



## **EXAMINING GRADUATE EMPLOYABILITY OUTCOMES: A GHANAIAAN TECHNICAL UNIVERSITY CASE STUDY**

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### **ABSTRACT**

**Purpose:** The study examines the employability outcomes of Technical University graduates in Ghana, using Accra Technical University as a case study, with emphasis on employment characteristics, alignment of academic training and industry sectors, and labour-market transition dynamics.

**Design/Methodology/Approach:** The study adopted a quantitative cross-sectional survey design. Using a snowball sampling method, data were collected from 1,323 graduates of Accra Technical University via a 32-item structured online questionnaire administered over a three-month period. The data were analysed using descriptive statistical techniques.

**Research Limitation:** The focus on a single institutional case may limit the generalisability of the findings.

**Findings:** The study found that 76.11% of sampled graduates were employed, largely in industries aligned with their academic disciplines. The private sector accounted for the largest share of employment (37.26%). Sectorally, graduates were predominantly engaged in Administrative/Support Services (14.93%), Health Care/Social Assistance (11.55%), and Manufacturing/Engineering (10.42%), while critical sectors such as Extractives, Utilities, and Agriculture collectively absorbed less than 7% of graduates. Over half (54.88%) commenced job searches post-graduation, whereas 23.89% secured first employment more than one year after completing their university studies. Personal and social networks emerged as key facilitators of labour market entry.

**Practical Implication:** The findings provide evidence to inform institutional and industrial stakeholders in advancing sustainable industry-relevant technical higher education in Ghana.

**Social Implication:** The study offers evidence-based insights to support national policy development and implementation aimed at enhancing employability among Ghanaian Technical University graduates.

**Originality / Value:** The study advances scholarship on employability outcomes in developing economies by providing institutional, graduate-reported evidence that integrates education and labour-market dynamics across the Technical University landscape in Ghana.

**Keywords:** *CBT. graduate employability. technical universities. TVET. tracer study*



## INTRODUCTION

In view of the expansion of the Ghanaian economy over the past decade, averaging a 5.7% growth in Gross Domestic Product in 2024 (World Bank, 2025), the need for a critical mass of a technically competent workforce has emerged as a priority across strategic sectors in the country.

Recognising the urgency to bridge the gap between higher educational training and in-demand technical skills, the Government of Ghana (GoG) converted eligible Polytechnics to Technical Universities (TUs) by promulgation of the Technical Universities Act, 2016 (Act 922) (Parliament of Ghana, 2016), as amended. The conversion, informed by governmental insights from the local employment landscape, sought to empower TUs to provide professional-grade technical and vocational training to students.

Considering a national youth unemployment rate of 32% and 22.5% for ages 15–24 and 15–35, respectively, with a labour underutilisation rate of 19.3% in 2024 (Ghana Statistical Service, 2025), implementation of cohesive educational and economic reforms is vital for the sustainability of the labour force and industry. Whereas the unemployment rate measures the proportion of the labour force that is actively seeking, but unable to find employment (Organisation for Economic Co-operation and Development 2015), the underutilisation rate captures the fraction of the workforce that is employed below capacity with reference to their training or education. As such, by offering diverse programmes of study with an emphasis on application across the arts, business, and science-related domains, among others, TUs have been strategically positioned to help curb the high unemployment and underemployment rates among the youth in Ghana.

Mandated under the Act to deliver competency-based and practice-oriented training (Parliament of Ghana, 2016), TUs are charged with developing competitive, non-traditional capacities among students to serve industries with applied skill sets that extend the focal scope of education in non-TUs. In the long term, the educational contributions of TUs and non-TUs will create a complementary marketplace, which expands the scope of job opportunities available to graduates from TUs, non-TUs, and other tertiary institutions.

Notwithstanding the 2016 tertiary landscape reform and subsequent developments in higher education by the GoG, the employability of the Ghanaian University graduate has become a major debate among academic and industry stakeholders. A foremost factor cited by scholars as contributing to graduates' difficulty in gaining employment is the misalignment of their knowledge with employers' skill demands. The observation is corroborated by Adutwum (2023), who attributed Ghana's high youth unemployment to the large number of students being trained for jobs that do not exist. As Minister of Education, he traced the mismatch to the offer of untailed programmes at the local



tertiary institutions, in that most programmes, though accredited, do not contribute to job creation and industrial development. Further, Ajayi (2016) observed that tertiary graduates in Ghana transitioning from school into the labour market face challenges in securing decent jobs.

