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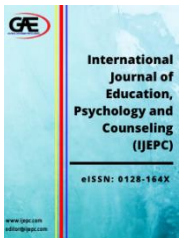

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THE IMPLEMENTATION OF TRACER STUDY AT TERTIARY EDUCATION INSTITUTIONS: A REVIEW OF RECENT LITERATURE

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Abstract:

Tracer study has emerged as a critical tool for education institutions to assess the relevance of their academic programs and the employability of their graduates. By tracking the post-graduation experiences of alumni, these studies provide valuable insights into the alignment between academic programs and industry needs. The primary problem addressed in this article is the need for an updated and structured view of how tracer study is implemented at these institutions. To achieve this, an extensive search of scholarly articles from Scopus, Web of Science and Science Direct was carried out, focusing on studies published between 2022 and 2024, using the PRISMA framework. A total of 26 final data was analysed. Findings were divided into three themes namely graduate employability; technical innovations; and competency development. This review has revealed that it is essential to bridge the gap between academia and industry to enhance graduate employability. This can be achieved through initiatives such as industry partnerships, internships, and work-integrated learning programs. The use of machine learning models and predictive analysis tools can provide valuable insights into graduate outcomes, enabling education institutions to make informed decisions to improve student preparation and curriculum development. Soft skills, such as critical thinking and communication are highly valued by employers and can significantly impact graduate employability. Education institutions should prioritize the development of these skills through a variety of pedagogical approaches, including experiential learning, group work, and case studies.

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Keywords:

Tracer Study, Tertiary Education Institution, PRISMA framework

Introduction

Tracer study has emerged as an essential mechanism for *Tertiary Education Institutions* (TEIs) to gauge the effectiveness of educational programs (Cuadra et al., 2019; Dzomeku et al., 2024; Romadlon & Arifin, 2021). Tertiary education refers to all formal post-secondary education, including public and private universities, colleges, technical training institutes, and vocational schools. By providing insights into employment rates, job satisfaction, and academic skills; tracer studies enable TEIs to make informed decisions regarding their curricula and better prepare students for the labour market.

Previous studies have shown that tracer study can effectively identify gaps between academic offerings and industry expectations (Jones et al., 2024; Zakariya, 2017). Despite these contributions, the methodologies employed in these studies often face limitations, such as issues with data accuracy, response rates, and the depth of longitudinal analysis. Current literature does not fully address how modern computerized tracking systems could overcome these limitations, opening up the possibility of refining methodologies and improving career outcome assessments. Addressing these gaps requires a shift towards innovative tracking systems that provide a more accurate, timely, and detailed insights into graduates' career paths, thereby enhancing the relevance and impact of educational programs.

The dynamic nature of the labour market can complicate tracer study results. The rapid pace of technological advancements and shifting industry demands make it difficult for tracer studies to provide up-to-date insights. Moreover, the prevalence of gig economy and non-traditional career paths adds complexity to tracking and evaluating graduate outcomes. Tracer study has evolved significantly, leveraging advancements in data collection and analysis technologies (Basir et al., 2022; Sanip et al., 2021). Contemporary tracer studies employ sophisticated methodologies, such as longitudinal surveys, big data analytics, and machine learning techniques (Haque et al., 2024; Novendra & Harefa, 2022; A. B. N. R. Putra et al., 2021) . These methodologies not only enhance the accuracy of the data but also provide a more subtle understanding of the relationship between educational training and career outcomes.

This review aims to comprehensively review recent publications in tracer study at TEIs. Three research questions were formulated using the PICO framework. PICO is a specialized framework used by researchers to formulate research questions and facilitate review (Lockwood C et al., 2015). PICO focuses on three essential components namely *Population* (group being studied); *Interest* (issue under investigation); and *Context* (environment in which the research occurs). The questions are as follows:

RQ1 How do employability-focused programs and interventions impact the employment outcomes of graduates across different fields and regions?
RQ2 What are the impacts of data-driven techniques on the accuracy and usability of graduate employability predictions?

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RQ3 How do competency-based educational programs influence graduates' job performance and employability in comparison to traditional curricula?

Literature Review

Tracer study plays an essential role in TEIs by providing critical insights into the employability and career paths of graduates. It is commonly used to assess the effectiveness of curricular programs, offer feedback on graduate skill sets, and helping TEIs refine academic programs to match the labour market. The relevance of tracer study extends beyond employability to evaluating how educational programs influence professional development and personal growth.

