# Doctoral Education in Context

## Perspectives from Africa

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AFRICAN
MINDS

Published in 2024 by African Minds
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ISBNs:
978-1-0672535-3-0 Print
978-1-0672535-4-7 e-book
978-1-0672535-5-4 e-pub

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CHAPTER 3

# Overseas education and degree completion: Evidence from African PhD students

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**Rwanda** is a country located in East Africa, with a population of 13.2 million. It has 3 public universities with a total enrollment of 53 110 students (Ministry of Education Statistics). Doctoral enrollments in Rwanda have increased from 2 in 2013/14 to 280 in 2022. Between 2013 and 2022, a total of 25 doctoral students graduated at Rwandan universities (University of Rwanda). Doctoral graduates increased from 9 in 2020 to 25 in 2022 (UR statistics).

**The University of Rwanda (UR)** became an independent university in 2013 through a merger of 7 former public higher learning institutions, namely National University of Rwanda, Kigali Institute of Science and Technology, Kigali Institute of Education, Higher Institute of Agriculture and Animal Husbandry, School of Finance and Banking, Kigali Health Institute, and Umutara Polytechnic. UR has 1 256 academic staff members working in six colleges, with a total student enrollment of 26 894, which makes it one of the largest public universities in Rwanda. In 2022, UR had 280 doctoral candidates enrolled and awarded 25 doctoral degrees (UR statistics, 2022).

## 1. Introduction

This chapter – a conceptual paper – discusses the factors that support or constrain PhD completion rates and time-to-degree. The aim of the chapter is to show the extent to which overseas doctoral education has contributed to doctoral completion of African doctoral students.

With the increasing role of knowledge in development, through their universities, many countries have embarked on doctoral education to develop research capacities, particularly doctoral training, in sufficient number and quality. Van Schalkwyk et al. (2021) note that doctoral education has grown in both developed and developing countries and they attribute this development to two main issues, namely the need for universities (called 'academy' in their paper) to reproduce and grow themselves and the importance of doctorates in the production and transfer of knowledge for socio-economic development.

One of the indicators of the performance/efficiency of doctoral programmes is completion (time-to-degree and completion rate) (Mouton, 2011). Abedi and Benkin (1987) maintain that the main indicator of the quality of doctoral education is the ratio of students admitted to the doctoral programme and students who complete the programme. They also noted that the time taken to complete the PhD is another important measure of doctoral education quality. Groenvyncket et al. (2013) suggest that lower completion rates, longer time to completion, and doctoral dropouts adversely affect the return on investment on PhD programmes. Spronken-Smith et al. (2018) mention that different stakeholders, particularly governments, have vested interest in doctoral completion times. Information of doctoral throughput is used to strengthen doctoral education policies.

Torka (2020) highlights various concerns about doctoral throughput. At the student level, longer/non- completion of doctoral degree may affect a student's self-esteem, may reduce their chances of employability and career progression. Longer completion time can also affect supervisory capacities in terms of overload. At the institutional level, longer completion times affect institutional reputation (e.g. failure to attract good students and funding support). Longer completion is also considered resource wastage by funding agencies.

As part of higher education studies today, doctoral education completion has been examined in several studies, specifically on the African continent (Academy of Science of South Africa, 2010; Cloete et al., 2015), with a focus on completion rates and times for different universities and programmes. The literature on doctoral completion can be divided into two strands. One strand of the literature focuses on the determinants of doctoral completion and the second focuses on stocktaking doctoral completion. Studies focusing on the determinants of doctoral completion show that candidate characteristics, doctoral supervision, and institutional factors are the main determinants of doctoral completion.

Studies examining the effects of candidate characteristics on doctoral completion specifically mainly look at mental, psychological and social

experiences of students (Sverdlik et al., 2018), over-commitment and delays (Kearns et al., 2008), nature of study (part-time versus full-time) and doctoral completion (Neumann & Rodwell, 2009), and whether employment and labour demands affect their completion times and attrition rates (Bekova, 2021).

