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Higher Education Institutions and Employability in South Africa: A Systematic Review of the Literature

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Systematic Review

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HIGHER EDUCATION INSTITUTIONS AND EMPLOYABILITY IN SOUTH AFRICA: A SYSTEMATIC REVIEW OF THE LITERATURE

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Abstract: Producing employable graduates who contribute significantly to sustainable economic growth and development has been the main goal of higher education institutions globally. However, there has been a growing concern about the quality of higher education, especially its relevance to the job market. This is because graduates are often found to be employed outside the job markets that universities traditionally prepare them for, and even when they do find employment, how well they perform their work remains a major question. This systematic literature review examined higher education institutions and employability in South Africa, with particular emphasis on how effectively they produce employable graduates. The literature review used a systematic approach to search for relevant studies across 7 academic databases, including Google Scholar, PubMed, OpenAlex, Scopus, Lens, Semantic Scholar, and Web of Science. Based on the literature review's inclusion criteria, 1000 publications were initially identified. These included journal articles, books, book chapters, proceedings, datasets, edited books, posted content, reference entries, monographs, peer reviews, and other works on the relationship between higher education institutions and employability from 2015 to 2025. By synthesising and assessing the studies for eligibility, the study identified 25 relevant research articles. The data from the 25 articles were analysed and synthesised to identify the nexus between higher education institutions and employability within South Africa. From the 25 assessed articles, the study found that the adaptation of South African higher education institutions to the Four Industrial Revolution (4IR), the use of online learning tools and AI, government expenditure on higher education student performance, graduates' employable skills and competencies, digitalisation, quality assurance and globalisation of the South African higher education systems were crucial in increasing the graduates' chances of employability. In addition to the review, the study also summarised the determinants of graduates' employability. To increase graduates' employability, this study therefore recommends increasing work-integrated learning (WIL), skills-enhancing activities, mentorship programs, and transversal competencies.

Keywords: Higher education institutions, Employability, determinants of graduate employability,4IR and South Africa

1. Introduction

Producing employable graduates that contribute significantly to sustainable economic growth and development has been the main goal of higher education institutions globally [51]. However, there has been a growing concern about the quality of higher education, especially its relevance to the job market. This is because graduates are often found to be employed outside the job markets that universities traditionally prepare them for, and even when they do find employment, how well they perform their work remains a major question [56]. This is one of the reasons many governments around the world are concerned that investments in higher education should raise the stock of human capital, often seen as a source of national economic well-being [19]. Therefore, it is essential not only to explore the multifaceted relationship between higher education institutions and employability but also to enhance our understanding of their effectiveness in producing market-ready graduates.

Within South Africa, the education policy has been largely influenced by global demands that higher education institutions' education and training better align with the needs and expectations of society, the state, and industry, to ensure smooth social and economic progress [22]. However, South Africa is a developing nation with a very high unemployment rate, especially among youth, as it generally lacks the relevant experience employers require [38]. Evidence suggests that the supposed decline in graduate labour market outcomes in South Africa is mainly attributed to the higher education system's lack of responsiveness to structural variations within the domestic economy since 1994 and the variations in the underlying demographic composition of the nation's pool of graduate labour force participation and the fields in which graduates chose to study [59]. Scholars argue that unemployment and employment measures have not accurately captured the complexities of labour markets, especially now that the Fourth Industrial Revolution (4IR) has brought major changes to how industries operate [34,64]. This study, therefore, provides a systematic review of higher education institutions and employability in the South African economy.

Despite youth unemployment for the ages 15 to 43 remaining astonishingly high at 46.1%, the university graduate unemployment rate is 23.9%, which is relatively low compared to the national unemployment rate, which decreased from 46.1% in the first quarter (Q1) of 2025 to 43.8% in the fourth quarter (Q4) of 2025 [49,55]. Even though this rate suggests that higher education institutions in South Africa play a significant role in graduate employability, youth graduate unemployment remains a major issue in the country [39]. Notwithstanding the COVID-19 economic shock, which exacerbated the nationwide unemployment rate, it is important to note that one of the major causes of graduate unemployment in South Africa is the mismatch between skills, discouraged first-time job seekers, the education divide, and unrealistic salary expectations [37,49]. Some scholars have attributed the issue of graduate unemployment to the 4IR, arguing that its accelerating technological shifts require higher education institutions to produce graduates with future-focused, interdisciplinary, and adaptive competencies. However, aligning with it remains a significant challenge, especially in developing nations, due to uneven digital access, massification, and limited institutional support, which raises the risk of vocational drift in which employability goals overshadow civic missions and disciplinary depth [29].