One area of research found in literature is the development of soft skills alongside technical competencies. Basir et al. (2022) revealed that despite the high percentage of employability (85.5%), soft skills such as communication and teamwork were major determining factors. The importance of integrating soft skills into academic curricula was also echoed by Geletu & Adige (2023), arguing the nexus between teaching and employability remained inadequately addressed, particularly the development of soft skills necessary for the modern job market. Soft skills highlighted in literature include critical thinking, communication, problem-solving (Albay et al., 2024; Bual & Bual, 2024); technological, pedagogical (Alda et al., 2025); and professional and personal development (Garcia et al., 2024).

Another area of interest is the importance of interdisciplinary approaches, as seen in Nevhudoli & Netshandamaa (2023) where shortcomings in its Bachelor of Indigenous Knowledge Systems program was identified. This mirrors the concerns raised in other studies, such as in Seyoum et al. (2024), which emphasized the importance of continuously updating academic curricula to improve graduate employability. Dzomeku et al. (2024) conducted a cross-sectional survey on nursing graduates in Ghana and Ssekamatte et al. (2022) analysed the employment outcomes of alumni from the Africa One Health University Network in Uganda. They highlight the relevance of interdisciplinary training especially in non-traditional fields of study.

Studies on the use of machine learning for employability prediction is an emerging area of interest, especially in assessing factors affecting graduate success in the job market. Haque et al. (2024) utilized various machine learning algorithms to predict graduate employability. Their study shows that demographic factors, academic performance, and student satisfaction with university services are significant predictors of employability. Similarly, Abdulloh et al. (2022) applied machine learning models to assess graduate employability, revealing that advanced algorithms such as SVM can significantly improve the accuracy of employability prediction. Both studies contribute valuable insights into how TEIs can leverage data to predict employment outcomes and highlight a broader trend toward integrating technology and data analytics into education assessments.

A similar research area is the integration of digital transformation into TEIs curricula. As noted by Rasli et al. (2024), the COVID-19 pandemic prompted a reconsideration of educational systems, emphasizing the importance of resilience, agility, and digital competencies for long-term sustainability. Their call for tracer study to assess the impact of digitalization on graduate employability highlights a critical area for future research. They suggest the need to adapt curricula to incorporate digital skills and online learning tools to remain relevant in the digital

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world. In addition, findings from Buhomoli & Muneja (2023) on open data readiness among Tanzanian universities further underscore the importance of digital literacy and infrastructure.

Despite the valuable insights offered by tracer study, several gaps remain. First, many studies, including Bual & Bual (2024) and Tibaijuka et al. (2024), focus primarily on technical competencies and employment rates, leaving long-term career satisfaction and professional progression underexplored. Next, most tracer studies rely on self-reported data, which may introduce biases or inaccuracies in responses. Further research utilizing a combination of qualitative and quantitative methods, as suggested by Buhomoli & Muneja (2023), could offer insights into the factors that contribute to graduate success. Additionally, gender representation and access to entrepreneurial opportunities. Seyoum et al. (2024) stressed the need for increased gender diversity in academic programs, calling for initiatives to promote greater representation of female graduates. This finding parallels the observation by Alvarez & Cammayo (2023), who emphasized the role of entrepreneurial education in shaping graduates' career outcomes.

In summary, the literature on tracer study highlights several key trends and challenges for TEIs. A recurring theme is the need for continuous curriculum updates to ensure that academic programs remain relevant to the job market. Additionally, interdisciplinary approaches and entrepreneurial training are essential for improving employability outcomes. Furthermore, the integration of data-driven approaches, such as machine learning, offers new possibilities for predicting and enhancing graduate success. However, gender diversity and equitable access to entrepreneurial resources continue to be areas in need of improvement. Future research should focus on addressing these gaps while further exploring how technological advancements can improve the effectiveness of tracer studies.