Another strand of literature examines the effects of supervision on completion of doctoral studies. In a meta-analytical review, Bair and Haworth (2005) show that among other factors, supervisory support, particularly supervisory availability and positive relationship between supervisor and student, contribute to student satisfaction and, ultimately, timely doctoral completion. Van Rooij et al. (2019) recently assessed the effects of several supervisory factors (supervision, doctoral project features and psychological factors) that affect the success (progress, satisfaction, and quitting) of doctoral students in the Netherlands. Taking a sample of 839 doctoral students, they found that students' experiences of workload adversely affected their progress and led to dropout intentions. They also find that good supervisory relationships positively affect student success. Supervisory selection and expertise (Ives & Rowley, 2005) as well as supervisory support in the form of early detection of difficulties that students may be experiencing, and pedagogical approaches of supervisors (Manathunga, 2005) are also instrumental in increasing student progress and completion.

Some studies have zoned in on how institutional factors affect doctoral completion. Institutional factors such as the financial capacities of universities (Ehrenberg & Mavros, 1992); model of doctoral education (Maloshonok & Terentev, 2019); research codes of best practice (Humphrey et al., 2012); clarifying of deadlines in programme structures (Skopek et al., 2020); academic disciplines with STEM disciplines having higher doctoral completion times and rates (Abedi & Benkin, 1987; Groenvynck et al., 2013; Horta et al., 2018; Van Ours & Ridder, 2003; Wright & Cochrane, 2000) were found to be some of the main predictive variables on timely completion of doctoral studies in different countries.

Other studies combine student characteristics, supervision, and institutional factors (Seagram et al., 1998; Spronken-Smith et al., 2018; Van de Schoot et al., 2013) in explaining the rate and time of doctoral completion across different contexts. Kyvik and Olsen (2014) note from the literature that the training system of the doctorate, the doctoral programme itself, the research environment, doctoral candidate characteristics, cultural and social contexts, and differences between fields account for differences in completion rates of doctoral students. Pitchforth et al. (2012) studied the effect of supervisory support management of the research centres and programmes. A South African

report on PhDs (ASSAf, 2010) shows that student characteristics (such as age at time of enrolment, family and other commitments, socialisation experiences), poor supervisor relationships and funding problems lead to higher attrition rates among doctoral students in South African universities.

What remains unaddressed in empirical literature on doctoral completion is the extent to which country of study contributes to time-to-degree and completion/attrition rates. Studies focusing on the completion rates of African students pursuing doctoral studies in foreign countries are limited, and the only available studies focus on foreign students pursuing their PhD studies in South Africa. Understanding this phenomenon for Africa is important for several reasons. Müller et al. (2018) highlight that local universities in developing countries lack the capacities to provide sufficient and quality PhD training. Torka (2020), citing prior international literature, shows that, compared to domestic PhD students, international students are likely to complete their PhDs in shorter times.

Except for South Africa, very few other African countries have doctoral programmes and doctoral completion on the continent is the lowest in the world. Reporting results from British Council and DAAD (2018), Darley (2021) shows that most African countries have lower completion rates although the average years to completion (for those who complete) is not different from those in developed countries. He shows that completion rates in Kenya are at 11% and 10.7% in Ethiopia. South African PhD completion rates vary from 25% at UNISA to 60% at UWC.

Mouton (2016) notes that only South Africa boasts the highest number of international doctoral students from Africa compared to other African countries. He attributes this to improvement in supervisory quality, funding, and programme quality.

Van Schalkwyk et al. (2021) report that 1 out 3 doctoral students enrolled at South African universities were from the rest of Africa by 2019 and that the number of doctoral students from the rest of Africa graduating at South African universities grew from 7% in 2000 to 39% in 2019. Friesenhahn (2014) highlights that with few universities offering doctoral education in Africa, most African students pursue their PhD education overseas in the developed countries of Europe, the US and most recently, Asia. Van de Laar et al. (2016) note that many sub-Saharan PhD students do not get the necessary financial support and face institutional challenges such as heavy workloads, balancing work and family and getting little institutional support from the universities to pursue their doctoral studies. Stackhouse and Harle (2014) add that given the size of funding support from universities in high income countries, bilateral

agencies or other research organisations attract African students to overseas universities. For instance, the UK alone hosts about 50 to 70 doctoral students under the Commonwealth Scholarship and Fellowship Plan every year (ACU, 2024). Seventy-one per cent of them were from sub-Saharan African countries in 2014 (Stackhouse & Harle, 2014). Other African doctoral students attend universities in the US, Canada, and some other European countries.

