



OPEN ACCESS

EDITED BY

Felister Nzuve,
University of Nairobi, Kenya

REVIEWED BY

Almerindo Janela Afonso,
University of Minho, Portugal
Dianna Suzieanna Mohamad Shah,
MARA University of Technology, Malaysia

*CORRESPONDENCE

Lucas Lavo António Jimo Miguel
✉ lmiguel@ucm.ac.mz
✉ lucaslavomiguel@yahoo.com.br

RECEIVED 29 June 2024

ACCEPTED 24 March 2025

PUBLISHED 25 April 2025

CITATION

Miguel LLAJ, Andissene AAT and
Gomane MCP (2025) Evaluating the
integration methods of the higher education
system in Mozambique.
Front. Educ. 10:1456765.
doi: 10.3389/feduc.2025.1456765

COPYRIGHT

© 2025 Miguel, Andissene and Gomane. This is an open-access article distributed under the terms of the [Creative Commons Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Evaluating the integration methods of the higher education system in Mozambique

Lucas Lavo António Jimo Miguel^{1,2*},
Andissene Américo Thodo Andissene³ and
Manuel Cochole P. Gomane⁴

¹Universidade Católica de Moçambique, Extensão de Maputo, Av. Romão Fernandes Farinha, Alto Maé (Antigo Lar da Munhuana), Maputo, Mozambique, ²Faculdade de Ciências e Tecnologia, Universidade Joaquim Chissano, Maputo, Mozambique, ³Universidade Católica de Moçambique, Tete, Mozambique, ⁴Universidade Save, Maxixe, Mozambique

The forms of integration and articulation in tertiary education are debated globally, including studies that discuss higher education's expansion, differentiation, diversity, and fragmentation. This review evaluates integration forms by examining selected Mozambican higher education literature and databases from 1962 to 2021. Research on higher education (HE) in Mozambique aids in assessing trends and processes of expansion, fragmentation, differentiation, and diversity. These processes are described using data from the Ministry of Science and Technology of Mozambique regarding 53 public and private universities. Statistical analyses using Excel are based on integrated data of enrollments, new admissions, and graduations to deduce the performance of isomorphism through differentiation, diversity, and fragmentation. The expansion and fragmentation of HE in Mozambique are represented by the total number of students enrolled in both public and private systems. Results indicate a slight difference in new admissions between public and private systems, while more graduations were registered in the public system compared to the private system. The comparative analysis reveals no significant differences at a 5% confidence level between new admissions and graduated students, reflecting the intensification of fragmentation within the parent institutions. Additionally, no evidence was found supporting differentiation and diversity practices in public and private institutions. The identified expansion and fragmentation processes highlight the need for decentralization to counterbalance the concentration of resources and higher education activities outside of Maputo. Although differentiation and diversity practices are absent in Mozambique's higher education system, they could enhance educational quality and yield high-quality graduate outcomes, research, and community outreach activities. While the findings pertain specifically to the HE system in Mozambique, they provide important insights into the dynamic processes of expansion, fragmentation, differentiation, and diversity in the region.

KEYWORDS

differentiation, diversity, fragmentation, massification, higher education, Mozambique

Introduction

Higher education systems are growing larger and more complex worldwide, regardless of their origins (Sampaio, 2014). The processes of expansion and diversity, including fragmentation, became particularly noticeable towards the end of the 20th century and continue to evolve across all continents and most countries. The current cohort of students in global higher education systems is highly diverse, encompassing various types of educational

institutions, administrative structures, academic organizations, a range of training programs, knowledge concentrations, entrance and retention mechanisms, and the qualifications and working conditions of teaching staff (Birnbaum, 1983). These diversities may lead to various forms and articulations of education systems discussed worldwide, particularly regarding debates about expansion processes and related trends (Miguel et al., 2021; Langa, 2017; Horn and Lee, 2016; Zeleza, 2016; Theune, 2015; Pike and Graunke, 2015). Of course, some studies have explored different growth rates and types of expansion in higher education. Nevertheless, a complementary understanding of integration forms and pedagogical articulation remains a goal, particularly in sub-Saharan Africa and South America. Notable studies on expansion and integration in higher education in sub-Saharan Africa (Mário et al., 2003; Langa, 2017; Miguel et al., 2021; World Bank, 2010; Langa, 2014) are pioneering in this field and demonstrate that economic forces may have driven private higher education institutions to seek new markets across many sub-Saharan countries. For example, Langa and Wangenge-Ouma (2016) highlighted the competition among private institutions outside Maputo in Mozambique. This competition is driven by the increasing enrollment rates in primary and secondary schools, as noted by Langa (2017). It reflects the processes of differentiation and diversification within a neoliberal market (Miguel et al., 2021). The Ministry of Higher Education, Science, and Technology in Mozambique previously outlined policies proposing differentiation and diversity in 2000. One of the strategic goals outlined in the Mozambican government's Strategic Plan for Higher Education (2000–2010) was to diversify institutions, training opportunities, and delivery methods. The differentiation process in tertiary education and its associated diversity is articulated in the Mozambican Strategic Plans, which specify two key goals: developing a diversified tertiary system of both public and private higher education institutions and promoting innovation and diversity in higher education training programs. The Strategic Plan for Higher Education in Mozambique (2000–2010) presented strategies such as promoting the establishment of new public and private institutions within a general framework for the higher education subsystem, fostering connections with existing technical-professional schools, and consolidating current institutions based on their experiences, resources, and economies.

The development and expansion of higher education in Mozambique reflect a series of legislative changes approved since 1993; however, their power and implementation are often questioned (Miguel et al., 2021). The regulation of higher education in Mozambique appears weak (Mário et al., 2003; Langa, 2017), as it has allowed unregulated growth without rigorous diversity, differentiation, and fragmentation among public and private institutions. This weak regulatory framework has resulted in certain systemic characteristics that maintain a traditional focus on a theoretical and formative curriculum (education subsystem). The need for differentiation and diversity in higher education in Mozambique may aim to prioritize local development and increase employment opportunities through career-oriented programs. A careful examination of the role and relevance of the non-formal education system is essential, as it is fundamental to the dynamic theoretical and formative curriculum in teaching systems, such as those in Mozambique—Local Knowledge.

Higher education in Mozambique has registered substantial progress in terms of the number of students, including new entrants, enrolled, and graduates. These advances have been attributed to the

increased number of higher education institutions, which increased from 44 in 2015 to 56 in 2021 (MCTESP, 2021). However, recent studies by Mário et al. (2003), Langa (2017), Miguel et al. (2021), and Tambe and Miguel (2021) have highlighted the lack of research discussing the integration and articulation within tertiary education in Mozambique. The absence of studies addressing these higher education phenomena motivated us to evaluate the following question: Is there a possibility of increasing flexibility in higher education curriculum programs, facilitating student choices, and enabling them to align their studies with their career aspirations and job opportunities? By addressing these central questions, we propose that possible answers may be provided by examining the forms of integration in the tertiary education system, focusing on the Mozambican higher education system due to data accessibility. We believe this may aid in understanding the practices related to diversity, differentiation, and fragmentation within the higher education system. Epistemologically, we are discussing a space mediating between the theoretical and formative curriculum and the need for differentiation and diversity in higher education in Mozambique as a means of integration and regulation (institutional autonomy).