Materials and Methods

This review adopts the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) (Page et al., 2022). PRISMA is widely used for enhancing the quality of systematic reviews and entails four processes: *Identification*, *Screening*, *Eligibility*, and *Inclusion* (Figure 1). In *Identification*, articles relevant to the research questions are identified using pre-defined search strings from selected databases. During the *Screening* phase, records are assessed against a specific set of criteria to exclude irrelevant records. In *Eligibility*, the title, abstract and full text are examined to ensure conformity to the inclusion criteria. This involves, among other things, evaluation of the scope, field of study and relevancy to the research questions. The final process, *Inclusion*, involves extracting relevant data from the records including study characteristics, approaches, outcomes, and other relevant details.

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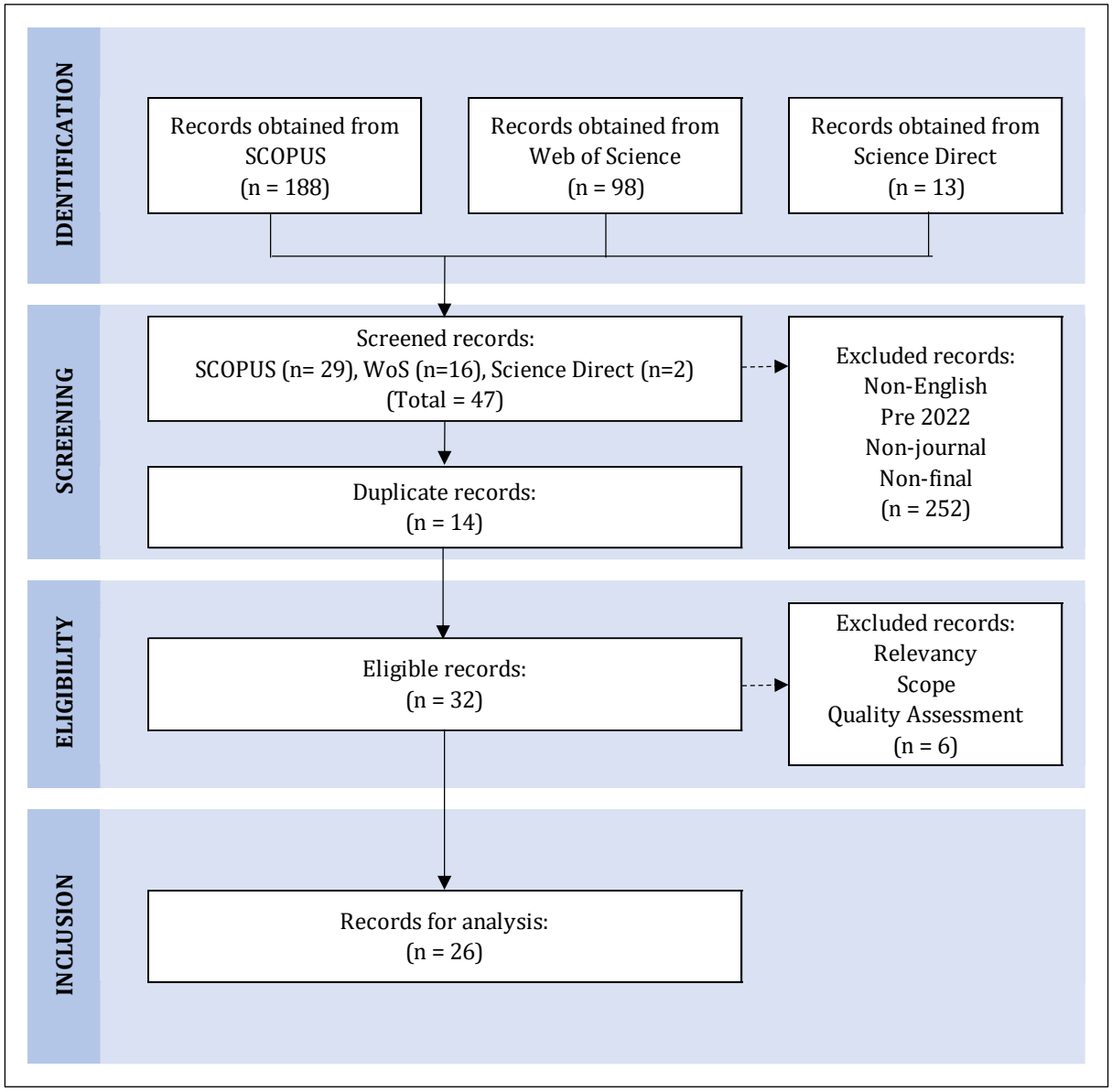