Through various initiatives, such as the National Development Plan 2030, which aims to reduce unemployment from 25% in 2012 to 6% by 2030, South Africa has been continuously implementing policies to reduce unemployment. However, the country's efforts seem inefficient, as unemployment has increased to over 30% since 2012 [43]. Other key initiatives that South Africa has implemented to reduce graduate unemployment, primarily by bridging the gap between education and work through internships, learnerships, and public-private partnerships, include the Youth Employment Service (YES), the Presidential Youth Employment Initiative (PYEI), and public internships [53]. However, they also fail to sustainably reduce graduate unemployment. This is because these initiatives face limited private-sector partnership, high demand-side failure, and a structural mismatch between the skills produced and market demand, often leading to temporary work rather than long-term career growth [28,42,47].

By conducting a systematic review of the literature, this study aims to provide applicable and nuanced recommendations to higher education institutions and policy makers within the Department of Employment and Labour and Department of Higher Education and Training (DHET) in South Africa and beyond on how to increase the graduate employability and ultimately reduce overall unemployment, particularly youth unemployment, as few studies within the literature have done so. This investigation offers novel contributions to the literature by highlighting the major causes of graduate unemployment in South Africa and the role of the Fourth Industrial Revolution, which many studies seem to overlook when examining the relationship between higher education institutions and employability, particularly those conducted in South Africa. Nevertheless, it is important to note that this study employs a systematic literature review, which offers a structured, transparent, and reproducible method for synthesising the existing literature, significantly reducing bias compared to traditional reviews. The method offers comprehensive coverage to identify research gaps, raises the accuracy and reliability of findings, and enables generalisation of results across studies [32]. Additionally, this study advances our knowledge by providing insights that deepen our understanding of sustainable economic development as it addresses one of the United Nations (UN) Sustainable Development Goals (SDGs), particularly Goal 8: promoting sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all.

1.1 Materials and methods

This study conducted a systematic literature review using specific tools and software. The software leveraged the CrossRef database, which aggregated academic metadata from platforms such as Google Scholar, PubMed, OpenAlex, Scopus, Lens, Semantic Scholar and Web of Science. The search terms included keywords such as " Higher Education Institutions", "Employability" and "South Africa". The search yielded 1000 publications in English, including journal articles, books, book parts, book chapters, proceedings, datasets, edited books, posted content, reference entries, monographs, peer reviews, and other works addressing the relationship between higher education institutions and employability from 2015 to 2025. These publications were published in various countries and regional contexts. This necessitated filtering these publications to include only journal articles and studies published in South Africa. After filtering the publications to include only journal articles, the search returned 392 articles. These articles were further filtered to yield 90 articles specific to South Africa that address the relationship between higher education institutions and employability within the nation. These articles were then assessed for eligibility and analysed to extract the relevant information regarding higher education institutions and employability. The findings from the articles were then synthesised to provide a comprehensive overview of the subject of interest. Figure 1 shows the flow diagram of the literature screening process.

