



The Sustainability of **Higher Education in** Sub-Saharan Africa

Quality Assurance Perspectives

Edited by Peter Neema-Abooki

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Peter Neema-Abooki Editor

The Sustainability of Higher Education in Sub-Saharan Africa

Quality Assurance Perspectives



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This book is dedicated with profound felicitations to

His Eminence Antoine Cardinal Dr Kambanda Classmate-n-Friend, Former Bishop of Kibungo Archbishop of Kigali and Prince of the Church Umugabo Nyamugabo to whom was bestowed Ecclesial ranks of Episcopate and Cardinalate

Foreword

The Sustainability of Higher Education in Sub-Sahara Africa: Quality Assurance Perspectives is not just a great resource for higher education institutions (HEIs) in the region; it is also for all those who truly want to invest in quality education as a pillar for the sustainability of HEIs in Africa and the globe. Higher education (HE) is an engine of development, thus its quality matters. This book is timely, fascinating, and appealing as it follows a two-year period of disruption of normalcy by the COVID-19 pandemic, imposing new directions for quality assurance (QA) and sustainability of HE. Indeed, it is opportune for Neema-Abooki to call for experiences, research studies, and observations from gurus in the continent to contribute to an invaluable book on QA and sustainability of the HE in the region.

Abooki, with ingenuity and deep experience in leadership and management in HEIs, is adept to be an editor of this book. He is a Professor of Higher Educational Management and Administration with in-depth experiences that weave together pertinent areas of quality and sustainability of HE in Africa. He brings decades of professional experience in these areas having worked in a number of African countries. His ability to work with others has made it possible to attract contributions from authors in different African countries, who, like him, have a good understanding of issues of quality and sustainability in the Sub-Saharan countries. They have contributed valuable experiences, research studies, and practices that make this book a rich resource.

Abooki is an avid author. His other books include Quality Assessment and Enhancement in Higher Education in Africa ISBN: 9781032308142 Pages: 312 (Copyright Year 2023); and Quality Assurance in Higher Education in Eastern and Southern Africa: Regional and Continental Perspectives ISBN: 9780367692834; ISBN-10: 036769283X Pages: 314 (Copyright Year 2022)—both published by Taylor and Francis, Routledge, UK, and USA. I am well aware that several other books are in the offing. Other international publications credited to his name include "Quality Higher Education in Africa: Assessment and Enhancement Perspectives", "Teacher Preparation by Universities and Implications to Quality Education in Uganda", "Management of Research-Related Issues in Higher Education Institutions in Africa: A Case of Makerere and Nairobi Universities in East Africa", "Assessment and Enhancement: Quality Perspectives in Higher Education", "Quality Education in Eastern and Southern Africa: Prospectives and Retrospectives", "Academic Quality in the Public Universities in Eastern and Southern Africa: A Comparative Study of Makerere University and the University of Cape Town", "Internal-Stakeholder-Perception of the Quality of Teacher-Educators at Makerere University", "Administration-Management Distinction in Higher Education: A Quality Management Perspective", "Own-Income Generation: A Pillar of Financial Sustainability in Institutions of Higher Learning", "Cross Border Education and Its Influence on the Quality of Higher Education", "Financing Higher Education: Income Generation in Ugandan Public Universities", "Scope of Quality Assurance in Higher Education Programmes and Projects", "Financial Resource Mobilisation Projects and Its Relationship to Academic Staff Commitment in Uganda Martyrs University in Uganda", "Resource Input Model and Its Effects on Quality of Education in Makerere University", "Gender Issues in Project Planning and Management", "Institutional Autonomy and Governance vis-à-vis the Management of Massification: A Case of Science-Based Faculties at Gulu University in Northern Uganda", Massification Versus Management of Research Publication and Community Engagement in the Science-Based Departments in Uganda: A Case of Gulu University", "Influence of Human Power Planning on Academic Staff and Their Service Delivery in the College of Education and External Studies", "Is Effective Teaching and Learning the Solution to Quality Management of Massification in Science-Based Faculties in Gulu University?", "Academic Staff Competence Development as a Gap in Quality Assurance in