However, there is scant evidence on the efficiency of studying in overseas countries for African students. This is an empirical gap worth pursuing for scholars. The only evidence on overseas education relates to motives for pursuing studies overseas. For example, Kim (2011) focuses on the overseas education of Korean students and argues that students attend US universities to boost their employability; improve English language communication, and to connect with the rest of the professional globe. Van de Laar et al. (2016) argue that the quality of degree and employability issues have pushed doctoral students to migrate internationally to reputable universities worldwide.

So far, no empirical research exists that attempts to establish the time-to-degree of overseas African doctoral students. The current study contributes to this rare literature by descriptively reviewing the literature on the effects of overseas education on doctoral completion (rates, time, and attrition) with specific focus on African students pursuing doctoral education in countries overseas. At the end of each section, some testable propositions are suggested. This study contributes to literature in two ways. First, it adds to the debate linking overseas education to doctoral completion. Second, it adds to the literature on internationalization by specifically focusing on African students pursuing doctoral studies in overseas countries.

This chapter proceeds as follows: section 2 reviews the state of doctoral education in Africa and overseas doctoral education. Section 3 discusses the literature on overseas doctoral education of African students and implications for doctoral completion. Section 4 concludes and provides avenues for future research.

## 2. Literature review

### *2.1 African doctoral education*

Several studies have provided excellent statistical evidence on the state of doctoral education in Africa (Bunting et al., 2014; Cloete et al., 2015) and more specifically, on South African PhD education (Cloete & Mouton, 2015; Herman, 2017; Mouton, 2007, 2011, 2016). Thus, this section focuses on providing,

descriptively and summarily, evidence on the state of doctoral education and completion and the challenges thereof.

Cloete, Baily and Pillay (2011, pp.4–7) provide a detailed historical account of tertiary education in Africa. They note that most universities on the continent were originally founded to produce graduates to serve the human resource demands of countries, especially in public service, following the departure of colonialists. In later years, universities were considered as engines of development; therefore, countries had to invest in these institutions for them to realise this mandate. Later years were associated with internal wars, conflicts in most African countries and shifts in the focus of governments from support to interference in university affairs. Universities suffered cuts in government funding which affected their capacities to serve as development enablers. The authors note that university education was considered a luxury around this time, coinciding with reports from the World Bank on the lower return on investment of tertiary education compared to that of primary and secondary education in Africa.

Over time, the World Bank advised African governments to focus on primary and secondary education to achieve their economic development goals. Bloom et al. (2006) note that, for many years, most African countries and donor agencies paid little attention to tertiary education.

The 1990s saw a shift in thinking on the role of tertiary education. Cloete et al. (2011) shows that Castells's (1994) work on the role of tertiary education in development led donor agencies, particularly the World Bank, to refocus on tertiary education in Africa.

Since then, African states, with the support of the World Bank, have affirmed their commitment to increasing PhD programmes and PhD production in Africa. Universities are tasked with producing PhDs for the knowledge economy to foster growth through innovation (Molla & Cuthbert, 2016). Many African countries have set up (or are currently setting up) universities to establish PhD programmes, with South African universities leading in the offer of PhD degrees in different academic disciplines (Scherer & Sooryamoorthy, 2022).

Cross and Backhouse (2014) show that many countries in Africa have embarked on PhD education to improve their higher education systems, whose goal is understood as providing knowledge useful in solving local problems that countries face. However, they note that the effective delivery of PhD programmes in African countries is still hindered by inadequate funding and supervisory quality.