Despite the difficulties in obtaining reasonably remunerative employment, the preference for white-collar jobs among most graduates contributes to the unemployment toll in Ghana. Thus, the perception that a university qualification, non-degree or degree, necessarily requires one to work in formalised settings is not uncommon among graduates in the country. Meanwhile, evidence from the Institute of Statistical, Social and Economic Research (ISSER) of the University of Ghana has indicated that only 10% of graduates find jobs after their first year of completing school (ISSER, 2017). The ISSER (2017) study also showed that many graduates may require up to 10 years to find employment, as a consequence of a lack of employable skills, a lack of funding for entrepreneurship, graduates' negative attitudes toward job opportunities, and the industry's limited ability to accommodate the large number of graduates. Considering the realities uncovered by the study, the insistent quest for office-based placements as a perceived success marker continues to exacerbate Ghana's national graduate unemployment challenge.

Globally, Technical and Vocational Education and Training (TVET) has significantly contributed to the advancement of many developing and developed economies (Obi & Ojo, 2025). The G20 countries, the Association of Southeast Asian Nations (ASEAN), the Southeast Asian Ministers of Education Organisation (SEAMEO), and multilateral organisations such as OECD and ILO, have prioritised TVET in their respective strategic operations (Paryono, 2017). The prioritisation of TVET in the developmental agendas of ASEAN and SEAMEO reflects a regional appreciation of TVET as a critical tool for addressing socioeconomic issues.

In particular, Pavlova (2014) observed that in the Asia-Pacific region, TVET is considered a vital instrument for driving productivity growth and poverty alleviation. In Africa, TVET is envisioned as an important mechanism for driving growth and employment (International Institute for Educational Planning [IIEP]- United Nations Educational, Scientific and Cultural Organisation [UNESCO], Dakar, n.d.). However, annually, three (3) million formal jobs are created across Africa for 10- 11 million youths that transition into the continental job market (African Union Development Agency [AUDA-NEPAD], 2019). As such, channelling resources into the development of the local technical and vocational landscapes is a socio-economic imperative for African governments, towards achieving a functional integrated TVET framework within the eight (8) Regional Economic Communities (RECs) recognised by the African Union (AU).

As a developing country, Ghana's incorporation of TVET into the educational system is a vital instrument for fostering the country's industrialisation drive. However, over the



years, the TVET sector has stagnated in growth due to its fragmented landscape, characterised by a lack of standardisation, low infrastructure investment, and role duplication among TVET sectoral agencies (Ministry of Education, 2018). Despite the challenges, the sector is projected to record significant long-term gains as the GoG invests substantial financial resources in TVET development (Commission for Technical and Vocational Education Training, 2019; Business & Financial Times, 2022).

Notwithstanding the job prospects and entrepreneurial opportunities accruing from such investments in TVET, many graduates fail to consider the sector as a viable option for earning a livelihood, owing to a persistent public perception of TVET as a pathway for less academically inclined individuals (Obi & Ojo, 2025). Consequently, university graduates in Ghana encounter difficulties in gaining employment due to, but not limited to, a growing mismatch between industrial employer demands and graduate skills supply; a disinclination for informal sectoral engagements, often motivated by a cultural association of university education with formal employment; and the stigmatisation of TVET-based economic offerings despite their inherent opportunities. While the challenges have been widely discussed in academic and policy discourses, there remains limited empirical evidence on the employment outcomes of Technical University graduates in Ghana, particularly from large-scale graduate-reported tracer assessments. Existing studies have mainly adopted conceptual or employer-centred perspectives, with insufficient focus on institution-level analyses of employment characteristics, sectoral alignment with the studies, and transition dynamics among TU graduates. The present study addresses the gap by providing a data-driven institutional case assessment of graduate employability within the Ghanaian Technical University context.

The overarching objective of the research is to investigate the employability outcomes of TU graduates in Ghana, based on a case assessment of Accra Technical University (ATU) in Accra, Ghana. Three particular objectives are considered. First, the study aims to determine the employment status and nature of work affiliations of TU graduates. Second, it seeks to identify the employment sectors of TU graduates and to explore the distribution of faculty concentrations across these sectors as a measure of alignment. Third, the study will assess the commencement of job search, the transition period to first employment, and the most effective job search method among TU graduates. The study is significant in highlighting the current state of employability among TU graduates in Ghana, with relevance for TUs and industry at both national and regional scales.