The forms of integrating higher education

Since the 2000s reforms, the higher education system has received support from international organizations and donor agencies (Provini, 2019), such as the World Bank, which has consequently formulated recommendations for public and private universities worldwide. In addition, higher education is increasingly viewed as a priority sector linking economic growth and democratization processes in developing countries, particularly in the sub-Saharan region, including Mozambique (Miguel et al., 2021). Economic sustainability may be reflected in the quality of graduates who are expected to produce a well-trained workforce that meets market needs (World Bank, 2010). Market demands are influenced by the economic, social, cultural, and political challenges affecting higher education systems globally. Horta and Jung (2014) emphasized that a prime example can be seen in Asia, one of the most dynamic regions worldwide regarding higher education systems. For example, the growth of higher education in Asian countries was noted by Naidoo (2011), who identified the system as a significant interest due to its increasing political and cultural influence globally. In addition, Marginson (2016) and Shin and Harman (2009) argued that most Asian higher education systems are undergoing a rapid massification process, with reforms occurring at unprecedented levels in recent years, driven by the relentless push for internationalization and quality in research and education.

Higher education management is currently understood within the context of quality, which is defined through various concepts. For example, Morosini (2001) conceptualizes quality by framing it in relation to isomorphism, which is linked to ideas of employability, diversity, or equity. Additionally, Morosini (2001) highlights that most higher education institutions carry out assessments under direct and/or indirect pressure from the government. It appears that quality is associated with evaluation, standards, and comprehensive data collection that define the effective quality of services provided, potentially guaranteeing institutional success. Moreover, quality may also be linked to employability, with the primary function of the higher education system being preparation for the workforce. Employability is

conceptualized as a complex and relatively new idea; it refers to professionals' ability to maintain employment or find new jobs when laid off (Morosini, 2001). Minarelli (1995) further conceptualizes employability as the state of being employable—acquiring and providing jobs based on knowledge, skills, and attitudes intentionally developed through education and training to meet job market needs. According to UNESCO Institute for Statistics (1998), quality and diversity are the foundational pillars of educational policies that delineate quality in the higher education system. This concept transcends employability, introducing specificity as well. Morosini (2001) argues that quality and equity are inseparable concepts; the educational community, composed of epistemic groups, bears responsibility for the applicability and success or failure of educational policies that ensure both quality and equity. This concept is based on the belief that education must extend to the community, facilitating community participation in education and management while preserving academic autonomy, which ensures innovation and research. Regarding the challenges of public policies in general, particularly in higher education, “the State (as an agency) constitutes the ‘central concern of the epistemic community.’ It is viewed as the most significant legacy of colonization” (Kodjo-Grandvaux, 2021). Conversely, isomorphism from an institutional standpoint encompasses additional concepts; for Pacheco (2002), institutional isomorphism enables organizations to analyze external phenomena affecting them, increasing awareness of their similarities while guiding them according to their own particularities. From an institutional point of view, isomorphism is understood in three dimensions: coercive, normative, and mimetic conditions. The implications of organizational strategy reflect practices of strategic adaptation and, consequently, positioning.

Sampaio (2014) states that higher education systems are becoming larger and more complex worldwide, regardless of their origins. This expansion has been noticeable since the end of the 20th century and is still ongoing in most countries, particularly between 1975 and 1995, when enrollments doubled from 40 million to 80 million. Furthermore, the current student population in higher education is diverse, including a mix of age, sex, socioeconomic status, color, ethnicity, motivations, expectations, and professional goals. According to Birnbaum (1983), diversity describes the characteristics of educational institutions in various aspects, such as administrative dependence, academic organization, range of training programs offered, areas of knowledge concentration, entry mechanisms, qualifications, and working conditions of teaching staff, among others. However, Huisman (1995) argues that diversity serves to describe a particular characteristic in a periodic context, thus revealing the different meanings (or dimensions) of variety in terms of quantity, density, and dispersion of the system.

Birnbaum (1983) and Huisman (1995) state that “the notion of diversity would have a systemic and static character, while the notion of differentiation would evoke the idea of the process, being therefore more dynamic.” However, it appears that the “increase in institutional diversity within a higher education system (...) does not necessarily lead to greater differentiation due to the tendency towards institutional isomorphism” (Sampaio, 2014). Nevertheless, the fundamental role in controlling this teaching process persists; otherwise, it would resemble South Africa, where, according to Sampaio (2014), there is a significant presence of private institutions. However, the South African government does not recognize them due to the lack of specific regulations allowing

them to operate in the country, leading to the non-validation of diplomas awarded by these institutions.

It is generally acknowledged that higher education curricula and instruction not only change constantly over time but also vary greatly between different systems and countries (Ben-David, 1993). Trow (1973, 2006) stated that different phases of higher education are associated with various curricula and forms of instruction. These differences can be observed in the characteristics of curricula and instruction among elite, mass, and universal higher education systems. This association is no longer applicable in all higher education systems due to significant qualitative diversification across systems and diverse approaches to the massification of higher education within individual systems (Marginson, 2016). Huang (2017) argues that extensive studies address the impact of transitioning from elite to mass and from mass to universal higher education on economic growth, the production of graduates, social mobility, equity and quality of higher education, and the diversification and stratification of the structures and functions of higher education systems.

Higher education occupies the highest position in the educational system, supporting all other levels as it serves as the main component of a strategic educational framework. This sector plays a crucial role in generating new knowledge and developing scientists, technicians, medical practitioners, professionals, teachers, government officials, civil service personnel, business leaders, and various other professions. These roles are interconnected to build capacity for socioeconomic development, eradicate poverty, and promote good governance. As stated by the African Union (2017), meaningful and sustainable advancement in any country necessitates that higher education be central to the development agenda of nations. Indeed, countries in the developing world cannot enhance living conditions or foster inclusive and sustainable development without quality education, which encompasses robust higher education systems and institutions that equip students with relevant skills and knowledge. Furthermore, these institutions also produce and disseminate new knowledge and research essential for societal and human development and progress. For example, local, regional, and global challenges can be effectively addressed by strong, consistent, and well-managed higher education institutions dedicated to learning and contributing through teaching, research, and engagement to development and progress.

