



## Challenges and Opportunities in East African Doctoral Supervision

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### Abstract

In a changing doctoral supervision environment, challenges and opportunities in doctoral supervision need to be better understood to provide the right support for quality doctoral supervision. This paper offers a contextual literature review of the challenges and opportunities in the East African higher education landscape. It is demonstrated that despite the new approaches that have emerged over time on effective doctoral supervision, universities in East Africa still face low graduate completion rates and poor research output. This emerges from key challenges including poor student-supervisor relationships, differences in research orientation between students and their supervisors, and administrative issues including a shortage of doctoral supervisors, high supervisor workload, and inadequate administrative support. Nonetheless, several opportunities for improving doctoral supervision in East Africa are identified including capacity building, collaborative supervision, and leveraging of technology. It is therefore recommended that Universities take advantage of emerging solutions to challenges in doctoral supervision especially inter-university collaboration and capacity-building.

**Keywords:** *Challenges, Opportunities, Doctoral Supervision*

### 1.0 Introduction

Doctoral supervision is considered as an educational partnership that involves a supervisor and a doctoral student. The key intention of the teamwork is to support the novice researcher (doctoral student) develop proficiency in research through undertaking a research project and delivering a scholarly piece of work (Lison et al., 2018). Turner (2015) added that the rudimentary basis of doctoral supervision stems from the trust and the shared interests between the supervisor and the doctoral student. Hence, educational partnership calls for mutual respect in addition to flexibility

and cooperation, beyond the reputation and the expertise of the supervisor (Azure, 2016). Abiddin et al. (2011) argued that supervisors play a key role in cultivating a positive experience for doctoral students by providing professional advice, in that, the doctoral students count on their supervisors to assist them fit in to the broad research culture, professional development and career progression.

As a research project advances, the doctoral student can develop more positively from the ideas and work that unfold with it, at the same time learning to manage his communications, creativity and time. McCallin and Nayar (2012) thus suggested that the nature of doctoral supervision is a significant determinant towards completion of doctoral studies as it mirrors a practice that balances commitment and spaciousness with the purpose of empowering students to become self-dependent. The aim of doctoral supervision is to train the research student to be an independent researcher (Cekiso, Tshotsho, Masha & Saziwa, 2019). The quality and success of doctoral education largely rely on effective supervision, and for decades there have been efforts by universities and supervisors to improve the quality of doctoral supervision (Grossman & Crowther, 2015).

In East African universities, doctoral supervision presents a significant bottleneck to the quality of graduate output. For instance, Kibalirwandi et al (2023) documented the case of Yusuf Serunkuma versus Professor Mahmood Mandani where a court ruled in favor of Serunkuma for frustration of the candidate through mismanagement of the doctoral supervision process. This case demonstrated the critical need to attend to doctoral supervision as pointed out by Syomwene (2021), and Barasa and Omulando (2018). While much of the scholarship on doctoral supervision is prescriptive, little casts light on the actual challenges and opportunities therein (Kibalirwandi, 2023; Kessio, 2022; Igumbor et al, 2021; Fongwa et al, 2022). This paper attempts to reflect on the main challenges and existing opportunities for doctoral research supervision in East African universities and to explore ways of utilizing the available opportunities to improve doctoral supervision in universities.

### ***1.1 Research objective***

The objective of this paper was to explore the challenges and opportunities of doctoral supervision in universities in East Africa. The paper therefore begins with a discussion of some key challenges encountered within the doctoral supervision enterprise within the East African context, then segues into the main opportunities that are emerging to make doctoral supervision more effective and efficient.