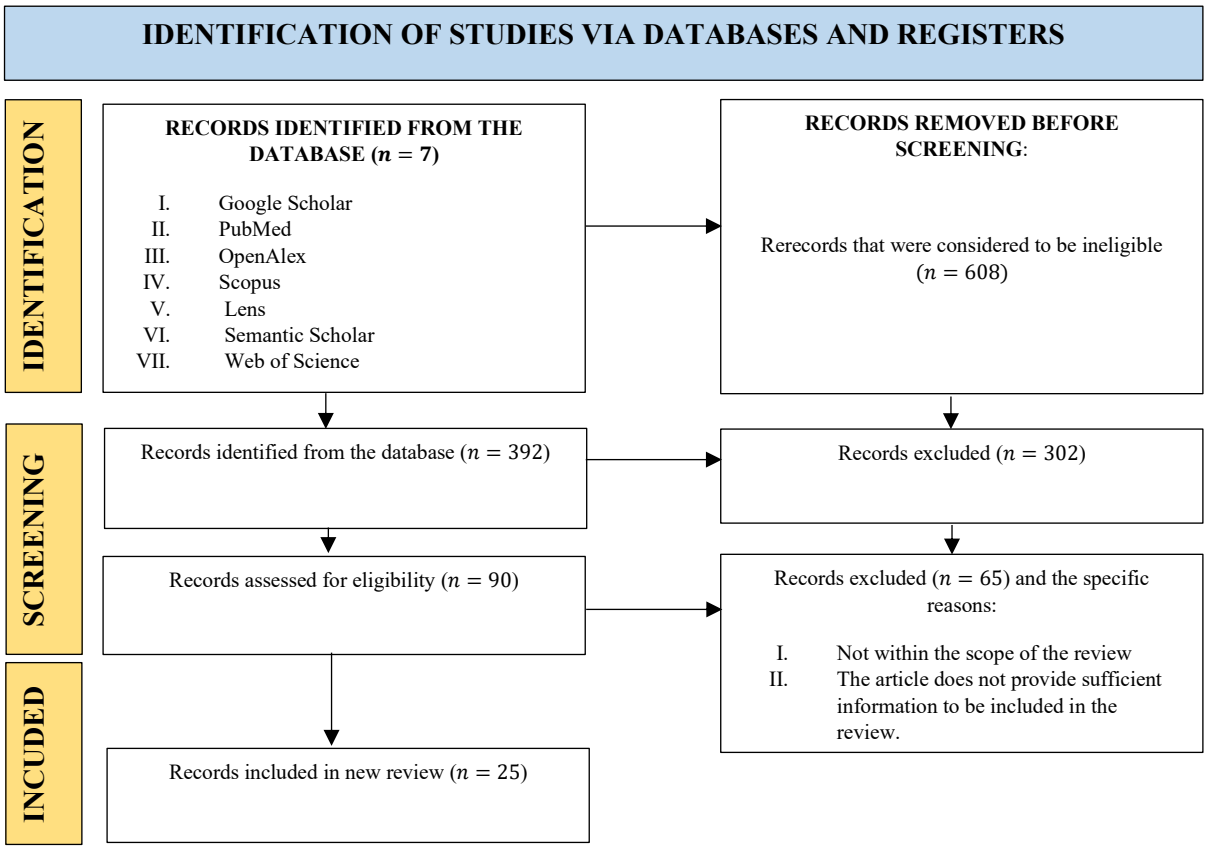


Fig.1. Flow diagram of the literature screening process.

2. Data synthesis

In the process of synthesising data from the selected journal articles, important information, including the study's provinces, authors, publication years, data sources, methodology types, and the nexus between higher education institutions and employability in South Africa, was extracted. The publication years and authors shed light on the research timeline, whilst the study's provinces provided geographical context. The verified data sources range from primary data collection to secondary sources and mixed-methods approaches, enhancing our understanding of the research landscape. This study specifically explored the challenges, obstacles, and opportunities faced by higher education institutions in South Africa in producing employable graduates while also improving their employability competencies. To perfectly synthesise this, this study grouped the studies within the new review in sub themes which include; the adaptation of South African higher education institutions to the 4IR and the use of online learning tools and artificial intelligence, government expenditure on student performance in South African higher education institutions, assessment of graduate employable skills and employability competences in South Africa, lessons learned from the covid-19 by South African higher education institutions, quality assurance of higher education institutions in South Africa and globalisation of higher education in South Africa. To better understand graduate employability, the study includes a separate section not included in the review that focuses on the determinants of graduate employability. This is to enhance our understanding of what it takes for graduates to get employed, beyond the role of higher education

institutions. Overall, this methodology provided valuable insights into the dynamic and complex relationship between higher education institutions and employability in the country, highlighting the specific challenges that hinder progress in this area.