Figure 1: Flow Chart of the PRISMA Process

Identification

The process began with the selection of keywords and related terms from previous studies. Once the terms were identified, search strings for the SCOPUS, Web of Science and Science Direct databases were formulated (Table 1). These databases were selected due to their comprehensiveness and multi-disciplinary research materials (Qiu et al., 2022, 2023; Ullah et al., 2023). Scopus is one of the largest abstract and citation database of peer-reviewed literature, in a broad range of disciplines, including science, technology, and social sciences. Web of Science (WoS) is a leading research database known for its high-quality and curated index of scholarly content. It is particularly useful for accessing citation networks and performing bibliometric analysis, making it easier to track research impact over time. ScienceDirect is a web-based bibliographic database, with more than 4,000 academic journals and 30,000 e-books. Combined, these platforms offer a robust foundation for conducting a systematic literature review that is both comprehensive and well-rounded for tracer study. The *Identification* phase returned 299 records for further examination.

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Table 1: Search Strings

Scopus	TITLE-ABS-KEY (("tracer stud* ") AND (universit* OR "higher education")) AND PUBYEAR > 2021 AND PUBYEAR < 2026 AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2023) OR LIMIT-TO (PUBYEAR , 224))
WoS	("TRACER STUD*") (Topic) and (UNIVERSIT* OR "HIGHER EDUCATION") (Topic) and 2024 or 2023 or 2022 (Publication Years) and Article (Document Types) and English (Languages)
Science Direct	("tracer study") AND ("university" OR "higher learning") Filters Applied: 2020 – 2024

Screening

Records were then evaluated to ensure relevance to the research questions in the screening process. The inclusion and exclusion criteria are designed to:

- Ensure consistency by ensuring that only studies that meet certain standards are included thus minimizing bias.
- Enhance relevance by ensuring only studies that directly contribute to the research questions are selected.
- Increase transparency by clearly defining the criteria in advance making the process of study selection transparent, reproducible, and justifiable to others.

A total of 252 records were excluded based on the inclusion and exclusion criteria in Table 2. Non-English publications; publications prior to 2022; reviews, books, book chapters, conference proceedings; and in press articles were excluded. Nineteen identical records were also removed, leaving 32 records for further examination.

Table 2: Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2022 – 2024	< 2022
Literature type	Journal	Conference, Book, Review
Publication Stage	Final	In Press

Eligibility

A total of 32 records were examined in this process. The titles, abstracts and contents were thoroughly inspected to ensure relevancy to the research questions. Kitchenham (2007) recommended that the quality of the records should be assessed quantitively, and thus the quality assessment proposed by Abouzahra et al. (2020) was adopted in this review. The assessment was carried out by three experts, who score each record between 0 to 1. Scores from all experts were then added for an overall score. For a record to be accepted, the overall

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score must be 3. This threshold ensures that only records of a certain standard are analysed. A total of 6 articles were excluded in this process leaving 26 records for analysis.

Inclusion

An integrative analysis was employed to examine and synthesize research designs. The authors evaluated 26 final records related to tracer study at TEIs. The methodology used in the studies, as well as the results, were investigated. The authors then collectively developed themes based on the analysis. A log was kept throughout the process to record the analysis, viewpoints, and interpretations of the record being analysed. Alternating views with regards to the themes were resolved through discussions amongst the authors. In addition, the themes were tweaked to ensure consistency. Domain validity was upheld though expert review involving three experts: two specializing in tracer studies and one in computing.

Results and Finding

A total of 26 articles was analysed in this review from the Philippines (6 articles); Malaysia (4 articles); Ethiopia, Indonesia and Uganda (3 articles each); Ghana and South Africa (2 articles each); and Bangladesh, Malawi dan Jordan (1 article each) (Figure 2).