### **2.0 Methodology**

In this article, we conducted a systematic literature review only including studies that addressed issues on supervision of doctoral students in East Africa. The literature search through Google Scholar and university repositories was guided by the key words: “supervision of doctoral students in East African universities”, “supervision of doctoral students in Kenyan universities” or any East African country, “challenges of doctoral students in East African universities”, “opportunities for doctoral supervision in East African universities”, “challenges and opportunities of doctoral

supervision in East African universities”, “Challenges and opportunities of doctoral students in sub-Saharan Africa”. We found several potential articles, and for each article, we first read the abstract and skimmed through the full text to determine their relevance to our research topic before including them in the review. From the review, we extracted information relating to the challenges and opportunities of doctoral supervision in East African universities. We filtered the information using content analysis and thus identified the main challenges and opportunities in doctoral supervision in East Africa, as discussed in the section that follows.

### **3.0 Challenges facing supervision of doctoral studies in East Africa**

#### ***3.1 Student-supervisor relationship***

Higher education institutions' knowledge production through research capacity is critical to a country's sustainable development and society welfare (World Bank, 2009). Studies have shown that the knowledge society of the African region is still lagging (Jowi & Sehoole, 2017). Although higher education institutions today have recorded a commendable increase in enrolment of doctoral students, universities are still facing the challenge of low completion rates of doctoral degrees with the majority of the students stagnating at the research phase of the study (Sverdlik et al, 2018; Skakni, 2016). Research reveals that doctoral students' success majorly depends on the effectiveness of supervision however, several factors come into play for effective supervision (Mulinge, & Arasa, 2013; Masek & Alias, 2020; Mothiba et al., 2019). Rugut (2017) points out that a good student-supervisor relationship that is key to efficient completion of study entails; continuous flexible and diplomatic negotiations between the parties, offers commitment and support, foster collaboration and honesty, and is built on mutual commitment. He reiterates that giving timely feedback, quality guidance and efficient communication is key to timely completion of doctoral studies. Quality of doctoral supervision is therefore a central factor that supports study completion (National Graduate Council, 2012).

Consequently, there is a need to get a deeper insight into doctoral supervision though considered a complex and subtle task that range from teaching postgraduate students to research guidance with no clear framework to draw upon (Conell & Manathunga, 2012; Green, 2012). Supervisors have to find a delicate and shifting balance between guiding students to acquire research skills and giving them autonomy to acquire confidence and independence in research (Overall, Deane, & Peterson 2011). Other researchers argued that the role of a supervisor besides guiding a doctoral student to make a scientific contribution is also to perform the function of mentoring candidates; introducing them to academic research community and offering support to assume positions of leadership (Manderson et al., 2017).

Student-supervisor relationship is a factor of study persistence, completion rates, and time to completion; a cordial student-supervisor relationship decreases students' intentions to quit, increases rates of completion and enhances timely completion of the program (Castelló et al., 2017; McCallin & Nayar, 2012). Crucial to achieving on-time graduation of a doctoral candidate is effective research supervision in the program irrespective of varied doctoral students' capabilities

(Richards & Fletcher, 2020). Effective supervision according to Igumbor et al. (2020) and Uwizeye et al. (2020), is an interactional process between a student and a supervisor that requires the collaborative academic engagement of both parties in the spirit of professionalism, open-mindedness, respect, and creation of a conducive supervision environment. Effective supervision requires that there is clarity in mutual expectations and respective needs of student and supervisor that will enable the adoption of best and contextual research practices (Bégin, 2018; Jutras et al, 2010). The challenges of doctoral supervision emanate from a lack of trust and openness, shared interest, reciprocal respect, and lack of communication in the student/supervisor educational partnership (Bacwayo et al, 2017; Maxwell & Smyth, 2011; Halse & Malfroy, 2010).

Progress and quality in research may be realized if supervisors are responsive to students' academic needs (van Rooij et al, 2019) and communication between students and research directors is clear, transparent, constructive, and frequent (Lison, 2016). The supervisory relationship has a great role in shaping the professional and emotional development of graduate students (Doğan & Bıkmaz, 2015). Establishing an effective supervision process requires that there is a mutual understanding of student and supervisor expectations, appropriate thinking, fit in personality, and supervision styles (Desni et al, 2019; Sverdlik et al, 2018). Supervisor development and capacity building through training or workshops are among the key strategies proposed for enhancing the effectiveness of a supervision process (Manderson et al., 2017; Baptista & Huet, 2012).