3. Results

3.1 Research progress on higher education institutions and employability in South Africa

Figure 2 shows the results of 25 research articles analysed in this study, comprising 15 qualitative, 9 quantitative, and 1 mixed-method studies. This reflects how researchers integrate diverse research approaches to enhance our understanding of the multidimensional, complex relationship between higher education institutions and employability in South Africa. By using both qualitative and quantitative approaches, researchers can obtain a more holistic understanding of the issue while triangulating data across various sources [58]. Moreover, Figure 2 shows that the primary data collection approach is the one most commonly used by researchers. This is because primary data collection methods offer high-quality, tailored insights directly from the source, ensuring high accuracy and relevance to specific research questions [9]. Primary data can therefore be collected through focus groups, interviews and surveys [24]. Another mostly used method by researchers is secondary data. Secondary data provides access to large-scale, high-quality data, such as longitudinal studies or census data, that would be challenging to collect on one's own [63]. Secondary data, therefore, uses data from scholarly publications, government reports and existing databases [24].

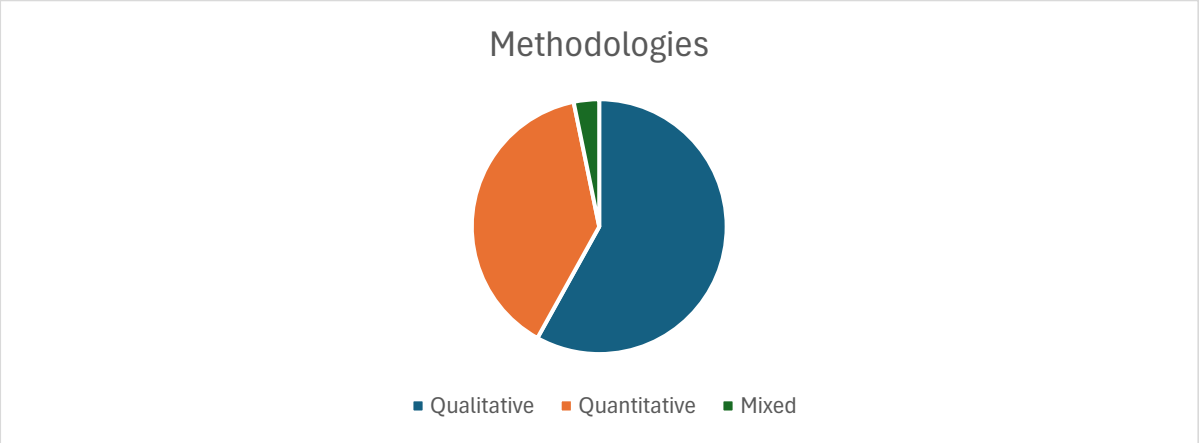


Fig.2. Methodology and data sources of the included literature.

That said, looking at the number of articles published per year, the trend is inconsistent. For example, between 2015 and 2016, the number of articles published increased from 5 articles per year to 12 articles per year. This is attributed to the relatively high level of graduate unemployment, which exerted pressure on higher education institutions. Between 2017 and 2025, the number of articles published per year increased from 1 article per year to 16 articles per year. This is mainly due to the increase in graduate unemployment, which rose from 5.8% in 2008 to 11.8% in 2023 and decreased slightly to 10.2% in 2024 [27].