Fundamentally, the results will enable TUs to realign educational curricula to improve the delivery of competency-based training and support the acquisition of in-demand technical skills. Additionally, GoG policymakers, in consultation with education sector stakeholders, can leverage the findings to develop TVET-oriented policies that enhance graduate employability. At a broader scale, the findings will contribute to the limited body of knowledge on TU graduate employability in Ghana, thereby addressing the dearth of empirical data on graduate outcomes following the conversion of Polytechnics to TUs.



The insights will support future research with positive developmental implications for the youth employment landscape in Africa.

## **LITERATURE REVIEW**

The section synthesises global, theoretical, and empirical literature on graduate employability to establish the conceptual foundation and identify gaps relevant to the Technical University (TU) context in Ghana.

### **Global Employability and Higher Education**

Following the 2007–2009 global economic recession, higher education institutions (HEIs) have come under increased pressure to produce employable graduates (Crayford et al., 2012). However, graduate employability remains a persistent global challenge, with youth unemployment projected at 12.8% for 2024 and 2025 (ILO, 2024). While the rate reflects a recovery from the mass unemployment encountered during the COVID-19 pandemic (ILO, 2021), the rising number of young people who are not in employment, education, or training (NEET), estimated at 261.9 million by 2025, underscores continued systemic barriers to decent work (ILO, 2024).

Previous studies have shown that as unemployment among the highly educated escalates, questions arise about graduates' ability to meet employer and labour market needs (Pereira et al., 2020). While employers increasingly question graduates' suitability, university lecturers argue that employers do not fully appreciate the skills and qualities that graduates present to the workforce (König et al., 2016). Employers generally seek graduates who demonstrate not only technical knowledge and skills, but also employability characteristics (Rynes et al., 2003).

The common assumption that subject knowledge, usually acquired in higher education, is a necessity for employment may not be entirely valid, given several compounding factors in labour markets (Anderson & Tomlinson, 2021). König et al. (2016) noted that employability skills, being essential for demonstrating subject knowledge in the workplace, are seldom adequately developed through higher education (König et al., 2016). Meanwhile, Richens (1999) observed that employers fail to clearly communicate their needs and expectations of prospective graduate hires; even where industry-academia collaborations exist, rigid educational structures frequently obstruct the implementation of necessary systemic reforms.

While higher education systems vary globally based on their institutional foundations, they share a fundamental trajectory: individuals enrol as students and emerge as graduates prepared for post-completion life (Teichler, 2000). In the higher education sector, graduate employability serves as a vital metric in institutional rankings, with high employment rates leveraged to enhance prestige and attract prospective students (Pereira  
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et al., 2020). Tymon (2013) similarly observed that neglecting employability can diminish enrolments and carries significant implications for institutional funding. Consequently, within the specific context of TUs, the focus is more pronounced, as HEIs face surging pressure from students, families, and governments to embed employability as a core component of their institutional mission (Pereira et al., 2020). Against the global and institutional backdrop, conceptualising employability within the academic literature is essential.

### **Conceptualising Graduate Employability**

Classical literature on employability shows that defining the concept in the contemporary academic and corporate environment is more difficult than conceptualised, with a variety of definitions coexisting in current literature (Harvey, 2001; Williams et al., 2016). Many studies adopt an agentic perspective on employability, emphasising individuals' responsibilities for obtaining jobs in the labour market (Delva et al., 2021).

In general, employability characterises an individual's capacity to prospect, obtain, and maintain a sustainable economic engagement, with an ability to attain decent career progression or mobility. Thus, employability involves both thriving and surviving in the labour market (Smith, 2010).

Given that employability is a critical success factor in evolving labour markets, employers increasingly prioritise human capital, specifically education, skills, and experience, when hiring, as such attributes correlate with long-term job security and retention. While Williams et al. (2016) argue that employability is contingent upon shifting economic and geographical contexts, others define it through a more individualistic lens. For instance, Forrier and Sels (2003) conceptualise employability as an individual's inherent potential to navigate both internal and external labour markets.