The brief history of the higher education system in Mozambique

According to Castiano and Ngoenha (2013), in the Portuguese-speaking context, the years 1961–1972 demonstrate a relative expansion in education, primarily due to the abolition of the Statute of Indigenous People in 1961. This abolition is linked to the political circumstances surrounding the wars of liberation, with one already erupting in Angola and another threatening to break out in Mozambique (p. 37). In this context, several studies, including those by Chilundo (2002), Miguel et al. (2021), Mário et al. (2003), and Langa (2012), indicate that Higher Education (HE) in Mozambique began in 1962 at Eduardo Mondlane University, previously known as Lourenço Marques. A total of 23 years later, in 1985, the Mozambique government established the *Instituto Superior Pedagógico (ISP)* and subsequently opened branches in Beira and Nampula in 1995. In 1986, the *Instituto Superior de*

Relações Internacionais (ISRI) was established. As noted by Chilundo (2002), various reform initiatives were later implemented to address the growing social demand for university education and to align the university mission with national development priorities. From 1961 onward, “the process of decolonization underway in Africa must be considered” (Castiano and Ngoenha, 2013, p. 37). These reforms included rapid program differentiation and curriculum restructuring to adapt to new circumstances. Additionally, roughly eight years later, with Law 1/93 and the constitutional revision in 1990, an increase in the number of higher education institutions was observed, leading to a rise in student enrollment. Although the laws and revisions were not specifically aimed at regulating the tertiary education system, they created opportunities for private higher education institutions, such as Catholic University, Polytechnical University, the Higher Institute of Science and Technology a year later, Mussa Bin Bique University, and the Higher Institute for Transport and Communications in 1999, among others. These opportunities facilitated various reform initiatives to address the increasing social and political demand and to align the university mission with national development priorities (Ng’ethe et al., 2008). These included rapid program differentiation and curriculum restructuring to meet new challenges. Thus, institutional and program differentiation became a central aspect of higher education development in the country.

The development of higher education in Mozambique reflects a series of legislative changes demonstrated by Law No. 1/93 (Mozambique), Law No. 5/2003, and Law No. 46/2018. Mário et al. (2003) and Langa (2017) question the effectiveness of these weakened laws, as they allowed unregulated expansion, along with the diversity, differentiation, and fragmentation of public and private institutions. Due to the ineffectiveness of the laws, systemic characteristics have been evident in tertiary education in Mozambique since 1962. For example, according to Ng’ethe et al. (2008), it is clear that the role and mission of the tertiary education system continue to follow a traditional focus on a theoretical and formative curriculum. The need for differentiation in tertiary education at universities and branches located outside Maputo is directed towards a mission that prioritizes local development and increases employment opportunities through career-oriented programs. Ng’ethe et al. (2008) noted that one of the strategic goals presented by the government in the Strategic Plan for Higher Education in Mozambique 2000–2010 was to diversify institutions, training opportunities, and methods of delivery. The key to this goal was to guide principles that promote “diversity and flexibility of institutions, courses, curricula, and methods of delivery to ensure responsiveness to changing social, cultural, and economic demands”. Two elements of the strategic plan generate a demand for differentiation and articulation. Articulation is a complex process, and the government established several goals to achieve this, such as increasing equity in tertiary education by expanding access to higher education to meet the diverse labor market and social needs. Additionally, there is a need to respond to the evolving economic, social, cultural, and technological requirements arising from the country’s rich diversity of linguistic and ethnic groups and from the rapidly developing market economy. Specifically, the plan outlined two goals regarding differentiation, including the development of a diversified system of public and private higher education and encouraging innovation and diversity in training opportunities

within higher education. As reported by Ng’ethe et al. (2008), differentiation and articulation are notably central elements of the higher education reform program, as stated in the Strategic Plan. The reform process is ongoing in tertiary education, but financing—whether public or private—has begun to be viewed as an investment, with returns that should be guaranteed by the government, leading to a growing need to ensure the internal and external efficiency of higher education systems by the Mozambican government (Miguel et al., 2021). This return on investment is often clouded by discussions about the need for personal elevation and that of the country, which would result in improved living conditions for the population (Langa, 2006, 2012). A tentative answer to the primary goal of the study is evident in the following hypotheses, which may refer to: (a) A major expected contribution from higher education is the simultaneous expansion and differentiation of the system to meet both social and economic development needs; (b) The expansion and differentiation of the system require decentralization to offset the heavy concentration of resources and activities in the capital and larger cities; (c) Decentralization and differentiation to ensure educational quality are linked by producing high-quality graduate outcomes, research, and community outreach activities that contribute to regional development; (d) Regional development is limited by the availability of both financial and human resources, as well as the challenge of attracting teaching staff to the provinces.

Moreover, one of the greatest challenges in higher education in Mozambique is the pressure to claim relevance, which involves traditional roles and functions, including teaching, research, outreach, and some degree of innovation (Zezeza, 2007). As stated by Zavale and Langa (2018), higher education institutions contribute to knowledge production and, consequently, to innovative evolution. The role of universities in Mozambique, as well as in the region excluding South Africa, has not stimulated innovation through research. Although university innovation is less common in most parts of Africa compared to countries with more developed research and education systems (e.g., South Africa, Egypt, Morocco, Rwanda, Cabo Verde, and others), some general points of departure still apply. Innovation can be understood as the creation and adoption of products, services, and processes to assist institutions, organizations, and individuals (Nicolaidis, 2014; Wehn and Montalvo, 2018). Depending on the extent of change that innovation creates, it can be radical or incremental (Douglas, 2013). According to Douglas (2013), radical innovation involves completely new products, often carried out by new entrants with a diversified knowledge base. Incremental innovation occurs when minor changes are made to established products and processes (Nicolaidis, 2014). The two types of innovations relate to what is being produced and how goods and services are produced. Of course, product innovation may involve either goods or services, whereas process innovation deals with how goods and services are produced. There is now a widely accepted broader definition of innovation as any change in processes, practices, or products within industries, organizations, societies, and economies.

Materials and methods

The forms of integration and flexibility processes, including adjustments, were evaluated based on data from the laws governing higher education and its evolution, decrees, public policy, and various

datasets, including temporal series, transversal data, and panel datasets observed across 53 public and private universities in Mozambique. Our focus was on the period between 2000 and 2020, given the availability of empirical data sourced from the Mozambican Ministry of Higher Education, Science, and Technology. The assessment of the secondary dataset relied on literature, including works previously presented by Mário et al. (2003), World Bank (2010), Langa (2014), Langa (2017), Miguel et al. (2021), and the Ministry of Higher Education, Science and Technology (2000), as well as the Strategic Plan for Higher Education in Mozambique 2000–2010, Tambe and Miguel (2021), Chilundo (2002), and Ngêthe et al. (2008). This research and the associated government decrees facilitated an evaluation of higher education processes related to expansion, differentiation, diversity, and fragmentation. Moreover, we examined the articulation of the HE system since the establishment of the first higher education institution (UEM) in 1962, prior to independence. Our focus on articulation centered on how the laws of higher education in Mozambique, including Law 1/93, Law 46/2018, Law 1/93, Law 5/2003, and Law 27/2009, managed the entire processes of expansion, fragmentation, diversity, and differentiation phenomena. Additionally, we followed trends in higher education laws and government decrees concerning higher education, curricula, and program articulation since 1962 and their relationship to the undergraduate courses offered in the context of the unregulated processes of expansion, diversity, and fragmentation among the mother institutions. We used historical time series data from the Ministry of Science and Technology (MCT) of Mozambique, supplemented by publicly available quantitative data from the MCT site regarding 53 public and private institutions, which includes nine non-operating institutions. We acknowledge that data collection breakdowns limit our ability to provide a more comprehensive picture of how different higher education institutions in Mozambique respond to organizational dynamics. The analysis of organizational expansion also considered whether it involved horizontal diversification.