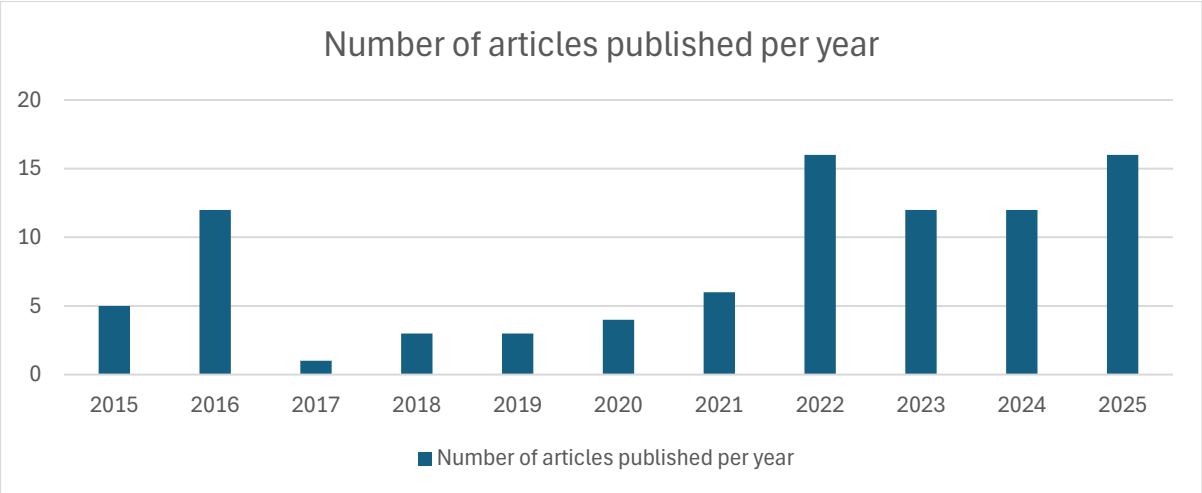


Fig.3. Number of articles published per year

When it comes to research output per province in South Africa, Gauteng and the Eastern Cape have the most researchers conducting studies in this area.

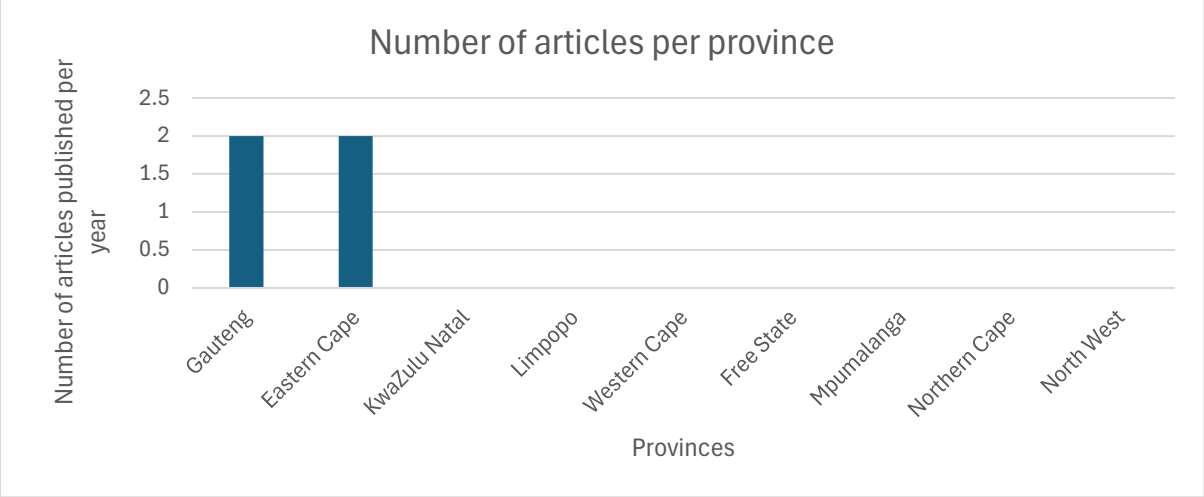


Fig.4. Number of articles per province in South Africa

3.2 Higher education institutions and employability in South Africa

3.2.1 The adaptation of South African higher education institutions to the 4IR and the use of online learning tools and artificial intelligence (AI)

Mogale, Mkhomaz and Iyamu [36] emphasise that competitive intelligence and information and communication technology (ICT) in the face of the 4IR have become common parlance and strategic priorities for every higher education institution to improve and maintain their external and internal services. These scholars argue that competitive intelligence and ICT enable organisations to gain a deeper understanding of the industrial and commercial environment and to learn continually from competitors' strategies. This can therefore influence graduates' skills and their competitiveness in the market. However, since both competitive intelligence and ICT include online learning tools, Kaeane, Molokomme and Lebelo [17] argue that despite the benefits offered by online learning tools, which include enhanced flexibility and opportunities for self-paced learning, their efficiency is hindered by limited internet access, unreliable digital infrastructure, high data costs and low levels of digital literacy among students. This can therefore have a significant impact on graduates' employability in the market.

