “To date, the MOOC movement has paid insufficient attention to the real needs in the developing world” (Daniel et al., 2015: 69). High standards applied to satisfy consumers from developed countries, such as high video quality, are a hindrance to the use of MOOCs in developing countries. The African infrastructure simply does not allow for the same online presence in Africa as in developed countries (Altbach et al., 2009), a fact many have appeared to be oblivious to in the past. It is therefore not surprising that currently many externally funded e-learning resources in African universities go to waste (see Eka, 2010 cited in Oya & Kalem, 2014). A dangerous truth, as it could discourage investors from investing in MOOCs for Africa in the future. MOOCs are too valuable for HE to be disregarded. Instead, more efforts should be directed towards adjusting MOOCs to African circumstances.

This is not to say that more funding should be diverted towards increased provision of computers in universities. Such actions would swallow enormous budgets while accomplishing relatively little in return - More computers will not be beneficial in a region with low computer literacy. Furthermore, an increased use of computers in universities would also pose “very real financial and moral/ethical challenges embedded in the process of dealing appropriately with the dangerous waste generated by obsolete computer hardware and other components used in e-learning” (see Guri-Rosenblit, 2009 cited in Altbach et al., 2009: 128-9). It would be much more effective and affordable to tailor MOOCs to the resources available in Africa. The high levels of “abject poverty still reported in most parts of Africa renders poverty eradication interventions more prominent over Internet access” (Oya & Kalem, 2014: Ubiquitous Access to Computers and Internet section, para. 4). Therefore, MOOCs in Africa should consider “more suitable engagement tools such as: lower resolution videos, offline “burst connectivity” tools, and offline reading and composition of replies” (see Liyanagunawardena, Williams, & Adams, 2013 cited in Daniel et al., 2015: 69). Although universal internet access for Africa is, justifiably, not a priority, it is already available to a certain extent. “Access to computers and access to Internet are two separate issues in Africa, with the former more abundantly available than the latter [...] Rwanda and Nigeria are unique cases with access to computers both in schools as well as through ICT buses (mobile Telecentres or Internet units). The latest report by the government of Rwanda indicates that students and the general public can now access Internet through 94 mobile Telecentres across all the 30 districts. Similarly, the mobile Internet units in Nigeria are effective in providing access to Internet in primary and secondary schools although their number is still limited. In Ghana, ICT has been part of the senior high school curriculum since 2008” (see Republic of Rwanda, 2014; Adomi & Kpangban, 2010; Amenyedzi et al., 2011 cited in Oya & Kalem, 2014: Ubiquitous Access to Computers and Internet section, para. 1). The availability of internet and computers in secondary schools can be used to integrate MOOCs more successfully. As a transitional solution, the available resources in schools could be shared with university students (Oya & Kalem, 2014). This would already provide greater access, as secondary schools are often more numerous than HE institutions. Students unable to attend HE institutions regularly could sign up and then access the curricula through the closest secondary school. Generally, it appears to be more sensible to provide secondary education institutions with computers first. This way, computer skills can be acquired in secondary education and students seeking tertiary education would be better equipped to use MOOCs as part of their HE. Once MOOCs have been established in African HE, the government can

start to improve internet accessibility to interested students via strategically placed MOOC hubs. Due to the many other costs related to HE and MOOCs, such as staff training and MOOC development, the aim would be to make the most out of a minimal amount of funding. Proper coordination of the funding into MOOCs is therefore essential. Regions, where access to MOOCs would have the largest impact, should be targeted first. This way, improvements should occur the quickest and the most noticeable. Noticeable efficient implementation could attract companies interest in the matter - Shared arrangements between companies, MOOC platforms, and HE institutes or governments would be more likely to occur. As mentioned before these arrangements could be essential in the development and spread of MOOCs.

Yet, even without these proposed policies is “Africa’s Internet penetration of 15.6 percent [...] growing steadily, thanks to investments in broadband and the proliferation of smartphones The McKinsey Global Institute projects that by 2025, Internet penetration will rise to 50 percent (600 million users) and smartphones will increase six-fold” (Murphy, 2014: para. 5). This suggests that internet access to MOOCs appears to be a manageable challenge. The bigger issue lies with available technology. Even though some computers are available, the further provision and maintenance will be costly. That in addition to low computer literacy shows that exploring other technology options might be more affordable and efficient. To be accessible “MOOCs must be delivered using technology that is familiar in the local context – technology such as radio, mobile phones, compact discs, print and other course materials using open licenses” (Boga & McGreal, 2014: 4). The most promising technology is the mobile phone (Oya & Kalem, 2014; Altbach et al., 2009). As of 2014, 71.1 percent of SSA had mobile phone subscriptions (Ratha et al., 2016), a number that is only expected to increase (Murphy, 2014). “Mobile phones are ubiquitous in the developing world, [they are cost effective (Sehoole & Knight, 2013),] most people already know how to use them, and their use in education can be based not only on traditional pedagogies, but also on constructivist principles, which complement the connectivist principles upon which many MOOCs are based” (Boga & McGreal, 2014: 2). Boga and McGreal outline very well why mobile phones are the most effective way to use MOOCs in Africa:

“First, enrolled students may not have access to high-speed internet or specific hardware or software at home, so including mobile devices in course design will help free students from the constraints of a particular location, and enable them to study and learn on a

continuous basis. Second, students in an MOOC are expected to develop social networks comprised of people from whom they can learn. If they are only able to communicate with other people who have computers, their access to knowledge through dialog and social connections will be severely limited. Third, if this pilot shows that MOOCs in Africa can educate large numbers of people, scalability will be key. Students in rural and outlying areas will still need access to the courses, and providing them with the option to use accessible technology will be key to normalizing such e-learning initiatives” (2014: 7).