We managed the quantitative data using descriptive statistical measures in an Excel sheet. Moreover, we used numeric data to compare three groups: newcomers, enrolled individuals, and graduates from private and public institutions. These three data groups helped in testing the statistical hypotheses using the *t*-test algorithm, accounting for the different variances between public and private institutions. The *t*-test analyses (with one and two tails) at a 5% significance level (α) helped us determine whether public and private institutions contribute to the expansion process and its composition in Mozambique. Additionally, we performed a simple linear regression model, treating total graduations as the dependent variable and total newcomers and enrollments as independent variables in both public and private universities.

The higher education evaluation was correlated with the isomorphism process through *t*-test analyses, examining its relationship to the differentiation and diversity of courses offered during the studied period. We then tentatively evaluated the forms of integration in tertiary education in Mozambique based on the laws (Law No. 1/93, Law No. 46/2018, Law No. 1/93, and Law No. 5/2003) and government decrees regarding practices related to diversity, differentiation, and fragmentation processes. The forms evaluated across 53 different higher education institutions provided insight into the application of isomorphism theory within the context of Mozambique.

Results

The evolution of HE in Mozambique began in 1962 with the establishment of Eduardo Mondlane University (Table 1). The emergence of private universities has led to diversification and fragmentation within the HE system. This development was influenced by political factors, market forces, and religious ideologies that fostered what is referred to as healthy competition in the HE field, resulting in an increase in the number of universities and promoting regional equity in Mozambique. According to Table 1, more than half of the 53 higher education institutions in Mozambique (comprising 19 universities, 27 institutes, four higher schools, and three academies) are located in the southern region. Nine of these institutions only became operational in 2020, including Universidade Técnica Diogo Eugénio Guilande (UTDEG), Universidade Áquila (UNAQ), Universidade Novo Horizonte Eduardo Silva Nihia (UEHA), Instituto Superior de Ensino à Distância (ISEAD), Instituto Superior Sebastião Mussanhane (ISSMU), Instituto Superior Politécnico e de Tecnologias (ISPOTEC), Instituto Superior de Gestão, Tecnologias e Empreendedorismo (ISGETE), and Instituto Superior Kaenda (ISK). Among these institutions, Eduardo Mondlane University has had the largest student body since 1962, and the differentiation and diversification of the courses offered are evident (see on the site www.admissao.uem.mz). Other universities, such as the Pedagogical University in Maputo, have fewer students due to a recent disassociation from their branches located in other provinces, which were restructured into UniSave, UniPungue, UniLicungo, and UniRovuma. The Catholic University of Mozambique (UCM) is one of the private universities with branches in all provinces except Inhambane province in the southern region. The differentiation and diversity at UCM are less evident compared to other private universities, which predominantly offer courses in social and humanities sciences rather than in natural sciences and engineering. Moreover, demographic growth, coupled with political policies and economic contexts, compelled the government to expand the higher education system under Law No. 1/93. This law was motivated by a neoliberal agenda and established the legal foundations for the creation of new institutions (Table 1). According to Table 1, although more than half of the higher education institutions in Mozambique are private, economic growth has driven these institutions to explore new markets in provinces outside the capital, Maputo, competing for students, academic staff, and prestige. The unregulated expansion of higher education in Mozambique, as reflected in Table 1, along with the inconsistencies between Laws No. 1/93 and No. 5/2003 and the associated Strategic Plans for Higher Education for the periods 2000–2010 and 2012–2020, has complicated efforts to harmonize regulations and control the quality of higher education in Mozambique. Although the National Council for Evaluation and Quality Assurance of Higher Education was established in 2007, the guidelines for educational strategies and evaluations remain weak, impeding the regulation of the creation and operation of higher education institutions and preventing the establishment of those that do not meet the required conditions. Thus, the Council of Ministers of Mozambique approved the Regulation of Inspection of Higher Education Institutions through Decree No. 15/2018, instituting permanent and systematic inspections of the organization and operations of all higher education institutions to ensure quality. This may be reflected in the eight (08)

TABLE 1 Total number of higher education institutions in Mozambique as of 2020 (MCTESTP, 2021).

University name	Region
Public institutions	
1. Universidade Eduardo Mondlane (UEM)	South
2. Universidade Pedagógica de Maputo (UP)	South
3. Universidade Save (UniSave)	South
4. Universidade Púnguè (UniPúnguè)	Centre
5. Universidade Púnguè (UniPúnguè)	Centre
6. Universidade Licungo (UniLicungo)	Centre
7. Universidade Rovuma (UniRovuma)	North
8. Universidade Joaquim Chissano (UJC)	South
9. Universidade Zambeze (UniZambeze)	Centre
10. Universidade Lúrio (UniLúrio)	North
Private institutions	
1. Universidade Adventista de Moçambique (UAM)	South
2. Universidade Metodista Unida de Moçambique (UMUM)	South
3. Universidade Nachingwea (UNA)	South
4. Universidade Wutive (UNITIVA)	South
5. Universidade Politécnica (A POLITÉCNICA)	South and Centre
6. Universidade Mussa Bin Bique (UMB)	Centre, North
7. Universidade Católica de Moçambique (UCM)	Centre, North, South
8. Universidade Técnica de Moçambique (UDM)	South
9. Universidade São Tomás de Moçambique (USTM)	South
10. Universidade Jean Piaget de Moçambique (UJPM)	South
Higher institutions	
<i>Public institutions</i>	
1. Instituto Superior de Ciências da Saúde (ISCISA)	South
2. Instituto Superior de Contabilidade e Auditoria de Moçambique (ISCAM)	South
3. Instituto Superior Politécnico de Gaza (ISPG)	South
4. Instituto Superior Politécnico de Manica (ISPM)	Centre
5. Instituto Superior Politécnico de Tete (ISPT)	Centre
6. Instituto Superior de Artes e Cultura (ISArC)	South
7. Instituto Superior Politécnico de Songo (ISPS)	Centre
8. Instituto Superior de Estudos de Defesa (ISEDEF)	North
<i>Private institutions</i>	
1. Instituto Superior de Educação e Tecnologia (ISET)	South
2. Instituto Superior Cristão (ISC)	Centre
3. Instituto Superior de Formação, Investigação e Ciência (ISFIC)	South
4. Instituto Superior Dom Bosco (ISDB)	South
5. Instituto Superior Monitor (ISM)	South
6. Instituto Superior de Comunicação e Imagem (ISCIM)	South

(Continued)

TABLE 1 (Continued)