Despite East African Universities recording an increase in post-graduate enrolment over the years, they are still struggling with low research output and undesirable rates of completion in doctoral studies (Bacwayo et al, 2017). Research reveals that the success of doctoral students is pegged more on effective and quality supervision which balances between instilling in students research knowledge and empowering them to be autonomous and independent researchers among other factors (Igumbor et al., 2020; Mulinge, & Arasa, 2013). This implies that effectiveness in supervisory strategies is yet to be achieved and that there is a need to enhance effective supervision process through supervisor development and capacity building. There should be clear mutual expectations and needs of the students and supervisors in the collaboration.

### ***3.2 Diverse student/supervisor research orientation***

Although doctoral students are expected to transition to independent researchers who are capable of conducting research autonomously with the guidance of supervisors, both student and supervisor must have a common research interest (Han & Xu, 2021). Attaining a perfect match in the research orientation of the doctoral student and that of the supervisor is still a challenge arising from a growing number of enrolled students and diversity in post-graduate research programs (Gube et al, 2017). In reality, academics are in most cases under pressure to take up supervision of students whose research areas are at the periphery of their expert knowledge (Manathunga, 2012). Consequently, the few qualified supervisors are assigned students of varied research interests resulting in topic and methodological expertise mismatch which inhibits general progress, and development and eventually negatively impacts on potential for on-time completion of doctoral candidates (Muraraneza et al, 2020).

In some cases, doctoral students are given inadequate research advice due to supervisors' inadequacy of knowledge and skills in the research area (Gunnarsson et al, 2013). Ideally, supervisors are expected to be competent and enthusiastic about student's research areas to be able to efficiently guide them (Chiappetta-Swanson & Watt, 2011). However, supervisors may need to support students to get assistance in areas not within their expertise by suggesting possible experts in the specific areas of need to the students.

When supervisors and doctoral students with similar focus in research areas and interests are matched, a stronger student /supervisor relationship that operates at a higher level is experienced (Guccione & Bryan, 2023). Nonetheless, both parties may have personal supervisory preferences (Woodhouse & Wood, 2020; Bryan & Guccione, 2018). In addition, a successful supervisory process largely depends on doctoral students' prowess to demonstrate outstanding written and verbal communication skills, mature thinking, emotional intelligence that is well developed, and resilience of high levels (Casey et al., 2022; Lee, 2010; Lee, 2008). It is equally important that supervisors act as research role models to doctoral students; by actively contributing to the scholarly community (Friedrich-Nel, & Mac Kinnon, 2019; McAlpine, 2013). Supervision however, is a learning experience for both students and supervisors; academics need to understand the strengths and limitations of the supervisee and their own, and have a reflection on the progress and challenges to come up with suitable and effective support and response for similar research situations in future. (Friedrich-Nel, & Mac Kinnon, 2019; Conwey et al., 2016).

### **3.3 Shortage of Doctoral Supervisors**

The recent massification of education that resulted from educational democratization and globalization has led to an influx of students to higher institutions causing constraints to the institutional infrastructure as well as available human resources (Muema & Lavery 2018). Rapid increase in the number of universities and growth in student enrolment has resulted in quality crisis in higher education (Jowi & Obamba 2013). Many African universities especially the newly established public and private universities over-rely on adjunct faculty due to shortage in academic staff with PhD qualification (Asiimwe, 2019; Barasa & Omulando, 2017; Mukhwana et al., 2016). Rwanda, for example, is faced with general dearth of local academic staff with PhD qualification, although the percentage of academic staff with PhD qualification has recorded an increase from 18% in 2013 to 26% in 2020, it is still relatively low compared to increase in post graduate enrolment in Rwanda over the years (University of Rwanda, 2020; Tvedten et al, 2018).