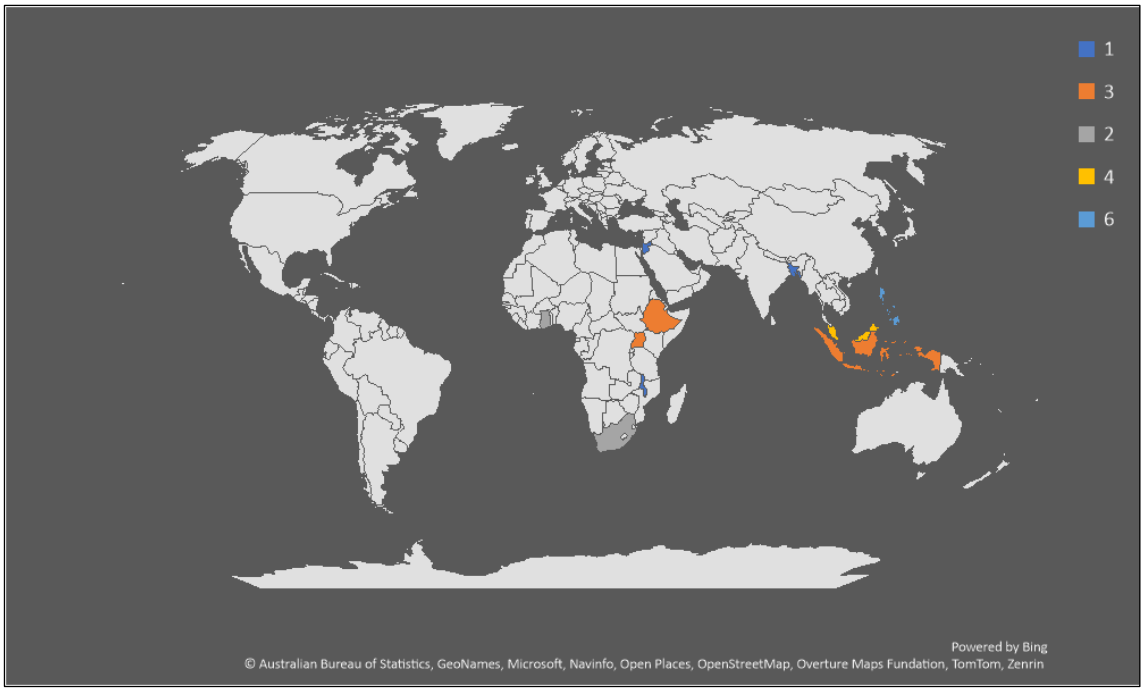

Figure 2: Article Distribution

Nine articles were published in 2022, followed by seven and 10 articles in 2023 and 2024 respectively. As for research design, 11 were qualitative, 10 quantitative and 5 mixed method studies (Figure 3).

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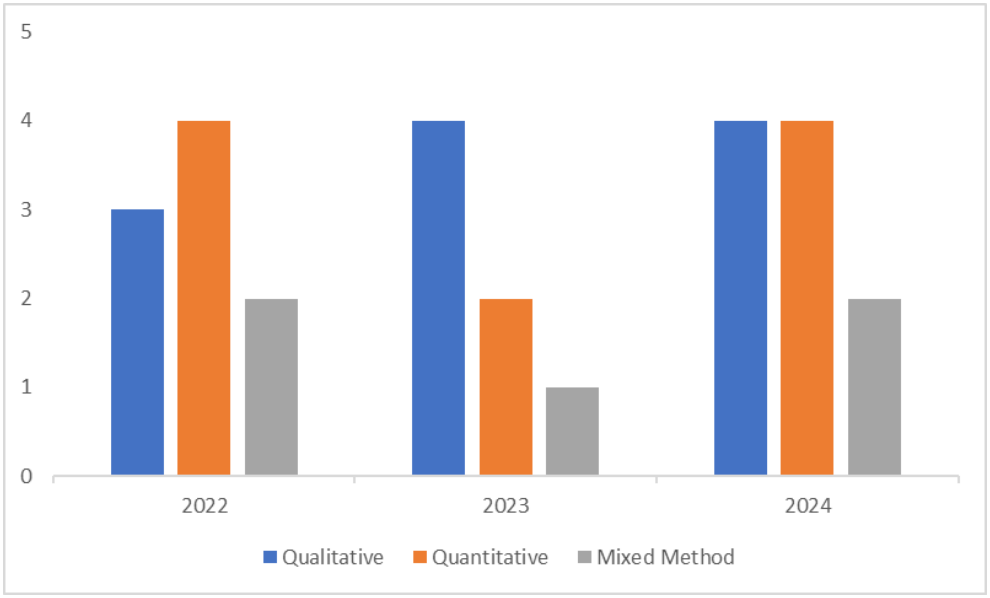

Figure 3: Research Frequency and Approach

Based on thematic analysis, three main themes were identified: *Graduate Employability*, *Technological Innovations*, and *Competency Development* (Table 3).