A report on African flagship universities (Cloete et al, 2018:41) shows that, except for the University of Cape Town, University of Botswana, and University

of Ghana, less than 50% of academics in other flagship universities in Africa have PhDs. In the 8 flagship universities profiled, the proportion of staff with doctoral PhDs hardly grew during the period 2001 to 2014. Only 43% of total academic staff possessed PhDs in 2011, compared to the 42% figure in 2007. A British Council and DAAD study (2018)[1] on the state of doctoral training in six African countries shows that staff with PhDs in Ethiopia were 8%; 31% in Ghana; 34% in Kenya, 43% in Nigeria, and 43% in South Africa.

Citing an earlier study (Szanton & Manyika, 2002), Molla and Cuthbert (2016) summarised problems and challenges that face doctoral education in Africa. They mention that the supportive intellectual environment, scholarly engagement of students, modes of doctoral education delivery can address the needs of novice doctoral students.

Individual country studies on the state of doctoral training in Africa reveal alarming results for doctoral training completion. For instance, Nega and Kassaye (2018) present findings for Ethiopian doctoral capacities in their British Council and DAAD report (2018). They show that, in all Ethiopian universities, there were 3 135 doctoral students enrolled from 2006-2015. Doctoral student graduates grew from 7 graduates in 2005-2006 to 335 in 2014-2015. Addis Ababa University, the largest university, contributed 66% of total graduates (221 graduates). Another British Council–DAAD report for Ghana (Alabi & Mohammed, 2017) shows that there were 963 doctoral students enrolled in Ghanaian universities in 2012-2013. However, doctoral graduates were as few as 65 in 2012-2015, with the University of Ghana (UG) contributing to the highest number of graduates (34), followed by Kwame Nkrumah University of Science and Technology (KNUST) with 7 graduates. Moreover, another British Council–DAAD report (Dimé, 2018) on research and PhD capacities in Senegal shows that of the 2 059 doctoral students enrolled at Senegalese universities in the same year, only 256 doctoral students graduated.

Among the countries covered by the report, South Africa showed promising figures for doctoral graduation. The report shows that in 2005, 1 188 doctoral students graduated from South African universities (traditional, comprehensive and universities of technology). In 2014, the report shows that there was a tremendous increase of doctoral graduation (2 258), which showed 90% growth from the 2005 figures.

Summarising evidence from the British Council & DAAD report (2018), Darley (2021) shows that it takes on average ten years for a doctoral student to complete in Senegal. Moreover, completion rates for doctoral students are 11%, with higher dropout rates of between 20 to 50%. Completion rates for

1 Cited in Darley (2021).

Ethiopian PhD students is 10.7%, with completion times of six years. South African universities have relatively higher completion rates, ranging from 25% (University of South Africa) to 60% (University of the Western Cape). In a report on doctoral training in African countries, Scherer and Sooryamoorthy (2022) show that African doctoral training is characterized by high and alarming dropout rates, prolonged time to completion, and low government funding.

In consideration of this statistical evidence, I propose that:

> Proposition 1: *Studies are needed to establish the number of African students pursuing PhD studies abroad and the extent to which studying abroad contributes to higher completion rates/time.*

### *2.2 Overseas PhD education*

There are two strands of literature that examine why doctoral students enroll in foreign and/or overseas universities, and these have been categorised into push and pull factors. According to Kim (2011), push factors include the characteristics of the student, significant related factors such as family, students' home country characteristics such as academic factors, economic factors, and political factors that inhibit their academic aspirations. Pull factors include the quality of host countries' universities including their reputation, the financial support provided to students, migration policies of host countries, economic and political support, and nearness to students' home countries (Kim, 2011, p.111). Van de Laar et al. (2016) argue that the quality of the degree and employability issues have pulled doctoral students to migrate internationally to resource-rich universities worldwide. An earlier study by Altbach (1986) highlighted that with strong research and knowledge systems, western countries' universities have always acted as training centres for their own doctoral students as well as those from developing countries, whose universities are considered peripheral. While this trend has changed over time, many universities in the west still attract and train many doctoral students from developing countries.