In Kenya, by the year 2017 most universities hardly had 50% of academic staff with doctoral qualification (Jowi, 2021; Commission for University Education, 2016), with most of them being aging academic staff in the institutions.

The few academic staff are faced with challenges of huge class sizes, increased workload, inadequate infrastructure and instructional facilities and less motivated doctoral students Mukhwana et al. (2016). The shortage in academic staff has led to decline in quality of educational outcome and has also led to the rise in students to supervisor ratio which is the basis of poor mentorship and supervision of graduate students (Bacwayoet al, 2017). Cloete et al. (2015)

lamented that this serious deficit overloads the few staff with overwhelming number of post-graduate students to supervise, which impacts negatively on the quality of doctoral supervision. Jowi (2021), Cloete et al., (2015); and Herman and Schoole (2017) pointed out that inadequate student and supervisor support system, poor remuneration for supervision and unfavorable working environment are common challenges that further compromises quality of supervision.

### ***3.4 Inadequate administrative support***

Another major challenge of supervision in East African universities is lack of efficient administrative support for supervisors in Universities (Ndayambaje, 2018; Kimani, 2014). Supervision is a demanding task that necessitates extra effort from the supervisor and the student. Supervisors are usually overburdened by heavy tasks, including teaching, research and administrative duties (Askew et al., 2016; Syomwene, 2021). These tasks reduce the supervisors' concentration from the student's work to other responsibilities. It also limits the time spent together by the student and the supervisor. Often in many universities, especially in East Africa, there is little support given to the supervisor to ensure effective supervision (Askew et al., 2016). In most cases, there is also no specific time allocated for the supervisor to meet with students.

It is therefore, the responsibility of the university management to create well-organized administrative support for supervisors, and provide an appropriate working environment for the doctoral students and supervisors despite inadequate resources (Mwirichia et al, 2017; Kessio, 2022). Most universities in East Africa do not have well-documented and clear guidelines that provide support mechanisms for supervisors to ensure effective supervision (Shafiq et al., 2020). There should be support mechanisms which are informed by the experiences of supervisors and postgraduate students (Shafiq et al., 2020). This ensures that the specific needs of supervisors and students are captured in the support process. Administrative support should also include quality control processes as well as ways of fast-tracking student-supervisor engagement and progress (Firth & Martens, 2008).

### ***3.5 Limited supervisor capacity***

Lack of training and capacity building for supervisors is also another challenge in universities in East Africa (Kaguhangire-Barifaijo & Nkata, 2021; Bacwayo et al, 2017). A well-developed supervisor training framework that is visible and functional in universities works well in producing effective supervisors (Masek & Alias, 2020). However, universities in East Africa have not prioritized the training and capacity building of supervisors (Bacwayo et al., 2017). It is therefore important for universities to embed a supervisor training framework within the policies governing postgraduate research in the institution.

Different frameworks can be developed in a university and supervisors may have different opinions about each framework and its unique characteristics (Masek & Alias, 2020). It therefore means that different universities may choose to implement supervisor training in diverse, but equally effective, ways. The most important issue is to develop a supervision training framework

that meets the needs of supervisors and students in the university. Such a framework should be recognized as a university policy that guides postgraduate supervision (Masek & Alias, 2020).

The problem of lack of supervision capacity also affects the quality of supervision (Grossman & Crowther, 2015). Many universities in East Africa are generally understaffed and most of the teaching staff in universities are tutorial fellows or those who only have master's qualifications and cannot supervise PhD students or even master's students (Bacwayo et al., 2017). This means that senior lecturers who are mostly doctors and professors in Kenyan universities have to cope with the workload of teaching, marking of examinations; own research, publications as well as managing work as departmental heads (Kimani 2014). These lecturers have no time for their students, and this creates the problem of non-completion or taking too long to complete postgraduate studies (Bacwayo et al., 2017). The percentage of non-completion is seen to be too high, sometimes going above 50% while those who are retained take very long before completing their doctoral studies, often more than the expected three years (Bacwayo et al., 2017).