Similarly, a study by Ragolane [48] emphasises that higher education institutions are rapidly embedding AI into academic programmes in order to meet the increasing demand for data-driven and digital skills. However, the spread of AI education is limited by uneven institutional readiness, limited staff capacity and infrastructure disparities, particularly among historically disadvantaged universities in South Africa. This affects the graduates 'employability competencies, especially in the long run. Van Schalkwyk and Van Antwerpen [60] support this notion, emphasising that online distance e-learning in South Africa needs improvement, as the modern economy must be dynamic and responsive to service demands, especially in private higher education institutions. This is because 4.0 (4IR) is a relatively new field in South Africa, both on the academic and business levels, especially in higher education institutions, where it has been suggested that they need to be better attuned to 4IR [3,61]. It is therefore suggested that without collective decision-making and vision, few South African institutions will thrive in the current times of ICT [40]. These are some of the reasons why it is important for higher education institutions to be attuned to the 4IR and to improve ICT and online learning, so that graduates are better equipped with the necessary skills to increase their employment prospects.

3.2.1 Government expenditure on South African student performance in higher education institutions

A study by Mohd, Naghavi and Subramaniam [37] emphasises that education enhances an individual's competencies and skills, thereby improving their efficiency and earning capacity, while offering economic benefits to both society and the country. Their study indicates that, for this reason, various developing countries, including those in Sub-Saharan Africa, have increased government expenditure on education. This is because government expenditure has a positive influence on many aspects such as economic growth, graduate employability, educational quality and access to higher education. The study therefore argues that, while government expenditure across all levels of education in South Africa has a stronger effect on student performance in higher education, there is a negative relationship between tertiary expenditure and graduate outcomes.

3.2.2 Assessment of graduates' employable skills and employability competencies in South Africa

Murire, Cilliers and Chinyamurindi [41] assessed the graduate and employability skills model through social media in South Africa. Their study argues that there is a significant direct impact of social media use on graduate skills, and a significant direct impact of graduate skills on perceived employability. Their study's outcomes also supported the mediating role of graduates' skills in the relationship between social media and perceived employability. Maama [26] argues that transformational leadership within the higher education institutions in South Africa should focus on vision-setting and employee empowerment,

fostering trust and commitment. This could therefore have a significant impact on graduate employability in the country. However, graduates in South Africa often lack essential work-readiness skills, such as problem-solving, effective communication, and soft skills, which are crucial for success in the workplace [62].

Nevertheless, Chweu, Schultz and Jordaan [7] emphasise the urgent need to improve graduates' competencies in the world of work. However, this is difficult in the South African context, as higher education institutions are not adequately prepared to meet employers' expectations for graduates' work-readiness. This is one of the reasons why industries and universities acknowledge the need to improve graduate employability through multiple strategies that primarily focus on theory-practice integration [11]. In support of these arguments, Pitan and Muller [46] argued that the curriculum within South African higher education institutions had the greatest effect on graduates' employability, followed by career development learning, personal development and work experience. Additionally, students in higher education institutions need adequate career counselling to equip them with a clear sense of the future and knowledge of which career to pursue [30]. In contrast, a study by Sotshangane and Obioha [52] revealed that employers often expect the least from young graduates in terms of leadership and quantitative skills. These arguments are therefore significant in enhancing our understanding of graduates' employable skills and employability competencies in South Africa.