7. Instituto Superior Maria Mãe África (ISMMA)	South
8. Instituto Superior de Gestão, Comércio e Finanças(ISGECOF)	South
9. Instituto Superior de Ciência e Tecnologia Alberto Chipande (ISCTAC)	South
10. Instituto Superior de Ciência e Gestão (INSCIG)	South
11. Instituto Superior de Gestão de Negócios(ISGN)	South
12. Instituto Superior de Ciências e Tecnologias de Moçambique (ISCTEM)	South
13. Instituto Superior de Transportes e Comunicações (ISUTC)	South
14. Instituto Superior de Estudos e Desenvolvimento Local- (ISEDEL)	South
15. Instituto Superior Mutasa (ISMU)	South
16. Instituto superior de Gestão, Administração e Educação (ISG)	South
17. Instituto Superior de Ciências de Educação à Distância (ISCED)	Centre
18. Instituto Superior de Gestão e Empreendedorismo Gwaza Muthine (ISGE-GM)	South
19. Instituto Superior de Ciências Empresariais e Tecnológicas (ISCET)	South
Higher schools	
1. Escola Superior de Jornalismo (ESJ)	South
2. Escola Superior de Ciências Náuticas (ESCN)	South
Academias	
1. Académia de Altos Estudos Estratégicos (AAEE)	South
2. Academia de Ciências Policiais (ACIPOL)	South
3. Academia Militar (AM)	North
Higher institutions created without operating until 2020	
Universities	
1. Universidade Técnica Diogo Eugénio Guilande (UTDEG)	2016
2. Universidade Águila (UNAQ)	2018
3. Universidade Novo Horizonte Eduardo Silva Nihia (UEHA)	2018
Institutes	
4. Instituto Superior de Ensino à Distância (ISEAD)	2014
5. Instituto Superior Sebastião Mussanhane (ISSMU)	2017
6. Instituto Superior Politécnico e de Tecnologias (ISPOTEC)	2018
7. Instituto Superior de Gestão, Tecnologias e Empreendedorismo (ISGETE)	2017
8. Instituto Superior Kaenda (ISK)	2017

(Continued)

TABLE 1 (Continued)

Total number of higher education institutions in 2020	
Description	Total
1. Universities	19
2. Institutes	27
3. Schools	4
4. Academies	3
Grand total	53

higher education institutions that are not operational in Mozambique (Table 1).

Table 2 presents the evolution of students in higher education at private and public institutions between 2003 and 2015. The total number of enrollments in the public system is 800,567 students, with a minimum of 11,233 students and a maximum of 116,037. In the private system, there are 328,415 students, with a minimum of 5,990 students and a maximum of 58,765 students. The total number of newcomers is 171,202 students (with a minimum of 1,546 and a maximum of 26,966) in public, while the private system accommodates 130,254 students (with a minimum of 1,963 and a maximum of 26,212). Finally, graduations in the public system amount to 73,008 students (with a minimum of 678 and a maximum of 16,831), while the private system has 32,333 students (with a minimum of 731 and a maximum of 5,762).

Statistical measures, such as the average number of students in public and private systems between 2003 and 2015, suggest variation according to the categories of enrollments, newcomers, and graduations. In the public system, enrollments averaged 61,582 students, 131,169 newcomers, and 5,616 graduations. In the private system, enrollments averaged 25,262 students, 10,020 newcomers, and 2,487 graduations. The standard deviation varies according to enrollments, newcomers, and graduations as follows: 34825.20, 8773.65, and 4311.25 (for public universities) and 17494.30, 7521.97, and 1475.26 (for private universities). In addition, the kurtosis varies according to enrollments, newcomers, and graduations as follows: -1.16 (platykurtic), -1.51 (platykurtic), and 2.90 (leptokurtic) for public universities and -0.57 (platykurtic), 0.15 (leptokurtic), and 0.44 (leptokurtic) for private universities.

Table 3 shows the evolution of higher education in Mozambique from 2003 to 2015, including a total of 1,128,982 students enrolled (with a minimum of 17,223 and a maximum of 174,802), 301,456 newcomers (with a minimum of 3,626 and a maximum of 53,178), and 105,341 graduations (with a minimum of 1,409 and a maximum of 19,550). The average number of students in public and private systems fluctuates based on the categories of enrollments, newcomers, and graduates, totaling 86844.77 students, 23188.92 students, and 8103.154 students, respectively. The standard deviation changes to 51510.41 for enrollments, 15819.76 for newcomers, and 5329.62 for graduations. In addition, the Kurtosis values change to -1.05273 , indicating a platykurtic distribution for enrollments, -0.82915 (platykurtic) for newcomers, and 0.051311 (leptokurtic) for graduations.

Based on the T-test (two-tailed) considering samples with unequal variances, the results showed a probability of significance $p = 0.003486108$ [in $P(T \leq t)$] when comparing enrollments,

$p = 0.335972713$ for newcomers, and $p = 0.025705598$ for graduates. In the *t*-critical values, the lowest *t*-value required to reject H_0 is provided at a significance level of 5%. The test considered the degrees of freedom for enrollments, newcomers, and graduates as $gl = 18$, $gl = 23$, and $gl = 15$, along with the *t*-values of $t = 2.10092204$, $t = 2.06865761$, and $t = 2.131449546$. Thus, the test rejects the null (H_0) hypothesis, indicating significant differences at the statistical significance level of $p < 0.003486108 < 0.05 = \alpha$ between those enrolled in public and private institutions during the study period. For the significance level of 0.05 (α) < 0.335972713 (p) between newcomers and 0.05 (α) < 0.025705598 (p) between graduates in public and private systems, the test accepts the null (H_0) hypothesis; therefore, there are no significant differences between the two groups evaluated during the study period.

According to Tables 4–6, the performance of the linear regression model, considering total graduations as the dependent variable, was not explained by total newcomers or total enrollments in the public system, as the *p*-values exceed 5% (Table 4). In contrast, total graduations in private universities were explained by total newcomers and total enrollments, with *p*-values less than 5% (Table 5). Conversely, total graduations in the higher education system in Mozambique are not explained by total newcomers or total enrollments (Table 6).

Discussion

Table 1 shows the evolution of higher education (HE) in Mozambique since 1962, growing from one institution (UEM) to 53 institutions, including 19 universities, 27 institutes, four higher schools, and three academies. This evolution is reflected in the total accumulated enrollments of 1,128,982 students, 301,456 newcomers, and 105,341 graduates between 2003 and 2015 (see Table 3). This observed trend is partly justified by rapid population growth, which creates a demand for higher education and drives economic competitiveness (Marginson, 2016; Bloom et al., 2006). The demand for higher education has led to the emergence of private universities, which have attempted to impose diversification and fragmentation on HE in Mozambique, primarily influenced by market forces and religious ideologies (Miguel et al., 2021; Langa, 2017). Additionally, it is noted that nine of the 53 institutions were not operational until 2020. The total of 53 institutions presents opportunities for both the public and private sectors to create mass undergraduate courses based on laws no 1/1995, no 05/2003, and no 46/2018 in Mozambique, as well as some government strategic plans from 2000–2012 and 2012–2020. This expansion and trend in higher education is also observed in other countries, such as those in East Asia (Mok and Jiang, 2017), and presents similarities to trends found in the Southern African region, driven by the massification and commodification of higher education in response to market challenges. On the other hand, the nine non-operational private institutions may reflect the outcomes of the Regulation of Inspection of Institutions of Higher Education created and implemented by CNAQ to ensure the quality of higher education in Mozambique.

Differentiation and diversification processes in undergraduate courses during this period were significant at Eduardo Mondlane University, unlike those at the Pedagogical University, where these elements are less evident, even in the same courses offered in other provinces outside Maputo. Although higher education policies,

TABLE 2 Evolution of higher education at private and public institutions from 2003 to 2015.