Universities in Uganda", "Pedagogical Knowledge and Effectiveness of Academic Staff in the Teaching-Learning Process at Makerere University", "Mediating Learner-Content Interaction Using Emerging Technologies: A Case of History Education at Makerere University", "Quality Assurance and the Application of Legitimacy Model in Higher Education Institutions", "Mediating Learner-Learner Interaction Using Emerging Technologies: A Case of History Education at Makerere University", "Supervision of Research at Makerere University: Perspective at the College of Education and External Studies", "Student-Research Affairs: Retrospects and Prospects at the College of Education and External Studies at the Premier University in Uganda", "Impact of E-Learning Strategy on Students' Academic Performance at Strathmore University in Kenya", "Managerial Systems as Measures of Quality Management in Universities in Uganda", "Contrapreneurship: A Dilemma in the Management of Higher Education Institutions", "Involvement of the Private Sector in the Financing of Academic Programmes at the Primogenial University in Uganda", "Challenges and Strategies of Improving Staff Development in Higher Education Institutions in "Collaboration: A Benchmark in the Management of Universities", "Academic Staff Professional Development at Kyambogo University", "Contrapreneurship in Higher Educational Organisations: Perspectives of Total Quality Management", "Participation as a Prerequisite to Best Practice in the Management of Universities: Perspectives of Total Quality Management", "Students' Personal Characteristics and Completion of Postgraduate Research in the College of Education and External Studies at Makerere University", "E-Learning: A Management-Oriented Fourfold Strategy in Some East African Universities", "Developing a Web Explicit Research Strategy Theory in African Universities: A Cross-Comparison of Specific Regional Efforts Through an Analysis of Research Web Pages", "Characteristics of Management at Selected Universities in Uganda", "Knowledge-Based Economies in Selected Universities in Uganda", "Professional Development: The Case of Academic Staff in a Ugandan Public University", "Policy Initiatives on Science and Technology Education in Uganda: Extent of Implementation at the Post-Basic Level", "Quality Assurance in African Higher Education: Vision and Mission Perspectives", "Quality Assurance in African Higher Education: Environmental Perspectives", "Systemic Design of Instruction on Achieving the Goals of Undergraduate-Level Education in Universities: A

in Sub-Saharan Africa.

Case Study of Makerere University", "The Multifold Challenge of Quality in Higher Education: Nineteen Ninety African Perspective", "Total Quality Management and the Governance of Educational Institutions in Sub-Saharan Africa: A Case of Universities in Uganda", "Total Quality Management in Organisations: Challenges and Strategies", and "Integration of Total Quality Management in the Management of Universities in Uganda"—just to mention a few. He has now taken another topical focus on exploring the quality and sustainability of HE institutions

The opening chapter, "Sustainability as an Acme of Quality Assurance in Higher Education", arrays an overview of the prospects of quality assurance (QA) and sustainability of higher education (HE) in the continent and depicts the context, uniqueness, major contribution, and the lessons learned.

In Part I of the book: Chapter 2 advances Digital Learning as a model of QA in HE while Chapter 3 spells out insights on monitoring and evaluation in HE. Chapter 4 castigates the quality of teaching and learning in private institutions and calls for continuous review of the curricula. Chapter 5 probes the relationship between students' virtual learning satisfaction and the virtual teaching service delivery of academic staff. Chapter 6 rules on the role of HE in the implementation of Sustainable Development Goals (SDGs) amidst the triple mission of teaching and learning, research, and community engagements. Chapter 7 counsels on a framework for graduate employability for advancing HE curricula and the SDGs. Chapter 8 focuses on SDG 4 via learners' prior numerical cognition as a predictor of educational performance.

In Part II: Chapter 9 posits that innovation aligns with the scaling features of involving key stakeholders and with indulging in structured pedagogy. Meanwhile, Chapter 10 emphasises the use of sustainable interactive teaching methods in view of enhancing employability skills. Chapter 11 underscores the need for strengthening collaboration between the university, government, and industry. Chapter 12, outlining the role of HE as an engine of societal development, stresses a pluralistic worldview and hybrid model in a bid to decolonise the HE sector. Chapter 13 advocates for participating in and promoting the energy sustainability agenda as one of the emerging critical issues in the twenty-first century. Chapter 14 analyses the change from the neoliberal-driven QA regimes to a QA culture for the sustainability of the quality of African HE. The last chapter (Chapter 15)

upholds HE aspects of Africa's readiness for the Fourth Industrial Revolution (4IR) and labour demands for the future of work.

All chapters render a profound exposé on HE and the SDGs. Each chapter is self-contained. Readers do not need to read the book in any given sequence. Chapter headings are there as guides to preferred chapters. No matter what your interests may be, there is something for diverse readers.