3.2.3 Lessons learned from COVID-19 by South African higher education institutions

COVID-19 hit the South African economy enormously, reducing economic and social activities and ultimately increasing graduate unemployment. During the lockdowns implemented across the country, students at higher education institutions lost much of their study time due to a lack of funds for essential study materials. The majority of students rated their institutions' eLearning portals as either good or excellent. However, evidence suggests that college students faced the greatest challenges during the COVID-19 period [12]. A study by Khoza [18] found that students are particularly interested in integrating in-person and online classes due to the flexibility they offer. This is because COVID-19 brought serious emotional and psychological stress to academics, which was detrimental to their well-being, and online classes facilitated learning and teaching during those times [33]. One lesson that most higher education institutions learned from the COVID-19 era was the importance of digital technologies in facilitating teaching and learning. This, therefore, means that South Africa should improve its digital capacities, which remain a major issue for the nation [35]. Improving digital competencies helps graduates to better adapt to economic shocks that require digital skills. Nonetheless, scholars argue that partnerships will be a key factor in facilitating sustainable development, as the COVID-19 pandemic compounded existing challenges [44].

3.2.3 Quality assurance in higher education institutions in South Africa

Regarding the quality assurance within South African higher education institutions, it is important to note that there are various challenges and barriers in fulfilling the quality assurance requirements in respect of accreditation to the Department of Higher Education and Training (DHET), despite the expansion of higher education institutions specifically private higher education institutions, indicating significant progress in private sector education institutions [31]. Private higher education institutions face three major challenges when they attempt to engage in quality assurance. These include financial and physical resources; capacity building, such as staff responsibilities and roles, academic leadership and development, and research; and program design, including curriculum design [54]. This has a major effect on the employability skills and competencies of graduates from private institutions.

3.2.4 Globalisation of higher education in South Africa

Despite South Africa being the smallest among the international partnerships, such as the BRICS nations, and having relatively fewer higher education institutions, the nation has several world-class universities and is the higher education leader on the African continent. Therefore, increasing budget allocations to higher education institutions is a critical factor that the South African government must always take into account [2]. The globalisation of South African higher education institutions makes South African graduates employable not only within the country but also in other parts of the world, with highly employable competencies. Figure 5 shows the flow diagram of higher education institutions and employability in South Africa.