Some empirical studies focusing specifically on Asian countries have analysed this trend of doctoral education. Jung (2018) in South Korea finds that doctoral students attending overseas universities were likely to get good academic jobs in research-intensive universities after completion of their PhDs. Shin et al. (2014) assessed the productivity of scholars who attained their degrees in foreign universities as compared to their counterparts who studied in South Korean universities and found that they were likely to be more

research productive after their graduation in some disciplines but were less productive in arts and humanities unless they furthered their research training through postdocs.

Sehoole (2011) analysed the role of the state in attracting international doctoral students in South African universities and found that state support in granting study permits, host country recruitment of students, pushes more international students to apply to South African institutions of higher learning. Another strand of empirical literature focuses on the non-return of foreign higher degree students after their overseas studies. Using data of students from 69 source countries, Bratsberg (1995) assessed the factors that contribute to non-return of foreign students who attended US universities. Results from this study show that political and economic differences in source countries discourage graduating students from returning to their countries.

Several theoretical studies have posited that overseas studies improve the chances of students and graduates getting career opportunities in developed countries, and their likelihood of being hired quickly on return to their home countries. Focusing on trained academics specifically, Ackers (2008) noted that graduates educated in top universities in the UK and US acquire reputational capital which raises their chances of getting hired in top universities.

From these studies, I posit:

> Proposition 2: *While studies show returns to PhD education abroad after graduation, tracer studies on the efficiency of such education in terms of faster completion would be very important empirical contributions to this strand of literature on overseas education.*

## 3. Discussion

### *3.1 African students and overseas PhD education*

In the decades after independence, most African countries were occupied with primary and secondary enrolment as tertiary education was deemed a luxury by the World Bank (Cloete et al., 2011). Thus, with exception of South African and a few East African universities which offer doctoral education, African scholars who embark on their PhD studies have had to move to the west (Europe and North America) and some to Asian countries, since most African countries and universities thereof lack capacities to produce doctoral graduates at home.

Western countries, which originally dominated knowledge production, are still major players today in international knowledge production and dissemination.

Van de Laar et al. (2016) note that some of the doctoral students from sub-Saharan Africa have been able to get scholarships to study at universities of developed countries such as in US, Canada, Europe and in some Asian universities, where they get access to high quality education as these countries have well-established, world-class research universities

Providing extensive figures, Stackhouse and Harle (2014) note that a total of eleven European countries offer higher education support to international doctoral students, with the UK alone hosting about 50 to 70 doctoral students under the Commonwealth Scholarship and Fellowship Plan every year. According to the authors, the UK had 4 130 African students pursuing research degrees, 71% of whom were from sub–Saharan African countries. Van de Laar et al. (2016) also note that with little institutional and financial support, many students from sub-Saharan African countries find it convenient to pursue their doctoral education in the developed countries of North America, Europe and Asia that offer high quality education and offer institutional support to the student. Students can pursue their studies on a full-time basis, which often is not possible when they study in their home countries.

Nerad (2011) provides statistical evidence on the number of international doctoral students in European and US universities. German universities enrolled 3 556 international PhD students between the years 2003 and 2005; UK universities enrolled about 6 650 international doctoral students in those years, and in the same period, US universities enrolled the highest number of PhD students (about 14 424 doctoral students).

Some African universities, especially in South Africa, have also tried to increase doctoral production over time. Mouton (2016) notes that South African universities increased their PhD production because of national policies, labour market demand for doctorates, demand from international students from the rest of Africa, improvement in supervisory quality, and funding. With these factors, South Africa comes out on top as a destination for postgraduate training in Africa.

Cloete et al. (2015) show that of the total graduates in South African universities in 2012, about 27% (521) were from other African countries (14% SADC, and 13% from the rest of Africa). South Africa produced the highest number of graduates (1 249). Van Schalkwyk et al. (2021) show that 4 out of 10 doctoral students enrolled in South African universities were international students. This shows that the figures of doctoral students from the rest of Africa grew from 9% in 2000 to 34% in 2019. Scherer and Sooryamoorthy (2022) highlight

that, compared to other parts of Africa, South Africa has a good and strong education system, strong framework for doctoral training and is considered world class. The government has put in place programmes and policies for strengthening doctoral training and research. This makes South Africa a doctoral training destination for the rest of African students after Europe and North America (particularly US).