This book, The Sustainability of Higher Education in Sub-Saharan Africa: Quality Assurance Perspectives, tangibly leaves a legacy for all interested in sustainability and quality in HEIs. I, therefore, do recommend it to academia and the entire populace.

Preface

Sustainability of education in general, and higher education (HE) in particular, is the basis of development in communities and countries and is expository for navigating a future marked by enormous social changes. Accordingly, this book propagates "sustainability" as one of the key processes that would make HE in Sub-Saharan Africa and the entire continent more relevant to serve as an engine of development.

The context of the book draws from the global debate on the role of HE and its effects on societal development, while the overall scope of the book discusses perspectives as per the variables spelt out in the title and under the two parts, namely "Curriculum and Teaching in Higher Education" and "Higher Education and Innovations". The introductory chapter (Chap. 1), which depicts an overview of the material within the two parts, adds to 15 chapters in total. The chapters address aspects of Sustainable Development Goals (SDGs) and the need to use quality education to achieve these goals. They depict current and useful insights not only on the Sub-Saharan region but on the entire vast continent of Africa. Presented are comparative case studies of quality measures that can enhance the inculcation of employability skills among learners not only in Africa but globally.

Suffice to highlight heretofore that the title of this book mentions "Sub-Saharan Africa" but solely owing to the latitude that almost all, save one of the contributors, hail from this part of the continent. For, the regions represented in the chapters do render an adequately proportionate representation of Sub-Saharan Africa and so do the countries therein. As for Somalia, though the easternmost country in the Horn of Africa, it

occupies an important geopolitical position adjacent to Sub-Saharan Africa. And, above the Sub-Saharan Africa scenario, the notions advanced reflect and are apt to be generalised on the whole continent. Moreover, slightly more than half of the book focuses directly on continental Africa as substantiated by three chapters in Part I and five chapters in Part II of this compendium.

The book, therefore, explores quality assurance (QA) perspectives from an African context, in particular the models of QA and how sustainable these are to ensure the attainment of graduate attributes as precursors of industrial and/or economic development in the continent. Advanced *inter alia* are issues of pedagogy, entrepreneurship, ethics and culture, internationalisation, and sustainable development, including the "new normal" behest of the COVID-19 phenomenon. The SDGs thesis makes the book up-to-par since quality of HE as the engine of the industrial revolution ought to find its roots and ground itself in a sustainable stance and the stakeholders in HE ought to move with the status quo. This anthology holds that the HE is one of the sectors that calls for these necessary reforms; thus the imperative for HE in the continent to embrace strategies and technological advances to equip the educands for relevancy to the signs of the times.

The main audience encases policymakers in decision-making with regard to education policy formulation, including the faculty and their students on the guide to and in academic analysis. The book is a "must-buy" also to the senior management in higher education institutions (HEIs) in an endeavour to strengthen QA and the production of relevant and quality products. Other related readership and markets herewith are the relevant public and private social sector associations and professional and societal groupings. The most relevant disciplines include and are not limited to Higher Education, African Studies, African Education, Quality Education, Quality Improvement, Sustainable Education, School Leadership, and Interdisciplinary Studies.

This felicitous book is a contribution to global HE studies. Though Africa-context-based, it offers an impetus to think within the dynamics of HE and satisfies the "ought" of bridging the gaps in context, having introspected both the African and the global foci as well as the SDGs.

The Lessons ensconced in this treasury are action-oriented and do in turn presuppose recommendations as a way forward.