Years	Total in public institutions			Total of private institutions		
	Total enrollments	Total newcomers	Total graduated	Total enrollments	Total newcomers	Total graduated
2003	11,233	1,546	678	5,990	2080	731
2004	15,113	4,616	2012	7,143	1963	866
2005	18,863	5,258	2,294	9,435	3,498	1,078
2006	31,317	12,901	2,591	11,152	4,817	1788
2007	51,377	4,008	3,001	12,099	3,912	1,365
2008	58,643	5,963	4,803	16,814	7,315	2,356
2009	60,246	12,428	5,303	20,301	6,731	1703
2010	74,102	19,939	16,831	27,638	11,794	2,719
2011	80,010	10,170	3,222	33,454	12,709	2,814
2012	81,576	19,674	7,533	42,203	16,074	3,755
2013	97,104	23,712	7,111	30,969	12,649	3,144
2014	104,946	24,021	8,879	52,452	20,500	4,252
2015	116,037	26,966	8,750	58,765	26,212	5,762
Grand total	800,567	171,202	73,008	328,415	130,254	32,333

TABLE 3 Total enrollments, newcomers, and graduates in public and private sectors from 2003 to 2015.

Year	Total number of enrollments	Total number of newcomers	Total number of graduates
2003	17,223	3,626	1,409
2004	22,256	6,579	2,878
2005	28,298	8,756	3,372
2006	42,469	17,718	4,379
2007	63,476	7,920	4,366
2008	75,457	13,278	7,159
2009	80,547	19,159	7,006
2010	101,740	31,733	19,550
2011	113,464	22,879	6,036
2012	123,779	35,748	11,288
2013	128,073	36,361	10,255
2014	157,398	44,521	13,131
2015	174,802	53,178	14,512
Grand total	1,128,982	301,456	105,341

including a planned 10-year Strategic Plan for Higher Education since 2000, exist, they are unfortunately unrealistic and unattainable in the broader context, reflecting the weak efficacy of higher education policies and centralized governance. The Catholic University of Mozambique (UCM) is one of the private universities with branches in all provinces except Inhambane Province; however, the differentiation and diversity at UCM are also lacking, mirroring other private institutions, which predominantly offer courses in social and human sciences rather than in natural sciences and

engineering (Miguel et al., 2021). Despite the notable evolution of higher education between 2003 and 2015, with total enrollments in the public system being 800,567 while the private system accounts for 328,415 students during this period, the practices of differentiation and diversification in higher education in Mozambique remain insufficient. Nevertheless, real competition based on market forces, political orientation, and religious ideologies is evident (Miguel et al., 2021; Langa, 2017; Mário et al., 2003). Market forces associated with political orientations are reflected in the increase of newcomers, rising from 1,546 students in 2003 to 26,966 students in 2015, totaling 171,202 students in public institutions. Meanwhile, enrollment in private institutions grew from 2,080 to 26,212 from 2003 to 2015, culminating in a total of 130,254 students. Despite the observed increase during this period, higher education in Mozambique, as argued by McCowan (2018), has not adequately prepared professionals for public service, stimulated innovation, or provided local solutions to development challenges. Graduation rates rose from 678 students to 8,750 students in the public system, while private institutions experienced an increase from 731 to 5,762 students, totaling 73,008 students in the public system and 32,333 students in the private system. Although these enrollment figures indicate significant changes in the tertiary system in Mozambique, the quality of professionals can still be inferred from the duration of their graduation (Theune, 2015). Studies on the quality of graduates were conducted by Cheng and Tam (1997) and Harvey and Green (1993), highlighting that the number of graduates across different fields in Mozambique may only partially inform decision-making. In many instances, the quality issue in higher education is linked to the rapid expansion of courses, which negatively impacts the quality of graduates (Chege, 2015; Owuor, 2012; Oketch, 2003; Sifuna, 2010). The poor quality of graduates from higher education appears to be a continent-wide concern in Africa (Miguel et al., 2021); for example, the Inter-University Council of East Africa reported in 2014 that 49% of graduates in the tertiary system were inadequate. Due to the low quality of graduates, students

TABLE 4 ANOVA and summary output for public universities.

Regression statistics								
Multiple R	0.739053688							
R square	0.546200354							
Adjusted R square	0.455440425							
Standard error	3181.456701							
Observations	13							

ANOVA								
	df	SS	MS	F	Significance F			
Regression	2	1.22E+08	60912982	6018078	0019245			
Residual	10	1.01E+08	10121667					
Total	12	2.23E+08						

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	756.2888164	1849.993	0.408806	0.691299	−3365.75	4878.331	−3365.75	4878.331
Total enrollments	0.004936542	0.054043	0.091345	0.929022	−0.11548	0.125351	−0.11548	0.125351
Total newcomers	0.345931781	0.214511	1.612653	0.137896	−0.13203	0.823892	−0.13203	0.823892

TABLE 5 ANOVA and summary output for private universities.

Regression statistics								
Multiple R	0.992713278							
R Square	0.985479652							
Adjusted R Square	0.982575582							
Standard error	194.7371415							
Observations	13							

ANOVA								
	df	SS	MS	F	Significance F			
Regression	2	25737610.15	12868805	339.3444	6.45E−10			
Residual	10	379225.543	37922.55					
Total	12	26116835.69						

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	645.9748446	107.2631862	6.022335	0.000128	406.9776	884.9721	406.9776	884.9721
Total enrollments	−0.048618472	0.025438514	−1.91122	0.085034	−0.1053	0.008062	−0.1053	0.008062
Total newcomers	0.306342704	0.059163901	5.177865	0.000414	0.174517	0.438168	0.174517	0.438168

find it increasingly difficult to secure employment, and corruption is often relied upon to obtain jobs in both the public and private sectors. The inadequate technical preparation of graduates and the offering of irrelevant fields in higher education contribute to struggles in finding employment opportunities, as stated by [Vedder et al. \(2013\)](#), [Bai \(2006\)](#), [Mok and Wu \(2016\)](#), and [Lauder \(2014\)](#). This quality issue is tied to the rapid expansion of courses in higher education without proper conditions, leading to negative impacts

and a low standard of graduates ([Chege, 2015](#); [Owuor, 2012](#); [Oketch, 2003](#); [Sifuna, 2010](#)).

The application of the *t*-test as a statistical decision tool was considered an aid to understanding the differences in the distribution of enrollments, newcomers, and graduates between public and private institutions. The *t*-test indicated significant differences (considering different variances) between those enrolled in public and private institutions during the study period at a statistical

TABLE 6 ANOVA and summary output for public and private universities.