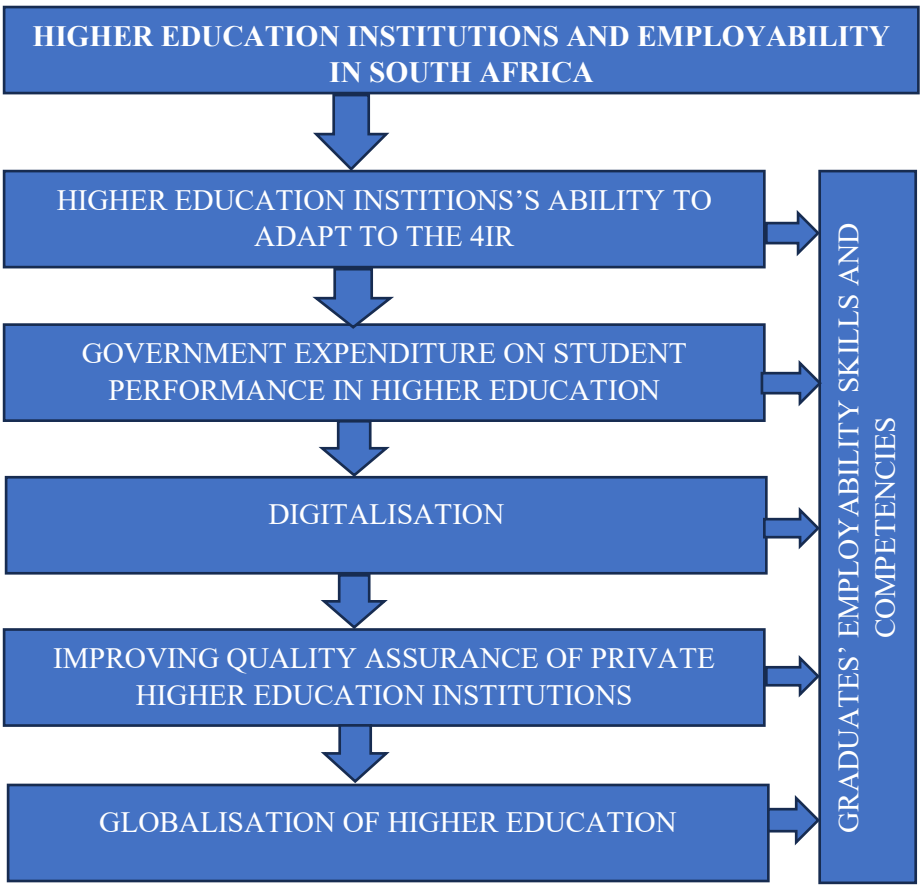


Fig.5. Flow diagram of higher education institutions and employability in South Africa.

3.3 Determinants of graduates' employability

AUTHORS	DETERMINANTS
Bakari and Khoso [4]	Hope, optimism and self-efficacy
Aliu and Aigbavboa [1]	University and industry collaborations
Pitan and Atiku [45]	Career guidance activities
Krajňáková, Pilinkienė and Bulko [21]	Gross domestic product, gross domestic expenditure on research and experimental development by sector of higher education and foreign direct investments
Kozeski, Bucevska and Iliev [20]	Obtaining employment during the study
Borah, Malik and Massini [5]	University–Industry Collaborations (UICs)
Fenta, Asnakew and Debele [13]	Cumulative GPA, preferred field of study, and internship practice
Dipitso [11]	Experience and skills
Byrne [6]	Work experience, age, degree type, disability, and ethnicity
Ma and Chen [25]	Perceived employability
Hosain, Mustafi and Parvin [15]	Academic performance, technical skills, communication skills, personality, leadership and motivational skills, and teamwork and problem-solving skills
Ciriaci and Muscio [8]	Attending universities with good research performance
González-Romá, Gamboa and Peiró [14]	Indicators of human and social capital
Thang and Wongsurawat [57]	English language skills, soft skills and adaptability skills
Garrouste and Rodrigues [23]	Type of degree
Devaney and Roberts [10]	Possession of a postgraduate degree
Singh, Chawla, Agarwal and Desai [50]	Innovative skills and innovative abilities along with the knowledge, innovative abilities, personality factors, career-building traits, emotional intelligence and efficacy beliefs

Conclusion and policy recommendations

The main aim of this study was to explore the relationship between higher education institutions and employability in South Africa, focusing on how effectively these institutions produce graduates equipped with the employment skills and competencies demanded by the labour market. To do this, the study conducted a systematic literature review. The search yielded 1000 publications in English, including journal articles, books, book parts, book chapters, proceedings, datasets, edited books, posted content, reference entries, monographs, peer reviews, and other works addressing the relationship between higher education institutions and employability from 2015 to 2025. These publications were published in various countries and regional contexts. This necessitated filtering these publications to include only journal articles and studies published in South Africa. After filtering the publications to include only journal articles, the search returned 392 articles. These articles were further filtered to yield 90 articles specific to South Africa that address the relationship between higher education institutions and employability within the nation. After assessing the 90 studies for eligibility, only 25 were found to be relevant. The study revealed that the adaptation of South African higher education institutions to the 4IR, the use of online learning tools and AI, government expenditure on higher education student performance, graduates' employable skills and competencies, digitalisation, quality assurance and globalisation of the South African higher education systems were crucial in increasing the graduates' chances of employability. Based on the findings this study therefore recommends work-integrated learning (WIL); intergrading internships, co placements and real-world projects into the curriculum to provide critical exposure; skills-enhancing activities: promoting participation in extracurriculars such as sports, part time work, and volunteering to increase "life skills" and self-confidence; mentorship programs: implementing mentorship initiatives to connect students with experienced industry professionals for guidance, networking and tacit knowledge; focus on transversal competencies: strengthening soft skills such as critical thinking, problem-solving, flexibility and emotional intelligence, which are highly valued in morden workplaces.

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