### ***3.6 Lack of Funding***

The countries in East Africa are developing countries that are not necessarily stable economically (Mouton, 2011). Higher institution systems in East Africa are engulfed with weak culture of research and have limited resources for research capacity (Syomwene 2021; Ndayambaje, 2018; Barasa & Omulando, 2017). There is therefore inadequate funding in universities which also affects the supervision process. The quality of teaching and training researchers is negatively affected by the poor financing. This also affects the standards of teaching, supervision and research in universities (Bernard, 2018). Universities should have the financial capability of promoting quality research and training by funding research, training supervisors, employing enough and qualified staff and reasonable remuneration for supervisors and researchers.

Research conducted in several ARUA (African Research Universities Alliance) member countries in which Kenya, Tanzania and Uganda are included, revealed that there has been a decline in universities' funding by the public which has resulted to adverse effects on access to doctoral education. Consequently, some institutions were now progressively opting to commercialization of academic offerings, postgraduate education included (Kenya country report, p. 14). In this regard inadequate funding has exerted more pressure on supervisors who must be contented with huge institutional workloads while engaging in part-time teaching and supervising elsewhere to supplement their low pays, this affects quality and throughput rates of doctoral-programmes (Fongwa et al 2022).

The lack of supervision capacity, overworked supervisors and poor funding has created a bigger challenge of inadequate supervision in universities (Mwirichia et al, 2017; Bernard, 2018). Many students have poor research skills because of lack of strong mentorship and guidance by their supervisors (Bernard, 2018). A study by Syomwene (2021) revealed that 76% of students in a selected university in Kenya said that they have a problem in identifying and developing a research problem, whereas 72 % had problems in analyzing the data. Supervisors seem to pay little attention to their students because they supervise several students at the same (Bacwayo et al.,

2017). It is therefore clear that lack of mentorship and poor research skills scuttle the process of supervision in many universities in East Africa.

### ***3.7 Lack of Mentorship***

Mentorship is one of the key functions of a doctoral supervisor. Indeed, doctoral supervision and mentorship often go hand in hand (Rukundo, 2019; Obamba, 2017). It entails the provision of personalized support to individual students in specific aspects of their doctoral journey. This may include academic writing, publication of research, designing and executing a research project, leadership development, and guidance on career pathways (Igumbor et al, 2021; Syomwene, 2021). Through mentorship, therefore, doctoral students glean from the expertise of their supervisors and are thus poised to be much more productive as researchers and academics. Unfortunately, lack of mentorship has been highlighted as a challenge to doctoral supervision in East African universities. Syomwene (2021) maintained that for mentorship to be effective, supervisors must have accumulated the appropriate qualifications and experience. This is often not possible in East African universities where new PhD graduates are often compelled to take on supervision duties with the expectation that their on-the-job experience will suffice (Rukundo, 2017; Kibaliwandu et al, 2023). This places doctoral students at a disadvantage as their training is rendered less holistic.

## **4.0 Opportunities for Doctoral Supervision in East Africa**

Despite the bevy of challenges plaguing doctoral supervisors and their students in East Africa, a number of opportunities present themselves in the 21<sup>st</sup> Century. Such opportunities, if leveraged, can yield manifold benefits for doctoral level education and research output in East Africa. Insight about these opportunities was drawn from the authors' experiences in their previous and ongoing graduate studies. The authors also drew from literature on doctorate supervision using the search words: "opportunities in doctoral supervision", "effective doctoral supervision". Opportunities was conceptualized as any avenue for improvement of the doctoral supervision process. Three major opportunities that emerged are discussed in the following section.