Due to all these flexibilities permitted using mobile phones, they are also an effective means to extend access to HE to “including non-traditional groups of students and women” (Schoole & Knight, 2013: 9)

Accreditation and Quality Assurance

As with mobility, MOOCs struggle with reliable quality assurance and the universal acceptance of accreditation. There are a few that are specifically related to the use of technology, such as uncertainty about the identity of the student reenrolled in an MOOC. “The MOOC learner is remote, unverifiable, and identified merely by an email address” (Daniel et al., 2014: 67). Nowadays, there are technological solutions, which ensure the learner is who they say they are but some uncertainty may remain. The remaining uncertainty, whether founded or not can impact HE institutions opinions and trust in MOOCs and the resultant degrees. Not all MOOCs are naturally accredited, which leads to drop out rates of 60 to 90 percent for the ones that are not (Daniel et al., 2015). This problem slowly remedies itself. With the expansion of MOOCs, they have become more accepted by established HE institutions, resulting in more accreditation of MOOCs (Daniel et al., 2015). The more difficult problems remain supervision and profit-incentivized institutions, just as it was the case for mobility (Altbach et al., 2009; Daniel et al., 2015). In the case of MOOCs quality can be easier surveilled than for mobility, as they are accessible to all (Daniel et al., 2015). Unlike courses taken abroad, MOOCs can be verified remotely by institutions. This, however, refers more to the integration of MOOCs in specific programs. Currently, there is very little oversight over nonintegrated MOOCs (Altbach et al., 2009). It is, therefore, essential to raise awareness about possible quality issues in MOOCs. Most of the existing quality issues can be related back to profit driven motivation (Daniel et al., 2015). “The expansion and growth of private distance-education providers has also brought with it new kinds of accrediting institutions, often driven by financial gain. This makes the task of

identifying legitimate institutions, programs, and providers even more difficult” (Altbach et al., 2009: 134). It is difficult to limit the existence of fraudulent programs. The only possible solutions are to increase awareness among learners about these degree mills. Once MOOCs have become implemented into mainstream education they are likely to be included in the quality monitoring that currently extends to traditional HE programs. It is a broad approach but due to the many different applications of MOOCs, their supervision and their quality poses a greater challenge than the surveillance for quality in mobility even. It can only be hoped that with increased use of MOOC platforms quality supervision will be focused upon more by HE institutions and other independent organizations.

MOOC implementation needs to adapt better to technological resources and cultural context in Africa. However, with the support of independent investors, this could be achieved relatively cheaply and with considerable and quickly measurable success. Unlike most other forms of HE improvements, strategic implementation of MOOC hubs and mobile phone compatibly has the means to reach a substantial amount of people with comparatively little investment (Oya & Klemu, 2014). With increased implementation, more regulations and quality supervisions should arise as well. Yet, even without fully controlled accreditation and quality MOOCs already offer unprecedented access to education and HE, including to the most needing and underprovided people (Schoole & Knight, 2013).

Conclusion

The need for education to achieve sustainable development in Africa is undeniable (Watt, 2015; Global Education First Initiative, 2015). Whether for economic development, poverty reduction, healthcare or women empowerment, education is essential to a continuous provision and improvement. Higher education is currently the most underdeveloped level of education in Africa, but internationalization of higher education can help change that. Higher education mobility and MOOCs have the potential to provide high quality and affordable education to more Africans. They could reduce the negative effects of the current massification of HE and facilitate universal access to education. At the moment there are still substantial barriers, such as insufficient infrastructure, in the way of using internationalization to its full potential.

However, targeted policy changes and focused investment could change that relatively quickly. The most important aspects to focus on, for the successful integration of mobility and technology in Africa's HE system are the language barrier, incompatibility of curricula, and ineffective allocation of resources. Increased focus on language courses, specifically English as it is the universal language, in secondary education will broaden the educational options of HE for African students. MOOCs with translated material and features such as subtitled videos (as well as adjustable video speed) can also help reduce the language barrier in HE. Furthermore, more attention needs to be paid to the usefulness of imported curricula. The African job market cannot offer the same accommodations as developed countries. These realities should be reflected in the curricula used and more emphasis should be placed on creative problem-solving skills. Adaptation to African circumstances should not only be applied to curricula but also to the methods of transfer for MOOCs. Contrary to developed countries, Africa has limited access to computers and low computer literacy. At the same time, there is a widespread use of mobile phones. Adapting MOOCs to mobile phone use would therefore exponentially increase the access to HE while remaining relatively affordable for learners and investors alike. Lastly, any investments towards development in Africa should be well organized and focused on specialization. Instead of providing the same institutions in all 54 African countries, HE institutions and research projects should be tailored to the individual countries natural resources and strengths. For example, the DRC has an abundance of raw materials and natural resources, while Chad and Niger are to large parts desert. Therefore, research into the use of natural resources or raw material production would be much more beneficial to the DRC, while solar energy research collaboration would me

more beneficial for central African countries. This way the HE will be designed specifically to each country's individual needs and will thus focus progress in sustainable development more efficiently. The more explicit investment also decreases the costs for African countries and foreign investors. To ensure that all African nations will benefit equality from the country-specific developments, South to South mobility and cooperation should be encouraged as well. Increased cooperation among African nations, will also help facilitate the transfer of remittances. As a result, sustainable development could be supported through brain drain and additional funding would be made available to improve Africa's infrastructure.

This thesis' findings for the improvement of internationalization of higher education in regards to sustainable development can thus be summarized in more country specific investment and education, a reduction of the language barrier to facilitate mobility and the use of MOOCs and a better use of remittance to benefit more from unavoidable brain drain.

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