Regression statistics								
Multiple R	0.833845							
R Square	0.695297							
Adjusted R Square	0.634357							
Standard error	3222.739							
Observations	13							

ANOVA								
	df	SS	MS	F	Significance F			
Regression	2	2.37E+08	1.18E+08	11.40943	0.002627			
Residual	10	1.04E+08	10386049					
Total	12	3.41E+08						

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1673.358	1849.465	0.90478	0.386861	−2447.51	5794.223	−2447.51	5794.223
Total enrollments	−0.00549	0.057654	−0.09523	0.926014	−0.13395	0.122971	−0.13395	0.122971
Total newcomers	0.297841	0.187726	1.586567	0.143694	−0.12044	0.716121	−0.12044	0.716121

significance level of $p < 0.003486108 < 0.05 = \alpha$. These results align with those presented by [Odejide et al. \(2006\)](#) at the University of the Republic of Nigeria. Conversely, the t -test indicated no significant differences (considering different variances) between newcomers in the public and private systems, with significance levels at $0.05 (\alpha) < 0.335972713 (p)$ and $0.05 (\alpha) < 0.025705598 (p)$ between graduates. According to the t -test results, the evolution of higher education in Mozambique reflects the total enrollments of 116,037 students in the public system and 58,765 students in the private system. Among newcomers, there were 26,966 students in the public system and 26,212 students in the private system, while graduations totaled 8,750 students in public and 5,762 students in private, showing no significant differences. The absence of significant differences may reflect the increasing fragmentation of higher education institutions and the lack of differentiation and diversity practices between public and private institutions in Mozambique. Successful differentiation and diversity practices in similar contexts can be observed in South Africa and Cape Verde ([Miguel et al., 2021](#)). Additionally, according to [Tables 4–6](#), the linear regression model performance demonstrated no relationship between total graduations and total newcomers, nor between the total enrollments in the public system. This may indicate that the public system is influenced by various factors, including political, social, economic, and internal academic policies, alongside practices of fragmentation. In private universities, the total graduations were clearly explained by the total newcomers and total enrollments, reflecting effective fragmentation practices primarily focused on social and humanities sciences or government orientation to increase graduations. On the other hand, the total number of graduates in the higher education system in Mozambique is not accounted for by the total newcomers and total enrollments, highlighting different practices in the overall higher education system.

Conclusion

This study discusses the complementary understanding of the forms of integration and articulation in tertiary education in Mozambique. Although the higher education system in Mozambique has evolved between 2003 and 2015, there is no evidence that increased flexibility in higher education programs can facilitate student choices and enable them to align their studies with their career aspirations and job opportunities. An absence of significant differences is found between incoming and graduated students, reflecting the intensification of fragmentation practices among higher education institutions, as well as the lack of differentiation and diversity practices. The evolution of higher education in Mozambique is exemplified by total enrollments in the public system of 116,037 students and 58,765 students in the private system. Among newcomers, there are 26,966 students in the public sector and 26,212 students in the private sector, with graduations of 8,750 students in the public system and 5,762 students in the private system. The absence of significant differences between incoming and graduated students further reflects the intensification of fragmentation among higher education institutions and the lack of differentiation and diversity practices between public and private institutions in Mozambique. Moreover, the detected expansion and fragmentation processes within the system require decentralization to offset the heavy concentration of resources and activities in Mozambique. Differentiation and diversity processes may ensure educational quality and produce high-quality graduate outputs, research, and community outreach activities, all essential factors contributing to the country's development. To minimize the negative data presented in this research, it is recommended to ensure a common project of qualitative and equitable development in higher education, considering the dangers of rigorous differentiation and fragmentation of public and private institutions in Mozambique: (i) greater investment and harmonization in the tripod of education,

research, and extension, and (ii) equitable redistribution of resources between public and private systems.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

LM: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. AA: Investigation, Supervision, Visualization, Writing – original draft, Writing – review & editing. MG: Visualization, Writing – original draft, Writing – review & editing.

References

- African Union (2017). Assembly of The Union Twenty-Eighth Ordinary Session, 30–31.
- Bai, L. (2006). Graduate unemployment: dilemmas and challenges in China's move to mass higher education. *China Q.* 185, 128–144. doi: 10.1017/S0305741006000087
- Ben-David, D. (1993). Equalizing Exchange: Trade Liberalization and Income Convergence. *The Quarterly Journal of Economics*, 108, 653–679. doi: 10.2307/2118404
- Birnbaum, R. (1983). *Maintaining diversity in higher education*. San Francisco/Washington/London: Jossey-Bass Publishers. Available at: <https://eric.ed.gov/?id=ED243339>
- Bloom, D., Canning, D., and Chan, K. (2006). Higher education and economic development in Africa. Cambridge, MA: Harvard University.
- Castiano, P. J., and Ngoenha, E. S. (2013). A Longa Marcha duma Educação para Todos em Moçambique. 3ª Edição. Lda. Maputo, Moçambique: Editora Publiflix.
- Chege, M. (2015). Re-inventing Kenya's university: from a graduate-mill to a development-oriented paradigm. *Int. J. Educ. Dev.* 44, 21–27. doi: 10.1016/j.ijedudev.2015.07.002
- Cheng, Y. C., and Tam, W. M. (1997). Multi-models of quality in education. *Qual. Assur. Educ.* 5, 22–31. doi: 10.1108/09684889710156558
- Chilundo, A. (2002). The state of higher education in Mozambique, in UNESCO Africa regional conference on Progress and future directions of higher education in Africa, Abuja, Nigeria, pp. 1–37.
- Douglas, T. (2013). Contextual innovation and social engagement: from impact factor to impact. *S. Afr. J. Sci.* 109:2. doi: 10.1590/sajs.2013/a010
- Harvey, L., and Green, D. (1993). Defining quality. *Assess. Eval. High. Educ.* 18, 9–34. doi: 10.1080/0260293930180102
- Horn, A. S., and Lee, G. (2016). The reliability and validity of using regressions residuals to measure institution effectiveness in promoting degree completion. *Research in Higher Education*. 57, 469–496. doi: 10.1007/s11162-015-9394-7
- Horta, H., and Jung, J. (2014). (2014) higher education research in Asia: an archipelago, two continents or merely atomization? *High. Educ.* 68, 117–134. doi: 10.1007/s10734-013-9695-8
- Huang, F. (2017). The impact of mass and universal higher education on curriculum and instruction: case studies of China and Japan. *High. Educ.* 74, 507–525. doi: 10.1007/s10734-016-0061-5
- Huisman, J. (1995). *Differentiation, diversity and dependency in higher education*. Utrecht: Lemma.
- Kodjo-Grandvaux, S. (2021). FILOSOFIAS AFRICANAS. Tradução Bernardo Tavares Dos Santos at.al. Editora Cultura e Barbárie, Florianópolis, SC.
- Langa, P. V. (2006). *The constitution of the higher education institutions in Mozambique*. School of Education, Faculty of Humanities. University of Cape Town.
- Langa, P. V. (2012). A mercantilização do ensino superior e a relação com o saber: a qualidade em questão. *Rev. Científica UEM* 1, 21–41.
- Langa, P. V. (2014). Alguns desafios do ensino superior em Moçambique: do conhecimento experiência a necessidade de produção de conhecimento científico. In Brito L. De (Ed.), *Desafios para Moçambique* (pp. 365–395). Maputo: IESE.
- Langa, P. (2017). A disconnected multi-campus system: the neoliberal expansion and fragmentation of Mozambican higher education. *Tert. Educ. Manag.* 23, 23–40. doi: 10.1080/13583883.2016.1214286
- Langa, P. V., and Wangenge-Ouma, G. (2016). “Strong convictions, weak evidence: the challenge of building research capability in African higher education” in Pathways through higher education research a festschrift in honour of Peter Maassen. eds. N. Cloete, L. Goedegebuure, A. Gornitzka, J. Jungblut and B. Stensaker (Oslo: Department of Education, University of Oslo), 96–99.
- Lauder, H. (2014). Jobs or skills? The role of education in the 21st century Keynote speech presented at the 2014 APERA-HKERA annual conference, November 2014. Hong Kong Institute of Education. Available online at: <http://www.ied.edu.hk/include/getrichfile.php?key=4702ef08506287728> (Accessed September 10, 2015).
- Marginson, S. (2016). “Global stratification in higher education” in Higher education, stratification and workforce development: Competitive advantage in Europe, the US and Canada. eds. S. Slaughter and B. Taylor, vol. 45 (Cham: Springer), 13–34. Available at: <https://www.springer.com/gp/book/9783319215112>
- Mário, M., Fry, P., Levey, L., and Chilundo, A. (2003). Higher education in Mozambique: A case study. Oxford: James Currey.
- McCowan, T. (2018). Quality of higher education in Kenya: addressing the conundrum. *International Journal of Educational Development*. 60, 128–137. doi: 10.1016/j.ijedudev.2017.11.002
- MCTESTP (2021). *Dados estatísticos sobre o ES em Moçambique, 2021*. Maputo: DNES- MCTESTP (Discontinued in 2025).
- Miguel, L. L. A. J., Tambe, T. A. F., and Costa, C. S. (2021). Examining expansion and trends in higher education in Mozambique, Africa. *High. Educ.* 83, 411–439. doi: 10.1007/s10734-020-00666-4
- Minarelli, J. A. (1995). *Empregabilidade, como ter trabalho e remuneração sempre*. São Paulo. Gente. 1995.
- Mok, K. H., and Jiang, J. (2017). Massification of higher education and challenges for graduate employment and social mobility: East Asian experiences and sociological reflections. *Int. J. Educ. Dev.* 63, 44–51. doi: 10.1016/j.ijedudev.2017.02.003
- Mok, K. H., and Wu, A. (2016). Higher education, changing labour market and social mobility in the era of Massification in China. *J. Educ. Work.* 29, 77–97. doi: 10.1080/13639080.2015.1049028
- Morosini, M. C. (2001). The quality of higher education: isomorphism, diversity and fairness, *Interface Comunic. Saúde, Educ.*, 5, n., p.89–102. Available online at: https://www.researchgate.net/publication/266141274_A_Universidade_o_Curriculo_e_o_Conhecimento_Das_Origens_aos_Tempos_Atuais

Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

- Naidoo, R. (2011). Rethinking Development: Higher Education and the New Imperialism. *Handbook Chapter. Economics*. 2011. doi: 10.4337/9780857936233.00012
- Ng'ethe, J., Subotzky, G., and Afeti, G. (2008). Differentiation and articulation in tertiary education systems. A study of twelve African countries. Washington, DC: The World Bank.
- Nicolaides, A. (2014). 'Research and innovation as economic development drivers', Afr. J. Hosp. Tour. Leis., Vol. 3. Available online at: <http://www.ajhtl.com>
- Odejide, A., Akanji, B., and Odekunle, K. (2006). Does expansion mean inclusion in Nigerian higher education? *Women's Stud. Int. Forum* 29, 552–561. doi: 10.1016/j.wsif.2006.10.006
- Oketh, M. O. (2003). The emergence of private university education in Kenya: trends, prospects, and challenges. *Int. J. Educ. Dev.* 24, 119–136. doi: 10.1016/j.ijedudev.2003.10.005
- Owuor, N. A. (2012). Higher education in Kenya: the rising tension between quantity and quality in the post-Massification period. *High. Educ. Stud.* 2, 126–136. doi: 10.5539/hes.v2n4p126
- Pacheco, F. L. (2002). O isomorfismo institucional nos teatros da região metropolitana do Recife. In *Anais do encontro Nacional dos Programas de Pós-graduação em Administração*, Salvador, BA, Brasil.
- Pike, G. R., and Graunke, S. S. (2015). Examining the effects of institutional and cohort characteristics on retention rates. *Res. High. Educ.* 56, 146–165. doi: 10.1007/s11162-014-9360-9
- Provini, O. (2019). Negotiating the marketization of higher education in East Africa: a comparative analysis of Tanzania and Kenya. *Higher Educ.*, 77, pp.323–342.
- Sampaio, H. (2014). Diversidade e diferenciação no ensino superior no Brasil: conceitos para discussão. *Rev. Bras. Ciênc. Soc.* 29, 43–55. doi: 10.1590/S0102-69092014000100003
- Shin, J.C., and Harman, G. (2009). New challenges for higher education: global and Asia-Pacific perspectives. *Asia Pacific Educ. Rev.* 10, 1–13. doi: 10.1007/s12564-009-9011-6
- Sifuna, D. N. (2010). Some reflections on the expansion and quality of higher education in public universities in Kenya. *Res. Post-Compulsory Educ.* 15, 415–425. doi: 10.1080/13596748.2010.526803
- Tambe, T. A. F., and Miguel, L. L. A. J. (2021). Assessing emerging trends of expansion and women enrolments in the higher education system in Mozambique. *Women's Stud. Int. Forum* 88:102503. doi: 10.1016/j.wsif.2021.102503
- Theune, K. (2015). The working status of students and time to degree at German universities. *High. Educ.* 70, 725–752. doi: 10.1007/s10734-015-9864-z
- Trow, M. (1973). *Problems on the transition from elite to mass higher education*. Berkeley (California): Carnegie Commission on Higher Education.
- Trow, M. (2006). "Reflections on the transition from elite to mass to universal access: forms and phases of higher education in modern societies since WWII" in *International Handbook of Higher Education. Part One: Global Themes and Contemporary Challenges*. eds. J. J. F. Forest and P. G. Altbach (Dordrecht: Springer).
- UNESCO Institute for Statistics (1998). UNESCO data tables. Retrieved on 19 June 2024, from UNESCO. Available at: <http://data.uis.unesco.org/>
- Vedder, R., Denhart, C., and Robe, J. (2013). Why are recent college graduates underemployed? University enrollments and labour-market realities. Center for college affordability and productivity (NJ1). Available online at: <https://eric.ed.gov/?id=ED539373>
- Wehn, U., and Montalvo, C. (2018). Dynamics of water innovation: foundations of the field, journal of cleaner production. *J. Clean. Prod.* 171:S19. doi: 10.1016/j.jclepro.2017.10.118
- World Bank (2010). *Financing higher education in Africa*. Washington, DC: World Bank.
- Zavale, N., and Langa, P. (2018). University-industry linkages' literature on sub Saharan Africa: systematic literature review and bibliometric account. *Scientometrics* 116, 1–49. doi: 10.1007/s11192-018-2760-4
- Zezeza, P. T. (2007). *The Study of Africa Volume 2: Global and Transnational Engagements. Council for the Development of Social Science Research in Africa. Avenue Cheikh Anta Diop Angle Canal IV, BP 3304 Dakar, 18524 Senegal*. Available at: <http://www.codesria.org>
- Zezeza, P. T. (2016). *The transformation of global higher education, 1945–2015*. New York: Palgrave-MacMillan.