The description comprises three dimensions: first, the individual actor as the primary entity; second, the market context in which that actor is embedded; and third, the concept of potential encompasses both agency and structure, representing the interaction between an individual's initiative and the surrounding labour market (Forrier et al., 2018). Similarly, Thijssen et al. (2008) viewed employability from three (3) perspectives: societal, referring to employment rates and economic health; organisational, focusing on employees within the company and balance of supply and demand; and individual, concerned with the likelihood of personal acquisition and maintenance of a decent job in the internal or external labour market.

In a saturated graduate labour market where supply outstrips demand, mere possession of skills and qualifications is insufficient. Consequently, employers must identify differentiating factors among similarly qualified candidates to determine successful transitions from higher education into professional roles (McCracken et al., 2016). In relation, Anderson and Tomlinson (2021) have shown that employers attribute



exceptional employability to personal and intangible qualities such as talent, creativity, dynamism, and potential. Additionally, Dacre Pool and Sewell (2007) proposed five components of employability: career development; learning; work and life experience; degree subject knowledge, understanding, and skills; generic skills; and emotional intelligence, under the mnemonic CareerEdge. One's employability can also be influenced by self-confidence, self-esteem, and self-efficacy (Rynes et al., 2003).

Yorke and Knight (2006) emphasised the importance of learning and identified four facets of employability, conceptualised as the USEM model, being an acronym for Understanding, Skilled Practice, Efficacy Beliefs, and Metacognition. However, Cole and Tibby (2013) argued that the proposed USEM model is not easily understood by non-experts. In a seminal review, Hillage and Pollard (1998) identified that most conceptualisations of employability centre on four core dimensions: the ability to secure initial employment; the capacity to maintain and transition between roles within an organisation to meet evolving requirements; agility to obtain new employment as needed; and the overall quality of that work.

Diverse scholarly expositions suggest that employability is a multifaceted and often elusive concept (Cranmer, 2006; Gedye & Beaumont, 2018), with various disciplines offering divergent interpretations and metrics (Vanhercke et al., 2014). Despite the differences, the literature generally agrees that employability involves the capacity to secure work, perform effectively, and maintain mobility. Consequently, a graduate's ability to establish a successful career path depends on tangible evidence of relevant skills, knowledge, and aptitudes (Rizvi et al., 2013). While empirical evidence on how employers recognise and respond to established employability attributes remains scarce (Anderson & Tomlinson, 2021), adaptive training within a holistic tertiary framework is essential for navigating modern labour-market challenges. Given concerns that HEIs are falling short of producing labour-ready graduates (McCowan et al., 2016), Rowe and Zegwaard (2017) suggest that employability must be enhanced through extracurricular avenues or integrated approaches that embed professional competencies directly into the academic curriculum. Although some evidence suggests that students generally focus excessively on theoretical knowledge at the expense of post-graduation career planning (Kinash et al., 2016), Rowe and Zegwaard (2017) further emphasised the importance of early employability skill development and structured experiential sequencing during university education.

### **Theoretical Foundations of Graduate Employability**

Graduate employability is often anchored in Human Capital Theory (HCT) (Becker, 1993), which suggests that educational investment bolsters individual productivity and, by extension, labour market success. Under the HCT lens, TUs are mandated to enhance graduate prospects by aligning technical competencies with industry demands, thereby aligning with the previously introduced USEM (Yorke & Knight, 2006) and CareerEdge



(Dacre Pool & Sewell, 2007) frameworks, both of which conceptualise employability as a multidimensional construct rather than a singular skill set.

The theoretical paradigms collectively emphasise the roles of skill acquisition, personal agency, and contextual labour-market structures in shaping employment outcomes. While the frameworks have been extensively adopted in developed country settings, existing applications seldom examine the functional adaptability of the underlying theories to TU systems in developing economies. Thus, given cross-regional structural labour-market constraints and institutional differences, theoretical constructs originating in developed contexts may not fully capture employability dynamics in developing economies. Consequently, the applicability of prevailing employability theories to the Ghanaian context remains underexplored. The theoretical limitation underscores the need for a comprehensive, context-specific empirical investigation of graduates' employability outcomes within the TU landscape in Ghana.

### **Employability Skills and Curriculum Alignment**

TUs have traditionally prioritised the instruction of hard technical skills. However, as current educational models evolve to emphasise broader employability attributes, such as critical thinking, communication, and lifelong learning, graduates must develop a synergy of both hard and soft skills. As Rao (2014) notes, acquiring such competencies beyond the formal HEI curricula is increasingly crucial for enhancing overall employability. Crosbie (2005) argued that soft and hard skills are equally important for graduate employability.