ACKNOWLEDGEMENTS

The previous two books acknowledged some of the personalities to whom I owe sublime and incessant indebtedness and took cognisance of those who have gratuitously extended a hand in ways sundry ever since my being a resident in Kampala. Needful here to emphasise, this was without prejudice to the phenomenon that many more deserved special mention. In a similar vein, this book, The Sustainability of Higher Education in Sub-Saharan Africa: Quality Assurance Perspectives, reiterates sagacious tribute to all explicitly and implicitly enlisted and adds a few other philanthropists that include Mr Gervase Ndyanabo, Prof Charles Niwagaba, Prof Orach of Entebbe, Dr Deus Kamunyu Muhweezi, Rev Sr Datiya Daniela Mukebita—Mother General of the Franciscan Sisters of St Bernadette (FSSB) in Tanzania, Rev Sr Esther Maris Tinu Okoro—Eucharist Heart of Jesus (EHJ) Sisters in Nigeria; serving in the Archdiocese of Johannesburg, Carolin Krammer of Nürnberg in Deutschland, Madam Grace Tusiime of the Ministry of Energy and Mineral Development, and Kenneth Kato Abooki of Germany Embassy in Kampala. The personalities in Boston, namely Fr Richard Kayondo, Fr Emmanuel Rutangusa now in Rwanda, Fr Godfrey Musabe Apuuli, Dr David Nnyanzi, and the families of Andrew and Annet Byaruhanga both Amooti, Eugene and Proscovia Nkore, Barnabas and Justen Nkore, Michael and Margret Mukisa, Fred and Mary Ssebugwawo, Madams Agnes Nansubuga, Gladys Mukiibi, Annet Nazziwa, Adela Mary Kyarikunda, and Maria Assumpta Kaweesa, to mention just but a few.

Singular and profound enunciation is rendered to the happy and perpetual memory of a dignified personality who, as this book was in the final stages of submission for publication, left this life on Tuesday 18 July 2023; just one year shy to turn 80 years of age! He was ordained Priest on 11 July 1971 and coadjutor Bishop on 24 June 1989, succeeded on 23 November 1991, and was appointed Archbishop of Mbarara on 2 January 1999. Acknowledged heretofore is the sublime stance of having treasured him as mentor and friend and as one of the Prelates with whom I am privileged to share successively the Patron Feast Day of Sts Peter and Paul and the Birthday on the following last day of the month of June. This is an orator with a sublime sense of humour, the Archbishop Emeritus of Mbarara Archdiocese, His Grace, The Most Reverend Paul Kamuza Bakenga. Remembered and acknowledged in an equidistant vein is yet another Sacerdos Maximus, The Right Reverend Albert Edward Dr Baharagaate Akiiki, Bishop Emeritus of Hoima Diocese, who lifted off a few months earlier on 5 April 2023; having already celebrated 93 years of age. Highly treasured is his profoundly amicable paternal-cum-fraternal collegiality to my paucity as he resided at Nakulabye Parish in Kampala.

Requiescant in pace.

The book owes superlatively to the contributors, the Publishing team – especially Venkitesan VinodhKumar, and all people of goodwill.

May Divine Benevolence incessantly provide.

Praise for The Sustainability of Higher Education in Sub-Saharan Africa

"This book project explores quality assurance perspectives from an African context. In particular, it explores the models of quality assurance (QA) and how sustainable these are to ensure the attainment of graduate attributes as precursors of industrial and/or economic development in Africa and elsewhere. The project offers new and useful information as far as specific and therefore contextual African cases are concerned. The case studies that are used for some given countries speak to specific issues which could benefit the reader from a comparative point of view. Sustainable development goals are the central thesis around which the project is based. The project addresses current trends in the area of higher education (HE) and QA through issues of digitalisation for instance which question Africa's readiness for the 4IR. The 4IR is here with Africa and quality HE as the engine of the industrial revolution to find its roots and sustainably ground itself. The policy maker, the researcher, and the learner must live in a comparative space to learn from one another and move with the times. Therefore research from different perspectives on quality HE and its sustainability is imperative for cross-pollination of ideas. The author, who is also the editor, is well placed from his vast academic writing experience. His HE experience, teaching, research supervision, and examination of research projects at the graduate level—among others—all qualify him to produce a high-quality book on this given topic. The writing is of an acceptable quality. My general assessment of the project is that it is viable and timely. This should be a "must-read" to strengthen QA and to produce relevant and quality products."

—Anonymous Reviewer 1, United Kingdom (UK)

"In the contemporary world quality education is regarded by many as a catalyst for socioeconomic advancement, particularly in developing countries. The role of quality education in the socio-economic development of African countries is therefore crucial and this makes the book an important project. For, in recent times Higher Education Institutions (HEIs) have increased dramatically in Africa. Apart from public or state-funded universities, there are many private HEIs mushrooming on the continent. Part of the reason is the recognition of higher education (HE) as the vehicle for sustainable development in Africa. With the establishment of many HEIs, quality assurance (QA) has become crucial to ensure that all institu-

tions of higher learning adhere to quality standards so that qualifications (degrees, diplomas, and certificates) are not devalued. Quality education is in line with the UN Sustainable Development Goals (2015) which emphasise the role of education in socio-economic development. This book has an inter- and multidisciplinary nature and it offers useful, valuable, and original contributions to the field of quality education for sustainable development in Africa and beyond. The structure, organisation, and presentation are of good quality. The editor is qualified and has the experience, knowledge, and skills; and he has successfully executed similar projects in the recent past."