Table 3: Main Themes

Num	Author	Title	Approach	Theme		
				Graduate Employability	Technological Innovation	Competency Development
1	Abdulloh et al., 2022	Observation of Imbalance Tracer Study Data for Graduates Employability Prediction in Indonesia	Quantitative		√	
2	Abir et al., 2024	Aligning Education with Market Demands: A Case Study of Marketing Graduates from Daffodil International University	Quantitative	√		
3	Albay et al., 2024	Assessing Graduates' Attributes and Job Performance for Program Curriculum Enhancement	Qualitative			√
4	Alkashami et al., 2023	AI Different Approaches and ANFIS Data Mining: A Novel Approach To Predicting Early Employment Readiness in Middle Eastern Nations	Quantitative		√	
5	Alvarez & Cammayo, 2023	A Graduate's Employability Study of Bachelor of Science in Entrepreneurship of Isabela State University, Philippines	Qualitative	√		
6	Andayani et al., 2023	Professional Educator in the Era of Society 5.0: Primary Education Alumni Competence	Qualitative			√

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7	Basir et al., 2023	Determinants of Graduates' Starting Salary Using CHAID Analysis	Quantitative		√	
8	Basir et al., 2022	Soft Skills and Graduate Employability: Evidence from Malaysian Tracer Study	Quantitative		√	
9	Bual & Bual, 2024	Development of Manufacturing Engineering Program of Bulacan State University Using Employability Tracer Study	Qualitative			√
10	Bukari et al., 2024	Employment and Job Creation in the art Sector in Ghana: Evidence from a Tracer Survey of the Higher National Diploma Industrial art	Mixed Method	√		
11	Chima et al., 2023	A Tracer Study of Psychosocial Counselling Graduates Working in Different Healthcare Facilities Across Malawi	Qualitative	√		
12	Diones et al., 2022	The Graduates of CNU's Doctor of Arts in Literature and Communication, and Masters of Arts in Literature: A Tracer Study	Qualitative	√		
13	Dzomeku et al., 2024	Tracer Study to Assess the Employability of Graduates and Quality of a Nursing Program: A Descriptive Cross-Sectional Survey	Quantitative	√		
14	Garcia et al., 2024	Dimensions of Program Relevance Towards Employment Success: Evidence From a Graduate Tracer Study Using Principal Component Analysis	Qualitative			√
15	Geletu & Adige, 2023	Effectiveness of Teaching-Learning, Research and Innovative Actions in Hawassa University, Ethiopia	Mixed Method			√
16	Haque et al., 2024	Classification Techniques Using Machine Learning for Graduate Student Employability Predictions	Quantitative		√	
17	Nevhudoli & Netshandamaa, 2023	What Do Bachelor of Indigenous Knowledge Systems Graduates Say About Their Curriculum? A Qualitative Tracer Study at the University of Venda	Qualitative			√
18	F. K. K. Putra & Utami, 2022	Preferred Competencies for Tourism and Hospitality Graduates: Evidence from Longitudinal Tracer Studies	Mixed Method			√
19	Rijati et al., 2022	A Rule-Generation Model for Class Imbalances to Detect Student Entrepreneurship Based on the Theory of Planned Behavior	Quantitative		√	
20	Senekal & Smith, 2022	Assessing the employability and employment destinations of professional psychology alumni	Qualitative	√		
21	Seyoum et al., 2024	Beyond the Classroom: Following the Destination of Haramaya University Graduates in the Real World, Ethiopia	Quantitative			√
22	Ssekamatte, Isunju, et al., 2022	Using the Kolb's Experiential Learning Cycle to Explore the Extent of Application of One Health Competencies to Solving Global Health Challenges; A Tracer Study Among AFROHUN-Uganda Alumni	Qualitative			√