In fact, studies show that while hard skills often facilitate initial job placement, soft skills are the primary drivers of career advancement and long-term retention (Idrus et al., 2009). However, prior curricular reforms have produced limited success in bolstering graduate employability, largely due to an insufficient focus on the nexus between hard and soft skills (Pereira et al., 2020).

Consequently, HEIs must establish environments that actively facilitate the acquisition of soft skills. As Tymon (2013) emphasises, the shift must also include a clear communication strategy to enable students to recognise the competencies as vital employment prerequisites. Although many HEIs have begun to integrate soft skills into their curricula, the shift is yet to yield a measurable increase in graduate employability. Persistent deficiencies in market-essential skills lead employers to report that graduates remain ill-prepared for the workforce (Tymon, 2013; Pereira et al., 2020). Furthermore, Collet et al. (2015) highlighted a significant expectations gap, finding that the importance employers place on technical management far exceeds the actual proficiency levels demonstrated by graduates. Similarly, Husain et al. (2010) observed that the value assigned to systems and technical skills by employers markedly outweighs the actual proficiency that graduates exhibit. While much of the literature identifies which



employability skills should be integrated into training, a gap remains in the specific mechanisms HEIs use to cultivate essential attributes for labour market entry (Maina et al., 2022; Winful et al., 2022). Nonetheless, there has been a notable increase in initiatives exploring the role that HEIs, including TUs, should play in enhancing graduate employment prospects (Pereira et al., 2020).

### **Technical University Context in Ghana**

Notable rigidities in the Ghanaian educational system inhibit the evolution and response of the sector to global market demands, thereby impeding the development of graduate competencies needed to address complex societal challenges. Consequently, the observed unemployment among graduates of both technical (TUs) and traditional universities is indicative of systemic educational failure (Winful et al., 2022).

Recognising the challenges in career guidance, TVET-based learning, and mentoring, all of which are necessary to equip the youth with essential employment skills, Winful et al. (2022) observed that many programmes in Ghanaian universities have outlived their societal relevance. The dire socio-economic consequences of high graduate unemployment necessitate further research to develop solutions to the myriad national issues.

However, empirical studies on the employability of TVET graduates in the Ghanaian context remain limited. Aboagye and Puoza (2021) studied the employability of mechanical engineering graduates from Sunyani Technical University and reported an average employment rate of 80% for 131 graduates from the 2014-2017 graduation years, alongside transitional unemployment challenges following national service. The findings identified inadequate practical exposure and limited job-seeking skills as key constraints to labour market entry, thereby emphasising the need for stronger industry collaboration and enhanced experiential learning within technical programmes. Similarly, Ababio et al. (2024) conducted a tracer study at Kumasi Technical University to assess the employment status and factors influencing TVET graduates' employability, revealing that 69.5% of 374 TVET graduates from 2015-2021 had secured employment.

Highlighting the importance of sectoral employment patterns and private-sector absorption, the study provides localised evidence that supports broader discussions on graduate employability and the alignment of TVET programmes with labour-market needs. While Ababio et al. (2024) provide evidence from five TVET programmes and Aboagye and Puoza (2021) offer insights into mechanical engineering, research on TU graduates' employability is largely constrained in scope and scale. Crucially, existing literature lacks a comprehensive assessment that integrates multiple employability dimensions within a single institutional context.



Despite the rapid expansion of tertiary education in Ghana, concerns persist regarding the capacity of higher education institutions to equip graduates with relevant skills and work experience (Damoah et al., 2021). Addressing graduate employability has therefore become an increasing priority for HEIs (Succi & Canovi, 2020; Winful et al., 2022) in alignment with broader discourse on human resource capitalisation, where graduates are increasingly viewed as the primary drivers of organisational innovation and competitive advantage. The present study responds to the theoretical and contextual gaps by providing institution-level and graduate-reported empirical evidence, which contributes context-specific insights to the limited Ghanaian literature, while offering actionable data-driven perspectives for TU governing councils, industry stakeholders, and GoG policymakers to advance quality technical education under the framework of Sustainable Development Goal 4 (United Nations, n.d.).