### ***4.1 Capacity building***

A doctoral supervisor wears many hats including that of teacher, mentor, advisor, examiner, even friend and supporter (Masek & Alias, 2020). Unfortunately, one the key causes of inefficient doctoral supervision in East Africa has been identified as the lack of capacity of these individuals tasked with guiding doctoral students. For starters, according to Jowi (2021), the number of academic staffs with doctoral qualifications in African universities is relatively small. Besides acquiring the pre-requisite qualifications, doctoral supervisors are expected to have the knowledge and skill necessary to handle a doctoral candidate to successful completion. These include: mentorship, communication, networking, preparing winning proposals for grant funding, not to mention knowledge and skill in a variety of research methodologies, use of diverse research software and library tools both physical and online (Igumbor et al., 2022; Masek & Alias, 2020).



Previously, doctoral supervisors in East Africa have been left to their own devices to gain and improve these aspects of their work. If any training is provided it is often heavy on the administrative aspects of supervision and not much else, as pointed out by Polkinghorne et al. (2023). Recently, however, a number of programs have come up to support doctoral supervisors to develop these critical skills. Such programs include: The University of Stellenbosch's Centre for Research on Evaluation, Science and Technology (CREST) online training course for supervisors of doctoral candidates at African universities, and the DAAD Capacity Building Program for Lecturers and Supervisors (CABLES). These programs present an excellent opportunity for the improvement of the quality of doctoral supervision and subsequently doctoral research.

Training modules covered by these two programs include: student and supervisor roles, models of supervision, coaching and mentoring, research management, online pedagogical competences, and supervision ethics. These programs rely on a mentorship style whereby seasoned supervisors guide attendees through the various aspects of effective supervision, an approach that was advocated for by Polkinghorne et al., (2023). While no evaluation studies have been conducted yet as to the effectiveness of these programs in supporting doctoral students to complete their studies, the supervisory gaps currently belaboring East African doctoral supervision provides sufficient impetus to encourage and facilitate more supervisors to participate in these capacity-building programs.

#### ***4.2 Collaborative supervision***

In most African universities, the mode of supervision is patterned after the European practice such that a student is assigned one or two supervisors (Masek & Alias, 2020), often placing a high demand on the supervisor as they have to fill several shoes simultaneously including advisor, mentor, teacher, and examiner. This, in addition to the multiple duties that academic staff often take on makes the supervision process quite ineffective and inefficient. Fortunately, more East African universities are embracing the trend of collaborative supervision (Fongwa et al., 2022).

Collaborative supervision entails cooperation between two or more supervisors in simultaneously supervising the same student, often with one taking the lead and others acting as co-supervisors (Bacwayo et al., 2017; Masek & Alias, 2020; Fongwa et al., 2022)). This style of collaborative supervision is prevalent in scientific laboratories where a doctoral student often works in group consisting of a professor, lecturers, postdocs, and peers (Bacwayo et al., 2017). Social scientists are embracing this practice more as it offers a process-oriented, community-based outlook to research (Maor et al., 2016).

Thus, collaborative supervision offers opportunities for improved supervision in several aspects. To begin with, the doctoral supervisor's workload is shared among several professionals who can contribute their expertise and talents to supporting the student. Secondly, as underscored by Polkinghorne et al. (2023), and Grossman and Crowther (2015), inexperienced supervisors have an opportunity to observe and learn effective supervision from their experienced seniors within the supervisory team. Thus, junior supervisors are provided with on-the-job mentorship which

supports them to navigate the many vicissitudes of doctoral supervision. Collaborative supervision becomes an even richer experience when the team of supervisors is constituted from different universities or even countries. Granted, this comes with its own set of challenges including: diverse supervisory approaches, different supervisor expectations, and unbalanced labour division (Grossman & Crowther, 2015). However, the dividends of increased exposure, expertise, and learning opportunities for both students and supervisors are worth the effort.