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23	Ssekamatte et al., 2022	Employment Status of AFROHUN-Uganda One Health Alumni, and Facilitators and Barriers to Application of the One Health Approach: A Tracer Study	Mixed Method	√		
24	Tibaijuka et al., 2024	Impact of the Mbarara University of Science and Technology Residency Training on Increasing Access to Specialty Care Workforce	Mixed Method	√		
25	Tobe, 2022	Tracer Study of Teacher Education Graduates of Northwest Samar State University, Philippines: A Two-Year Analysis	Quantitative	√		
26	Yizengaw & Weidman, 2024	Higher Education, Gender, and Job Opportunities of Engineering Graduates in Ethiopia: An Exploratory Study	Qualitative	√		

Graduate Employability

The relevance of educational curricula to employment success is a recurring theme in tracer study, particularly in assessing how well academic programs prepare graduates for real-world challenges. Findings across various studies reveals that tracer studies effectively track graduate outcomes and identify gap in aligning educational programs with market demands. This involves the role of TEIs in shaping the employability outcomes of their graduates.

Seyoum et al. (2024) discussed how graduates in Ethiopia perceived their academic programs in relation to employment outcomes. With a significant proportion of graduates (78%) securing positions in the public sector, the study highlighted the positive impact of continuous curriculum updates and gender diversity promotion on employability. A study by Dzomeku et al. (2024) on graduates in Ghana emphasized the value of regularly conducting tracer studies to track employability and program quality. Their findings revealed that 92.7% of respondents were employed primarily in the public sector, and rated their educational programs positively.

Another area of interest is the role of tracer studies in evaluating the employability of graduates in specific fields, such as psychology and tourism (Diones et al., 2022; F. K. K. Putra & Utami, 2022; Senekal & Smith, 2022; Tobe, 2022). Senekal found that despite the high employment rate of psychology graduates, their employability remains a complex and non-linear issue. Many graduates work in fields unrelated to their studies due to pragmatic reasons, while entrepreneurial skills were identified as a key gap in their training. They observed that tourism and hospitality graduates highly value fundamental, functional, and professional competencies, all of which are crucial for securing employment in this sector.

The analysis of employment outcomes highlights the need for better alignment between higher education and market demands, as seen in the studies by Abir et al. (2024); Bukari et al. (2024); and Yizengaw & Weidman (2024). Abir identified gaps between the theoretical knowledge imparted through a marketing program and the practical skills required by employers, suggesting the inclusion of comprehensive career preparation in the curriculum. Yizengaw found that engineering graduates, including females, were able to transition into employment successfully, but challenges such as curriculum relevance and skill acquisition remain prevalent. Bukari recommended consulting the Ghana Tertiary Education Council to holistically review the curriculum to make it more relevant to the Ghanaian labour market.

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Ssekamatte et al. (2022) examined the employment status of AFROHUN-Uganda alumni, highlighting that although the majority of alumni secured employment, barriers such as limited funding and inter-disciplinary collaboration still hinder the full application of their training in the workforce.

Technological Innovations

Studies that fall under this theme focus on the impact of data-driven approaches and technological innovations on graduate employability. These studies emphasize the need for integrating technological solutions, such as machine learning models and predictive analysis tools, into the analysis of graduate outcomes and improving graduate employability. TEIs are turning to machine learning models and predictive analysis tools for curriculum development and career readiness.

Abdulloh et al. (2022) discussed the use of machine learning models to evaluate graduate employability in Indonesia. They emphasize the need for reliable systems that can prompt curriculum revisions based on employment trends. Basir et al. (2023) demonstrated how CHAID (*Chi-squared Automatic Interaction Detection*) analysis was used to identify key determinants of graduates' starting salaries. Their study, focused on Malaysian graduates, found that variables such as job sector, English proficiency, and academic performance played pivotal roles in determining salary outcomes.

Haque et al. (2024) employed machine learning techniques such as *Logistic Regression*, *Naïve Bayes*, and *Artificial Neural Networks* (ANN) to predict graduate employability in Malaysia. They found that ANN was the most accurate model, achieving an 80% prediction accuracy. The integration of machine learning into tracer studies allows educational institutions to predict employability outcomes and identify areas where students may need additional support or resources. Rijati et al., (2022) proposed a rule-generation model to classify student entrepreneurship potential based on the Theory of Planned Behaviour. Initial results were promising with high accuracy compared to actual data.