### *3.2 Overseas education and doctoral completion*

Comparative literature on doctoral completion globally remains a challenge particularly on international doctoral students. Although some statistical evidence exists on doctoral enrolment in European and US contexts, it is a big challenge to establish numbers of international doctoral student completion rates and times. Literature is limited as well on the comparisons among countries as far as doctoral completion is concerned. A few studies make such attempts as discussed below.

In an extensive review of completion rates of doctoral students, Cloete, and Mouton (2015) make an international comparison of doctoral completion rates in Norway, UK, Canada, US, and South Africa. Across countries, doctoral completion rates vary by disciplines and the model of study (full-time vs part-time). They show among other things that international students complete their PhDs faster than domestic ones specifically in the UK and US. Van de Laar et al. (2017) note that on average 20% of (full-time) doctoral students enrolled at universities in the developed world complete their degrees and argue that this might be different in contexts where students do not have access to quality libraries, internet and supervisors who are well trained in doctoral supervision. They also note that whereas about 2% of the population in developed countries graduated with a PhD, the figure lies between 0 and 0.5% of the population south of the Sahara. They also warn that the rate of failures will be higher if conditions deteriorate on the candidates' side as this situation has pushed many students to seek admission in overseas countries, subsequently creating brain drain in their home countries. In developing countries, evidence shows that although doctoral enrolment has gradually increased, graduation rates remain low.

Cloete et al. (2015) show that of those enrolled at South African universities, less than 20% graduate and elsewhere in Africa, funding problems, supervisory deficiency led to lower completion rates. Mouton (2011) argues that although South African doctoral completion rates compare almost with the developed world, there are differences in the age of completion. With insufficient funding,

most students study part time (almost 70%) in South Africa and most graduate at 42 years on average compared to US, Canada and UK doctoral graduates who complete at 33.3 years on average.

Cloete et al. (2015) compare doctoral completion rates and times for Norway (2001/2002 cohort), Canada (2001 cohort), UK (1996/97 cohort), US (1992/93/94 cohort), and South Africa (2006 cohort). Figures show that it took 8 years for doctoral students in Norway to complete their PhDs, 9 years for those studying in Canada, 7 for the UK students, 10 years for US, and 7 years for those studying in south Africa. However, there are big differences with completion rates among those countries. Norway had the highest doctoral completion rate (76%); followed by Canada (71%), UK (69%), US (57%), and South Africa with relatively lowest rate (46%).

## 4. Conclusion and future studies

The focus of this chapter was on investigating the extent to which overseas PhD education contributes to faster completion rates and shorter times. Although research evidence remains scant on this aspect, a few studies indeed show that African PhD scholars pursuing doctoral education in overseas countries complete faster than African doctoral scholars pursuing their education in African universities. This study adds to the debate on two strands of the literature. The first contribution is on establishing the literature linking overseas education to doctoral completion. The second contribution is on internationalization by specifically focusing on African students pursuing doctoral studies in overseas countries.

This study recommends that African universities and countries borrow experience from research universities in the North to strengthen their doctoral programmes to help doctoral students complete on time. Notably, among other issues, this would include substantial investment in PhD funding for students to enroll full time as most African students enroll on a part-time basis. Second, more training on doctoral supervision would help students acquire quality mentorship from their supervisors. The Centre for Evaluation on Research, Science and Technology (CREST) of Stellenbosch University has pioneered PhD supervisor training in Africa. Other universities from the African continent should borrow insights from CREST on such training. If this is not possible, they should encourage their staff to attend this kind of training at CREST.

Whereas attempts have been made to estimate and establish statistical evidence on doctoral completion and rates and times across different contexts, international comparative studies on doctoral completion remain very scarce.

Future studies could help provide international comparisons of doctoral completion, times, rates, as well as attrition rates.

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