—Anonymous Reviewer 2, United Kingdom (UK)

"I have shared long background from youth with Prof Peter Neema-Abooki and sat in the same classrooms with him facing Latin Courses, among other subjects. The minimum pass mark for Latin in any examination then in our Institution was 95% and this determined the way forward for other subjects and continuity as a student of that Institute; in other words, failure to achieve the required set marks was tantamount to dismissal; we continued together for more than 4 years. Comparatively, what am referring to for other institutions of learning is Mathematics whose passing mark was not that high like Latin. I don't want to say that Latin is harder than Mathematics since am an educationist. The justification of "harder than another" is another book one can author. For Prof Peter Neema-Abooki, to achieve what he is now, and to author so many books to date in the education arena, is proof that he did well in the Latin subject then; vivid proof will be noticed in the book content as you continue to read it, and for him to request me to endorse this book is a pointer to the dictum: "Birds of the same feathers fly together". I thank him for entrusting me with this noble task. I sincerely appreciate his unwavering trust deep-rooted in amicability. The first Latin word he and I conjugated was amicus and he has kept conjugating it practically till today."

"A good book tickles other researchers to see more gaps in research because it opens their analytical minds, which this book does very well as it irrigates yet another appetite even in the author themselves, for, as they conclude one book, they notice another leading area related to what they have written in the current edition. This compendium advances in great proportions the role of HE as an engine for the socio-economic development of Africa and beyond. Without having to pre-empty your inquisitiveness of the contents, I, having read this compendium with keen interest, would rather set the appetite in you to further opening the next page and subsequently next page to next page till the end; as I do recommend this masterpiece as a "must-buy" for academic utilisation and life in general. I am confident that it captures the market in an attempt to depict the well-phrased title and profound content in minute detail."

—Masterjerb Birungi Paul, BED (Hons)MUK, Adv Dip Distance Education Specialist (UoL), MBA (MKU), Education Capacity Building Expert— Kigali, Rwanda "Sustainability of higher education in Africa in general, and in Sub-Saharan Africa in particular, is indeed a contemporary challenge and Dr Prof Peter Akampa Neema-Abooki could not have thought of a better book title to reflect on the issue. This is a trail-blazing book on higher education addressing fundamental issues regarding the sustainability of higher education (HE) on the African continent. With the 2023 UN Report indicating that we are moderately to severely off track in terms of achieving the sustainable development goals (SDGs), the book compels readers to reflect on sustainability through quality systems and contributions of higher education institutions (HEIs) to development, employability, innovativeness, and digitalization, among others. The book is a must-read for policy practitioners, lecturers, students, and all those who are keen on the advancement of quality institutions, be they academic, domestic, or otherwise. It is a fruit of one who is an accomplished potential and an academician of high promise, known to me over thirteen (13) years as a fellow academician grounded in research and publications with a special focus on Quality Assurance in Institutions of Higher Learning, to which field he has widely disseminated findings including the several key-note addresses at academic events in South Africa. His adaptability to crossculture was depicted not only during my benchmarking visit at Makerere University in Uganda where he hosted me in his capacity as the Dean of the East African School of Higher Education Studies and Development (EASHESD), but also, more evidently, when he returned a visit and lived with me at the University of Venda in the Republic of South Africa."

—Professor Clever Bafana Ndebele, Senior Director: Learning and Teaching, Office of the DVC Academic Affairs and Research, Walter Sisulu University, South Africa. Formerly held similar Directorates at Northwest University and the University of Venda

"Sustainability of higher education (HE) is the basis for the development of communities and countries South of the Sahara. The book ably addresses the quality assurance (QA) issues that can enhance the sustainability of HE in Sub-Saharan Africa; doing as it does, taking cognisance of the UN Sustainable Development Goals (2015) as the foundation of socio-economic development. Making an enormous contribution to the sector of Quality HE as a catalyst for socio-economic development, the book offers a very useful, valuable, and original contribution to sustainability in HE. The contributions from the different chapters focus on various aspects of the Sustainable Development Goals (SDGs) and the need to use *Quality Education* to achieve them. This book may appeal to development practitioners, researchers, students, education institutions, and various ministries of education in Africa and the globe due to its inter- and multidisciplinary nature. In view of the relevance of its contribution to the sustainability of HE without which development could be hindered in Sub-Saharan Africa, I fully endorse it."