Alkashami et al. (2023) utilized an *Adaptive Neuro-Fuzzy Inference System* (ANFIS) to predict early employment readiness among students in Jordanian universities. Despite the high complexity of the model, the study achieved a notable accuracy of 94%. The findings underscore the significance of employing advanced predictive models in tracer studies, especially in regions experiencing rapid technological and economic development. The use of data mining technologies such as ANFIS helps streamline the decision-making process by identifying relevant employment predictors, thereby enabling more effective student preparation and curriculum adjustments (Alkashami et al., 2023; Basir et al., 2023; Haque et al., 2024).

Competency Development

This theme highlights employment destinations, skills gaps, and competency development of TEIs graduates across different disciplines. These studies collectively underscore the importance of aligning educational programs with industry demands to improve long-term employability. Several studies point to the role of programs in enhancing both personal and professional development. Garcia et al. (2024) highlight the critical role of academic programs in fostering both personal skills, such as critical thinking and problem-solving, and professional competencies, including research and communication skills.

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Chima et al. (2023) found that although a significant percentage of the psychosocial counselling graduates in Malawi found employment, challenges such as limited resources and staffing were highlighted, in addition to program improvements including in Project Management and Monitoring and Evaluation. Geletu & Adige (2023) argued that while research-informed teaching is critical, its application in real-world settings is insufficient, calling for an improvement in pedagogical and technological innovations to bridge this gap. Andayani et al. (2023) investigated the competencies of educators in the era of society 5.0 and suggested that the main skills needed include leadership skills, digital literacy, communication, emotional intelligence, pedagogy, global citizenship, team working, and problem-solving.

Basir et al. (2022) stressed the importance of soft skills in employability, which is increasingly relevant in the job market. They indicated that soft skills such as communication, teamwork, and problem-solving significantly influence employability. Similarly, Bual & Bual (2024) highlighted the importance of critical thinking and communication skills among graduates in the Philippines, reinforcing the idea that soft skills are key in improving graduate outcomes across various industries. Garcia et al. (2024) identified several dimensions of curricular relevance, including exposure to international communities and research capabilities, as key to improving graduates' employability.

Discussion and Conclusion

Discussion in this section will be based on the research questions of this study.

RQ1 How Do Employability-Focused Programs And Interventions Impact The Employment Outcomes Of Graduates Across Different Fields And Regions?

Soft skills, such as communication, teamwork, problem-solving, and critical thinking, are highly valued by employers and can significantly impact graduate employability. TEIs should prioritize the development of these skills through a variety of approaches, including experiential learning, group work, and case studies. These skills are closely linked to professional competencies, which are critical for graduates to be able to apply theoretical knowledge in real-world settings. Future research should focus on identifying effective strategies for integrating competency development into educational programs to better prepare graduates for the challenges of the workforce.

RQ2 What Are The Impacts Of Data-Driven Techniques On The Accuracy And Usability Of Graduate Employability Predictions?

As technology continues to advance, we can expect to see even more sophisticated applications of data-driven approaches in tracer study. Technological advancements have transformed the workplace, and it is imperative that graduates are equipped with the necessary digital skills. TEIs should incorporate technology into their curricula to enhance student learning and prepare them for the digital age. The use of machine learning models and predictive analysis tools can provide valuable insights into graduate outcomes, enabling TEIs to make data-driven decisions to improve student preparation and curriculum development. Future research should focus on exploring the potential of these technologies to address emerging challenges in graduate employability, such as the impact of automation and artificial intelligence on the job market.

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RQ3 How Do Competency-Based Educational Programs Influence Graduates' Job Performance And Employability In Comparison To Traditional Curricula?

Competency development is a critical aspect in enhancing the employability of graduates. It is essential for TEIs to continuously adapt their programs to meet industry demands and ensure that graduates are equipped with the necessary skills to succeed in their careers. To enhance employability, it is essential to bridge the gap between academia and industry. This can be achieved through initiatives such as industry partnerships, internships, and work-integrated learning programs. These experiences can provide students with valuable practical skills and insights into industry expectations. Additionally, strong relationships with industry partners can create opportunities for internships, job placements, and collaborative research projects.

By focusing on the development of both technical and soft skills, and by aligning educational programs with industry needs, TEIs can significantly improve graduate employability. Tracer studies play a vital role in identifying gaps in curriculum design and providing valuable insights into the needs of employers. By addressing these challenges, institutions can produce well-rounded graduates who are prepared to succeed in the 21st-century workforce.

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