### ***4.3 Strengthening of Student-Supervisor Relationships***

Hubbard (2018) contended that one of the key ingredients for an effective doctoral supervision is the mutual trust shared between the doctoral student and the supervisor. That is, the doctoral students should trust the skills and the assessment of the supervisor, while the supervisor ought to trust the intelligence, ability and the achievements of the doctoral student in producing a high-level quality scholarly piece of work. Lison et al. (2018) argued that often, one of the most dominant factors that impacts doctoral students' experiences is their relationship with their supervisor. According to the kind of relationship between the doctoral student and his supervisor will have an effect on the doctoral student's studies and success rates. It is thus expected that a professional supervisor will provide enough direction for students to acquire relevant research skills while allowing them autonomy to develop as confident independent researchers (Turner, 2015). Furthermore, for the development of the relationship, an agreement, which can be either implicit or explicit, will connect the doctoral student and the supervisor to formally agree on the product, the process, the means, and the needs of the research work (Lison et al., 2018).

Masek and Alias (2020) were of the view that the supervisor and the doctoral student should maintain an honest and open communication about their expectations, while providing space for negotiations so as to best realise individual researcher's needs. Similarly, Azure (2016) connoted that communication is essential it allows for voicing of the doctoral students needs and subsequent address by the supervisor. Therefore, the supervisor and the doctoral student must maintain clear, frequent and constructive communication. Supervision should, therefore, entail written and verbal communication that clearly explain processes, outcomes and the strategies that will support growth along the learning journey (Gill & Burnard, 2008). Hence, over time, transparent communication provides an enabling environment for each partner to communicate more clearly and transparently in a way that bring out their needs, uncertainties and frustrations.

### ***4.4 Technology in supervision***

Collaborations and networks among universities globally have grown tremendously in recent years. This presents an important avenue by which East African universities can strengthen their doctoral supervision capacity. Supervisors for doctoral students can be sourced from partner universities across the world, made possible by technological facilities such as Zoom. This practice is known as virtual/remote/online supervision. Kenyatta University in Kenya has utilized this model of supervision with considerable success (Obamba, 2017). Virtual supervision bears numerous advantages including it is less resource-intensive once well-established, it allows greater flexibility of supervisor-student interaction, and it allows doctoral students and universities to benefit from global expertise (Maor et al., 2016; Obamba, 2017). Maor et al. (2016) reported that

the use of technological spaces for supervision encouraged the development of scholarly communities thereby reducing isolation in doctoral studies and improving completion rates. However, like all other technology-assisted learning platforms, online supervision requires the availability of requisite infrastructure, as well as high levels of discipline and self-drive from all parties involved.

## 5.0 Conclusion

This paper set out to assess the major challenges facing doctoral supervision in East Africa and thereafter to explore the opportunities available to improve it. Doctoral completion rates in East African universities over the past several years are on record for being worryingly low. Though the literature on this in the East African context is still limited, scholarship has revealed gaping loopholes in university staff supervision capacity. Overworking of the limited number of supervisors as well as lack of technical know-how about the supervision process. This has adversely impacted the quality of research output. However, all hope is not lost as many universities are now taking advantage of various opportunities to improve doctoral supervision. Doctoral supervisors now have the opportunity to be trained and mentored in this craft. In-house opportunities for mentorship are availed by facilities like co-supervision which is often enhanced by online technology. Externally, a few training programs have emerged that are specifically tailored to supporting doctoral supervisors in conducting effective supervision of students to completion of the doctoral degree. Therefore, there is hope for improved doctoral supervision in East Africa. It is therefore recommended that universities, doctoral supervisors, and doctoral students realistically take stock of their limitations and expediently resolve them in an open-minded manner. Universities and doctoral supervisors should also actively seek out partnerships and collaborations with colleagues and departments from other well-established universities in order to build their capacity and facilitate exchange of ideas. Finally, both students and supervisors should be proactive about maintaining a positive and productive supervisory relationship by leveraging the various opportunities available including technology, and collaborative supervision.

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