—Kofi Poku Quan-Baffour, Professor Extraordinarius, NRF Rated, Adult Education, Department of Community & Continuing Education, University of South Africa (UNISA)

"This book The Sustainability of Higher Education in Sub-Saharan Africa: Quality Assurance Perspectives makes a great contribution to the literature on quality assurance (QA) and higher education (HE). I, with all the confidence that this resource will be much sought after by HE managers, policymakers as well as faculty and students, among others, do take the pleasure and honour to endorse the publication of this authoritative treasury."

—Professor Michael Mawa, Chief Principal Quality Assurance & Qualifications Framework, Inter-University Council for East Africa, Founding President for the Ugandan Universities Quality Assurance Forum (UUQAF), Founding President of the East African Higher Education Quality Assurance Network (EAQAN)

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Notes on Contributors

Christopher Mukidi Acaali is an educationist with an interest in religion and culture. He holds a PhD in Theology from Duquesne University, Pennsylvania, USA, and a Master's Degree in Religious Studies from the University of Portland, Oregon, USA. He has spent most of his time in administration, serving as a registrar at the Mountains of the Moon University in 2005–2013 and Uganda Martyrs University (UMU) in 2014–2021. He was appointed Deputy Vice-Chancellor of UMU from 1 December 2021 to date. Through these assignments, Mukidi has developed a passion for policy and development and has of late shown interest in the development of language (Runyoro-Rutooro language). Besides administration, he has taught and supervised undergraduate and postgraduate students.

Anass Bayaga is currently a cognitive mathematics and STEM cognition professor at Nelson Mandela University. Presently, Bayaga serves as an editorial board member of the *International Journal of Mathematics Teaching and Learning (IJMTL)*. Bayaga is a member of the Membership Committee of the Mixed Methods International Research Association—MMIRA. He was also a member of the International Institute of Informatics and Systemics (IIIS). Bayaga was also a Fulbright researcher at George Washington University, where through predictive modelling, he previously researched cognitive enhancement via mobile computing and applications in STEM, which also presented his research group's niche/focus. His research and teaching interests are mathematics and computational

cognition (Neuro-mathematics (STEM), STEM cognitive enhancement via human-computer interaction, and predictive/mathematical modelling.

Katherine Fulgence has specialisation in entrepreneurship education and employability of graduates through skills development programmes. Over the past ten years, she has conducted training, research, and consultancies in the areas of scaling education innovations, digital fluency, teacher education, professional development, and career transitions. She has authored academic writings in peer-reviewed journal articles, book chapters, policy briefs, and consultancy reports.

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David Katende is a Higher Education Scholar and practitioner, whose specialisation is in education policy, planning, quality assurance, and monitoring and evaluation. He has seventeen years of experience working with the education sector in Uganda, at both secondary and university levels. He holds a Bachelor of Arts degree, a Post-Graduate Diploma in Education, and a Master's Degree in Educational Policy and Planning, with several certificates in doctoral research and higher education management. He is currently a PhD student and a member of Top University Management at Mountains of the Moon University. David has recently graduated with a

First-Class Post-Graduate Diploma in Monitoring and Evaluation and is about to defend a Master's degree dissertation in the same field.

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ABBREVIATIONS

1IR First Industrial Revolution
2IR Second Industrial Revolution
3IR Third Industrial Revolution
3Ps Profit, People, Planet
4IR Fourth Industrial Revolution

AAU Association of African Universities

AC Alternating Current Ads Advertisements

AfREA African Evaluation Association

AHEIS African Higher Education Institutions
AHES African Higher Education Space

AI Artificial Intelligence
ANA Annual National Assessment

e.g. exempli gratia For example

GRN Government of the Republic of Namibia

SD Standard Deviations QA Quality Assurance

SPSS Statistical Package for the Social Sciences

IO Independence of Observation

LR Homoscedasticity

LCP Learner-Centered Pedagogy

MIV Multicollinearity
CD Significant Outliers

HC Homogeneity of Covariance
MANOVA Multivariate Analysis of Variance
SDGs Sr Sustainable Development Goals Sister

R1 Research Question 1