## **METHODOLOGY**

The study employed a quantitative cross-sectional survey design, underpinned by a positivist research philosophy, which presupposes that employability outcomes can be objectively measured and empirically analysed. The design was considered appropriate for examining patterns of employment status, sectoral distribution, and job search experiences among a sample of TU graduates within the period of study.

### **Institutional Case**

The study was conducted among graduates of Accra Technical University (ATU) in Accra, Ghana. As the sole public TU located in the capital city, ATU attracts a diverse student body from across the country, increasingly driven by inter-regional mobility for urban-centred higher education. The institution is organised into five faculties, which collectively oversee 16 academic departments, each offering a range of programmes leading to the award of Certificate, Diploma, Higher National Diploma (HND), Bachelor of Technology (BTech), Master of Technology (MTech), and Master of Science (MSc) qualifications.

In line with its statutory mandate under the Act (Parliament of Ghana, 2016) to provide higher education in engineering; science and technology-based disciplines; technical and vocational education and training; applied arts and related disciplines, the development and operationalisation of postgraduate training and research programmes, including Doctor of Technology (DTech), formed a core component of the 5-year (2021-2025) ATU Strategic Plan (ATU, 2021). Building on the milestones, the university has initiated the development of its successor 5-year framework, the 2026–2030 Strategic Plan, which aims to institutionalise global excellence and industry-driven innovation to enhance graduate competitiveness in the contemporary workforce (ATU, 2026).



The evolving strategic trajectory of ATU reinforces its vision to be the preferred Technical University in West Africa for industry impact, emerging technologies, and sustainability, and its mission to advance technical knowledge by creating a conducive environment for applied research, quality teaching and competency-based training, with high impact on industry and business creation (ATU, n.d.). Given its diverse student population, broad programme offerings, and strategic focus on industry-relevant technical education, ATU serves as an appropriate institutional case for examining graduate employability outcomes.

### **Study Population and Sampling**

The study population consisted of 21,750 alumni who graduated during the 2010–2019 period, thereby ensuring a comprehensive examination of employability outcomes over a decade of the institution's growth. A graduate was defined as an individual who had fulfilled the academic requirements of a programme of study and obtained a Certificate, Diploma, or Degree from ATU or its former institution, Accra Polytechnic. Individuals who completed more than one programme during the reference period were equally eligible for inclusion.

The sampling frame encompassed graduates from 16 academic departments organised under five faculties: Applied Arts (Hotel, Catering, and Institutional Management, Liberal Studies and Communications Technology, Fashion Design and Textile); Applied Sciences (Applied Mathematics and Statistics, Computer Science, Medical Laboratory Technology, Science Laboratory Technology); Built Environment (Building Technology, Interior Design and Upholstery Technology); Business (Accountancy and Finance, Management and Public Administration, Marketing, Procurement and Supply Chain Management); and Engineering (Civil Engineering, Electrical/Electronic Engineering, Mechanical Engineering).

To maximise respondent participation beyond the curated database, a snowball sampling approach was employed. The method used existing respondents as a referral source to identify and recruit secondary and subsequent participants for a study. Under the non-probability scheme, initially contacted graduates were requested to share the invitation to participate (ITP) with former ATU colleagues. In addition, the survey instrument included optional fields allowing respondents to nominate other alumni within their professional or social networks. The recruitment process proceeded iteratively until the survey closed. A total of 1,323 valid responses from eligible graduates were collected and analysed.

### **Survey Instrument and Validation**

A 32-item structured online questionnaire was developed and administered within the ATU graduate sampling frame. The survey questions were organised under five thematic



sections: General Information, Industrial Attachment, Education and Work, Programme Review, and Alumni Relations. The instrument comprised nominal and ordinal items, including Likert-scale measures assessing employment characteristics, job search and transition dynamics, and the perceived relevance of acquired competencies. The present study draws specifically on responses from the Education and Work section, as it most directly addresses the reference objectives. Following a pilot test involving 187 respondents, revisions were made to enhance the instrument's structural and content validity before full-scale deployment within the wider sampling frame.

### **Data Collection and Analysis**

Initial contact details of the graduate pool were sourced from the Admissions Office, Alumni Office, and Academic Departments of ATU. The contact data comprised email addresses and mobile phone numbers across multiple graduate cohorts and were obtained in fragmented electronic and manual formats from the respective sources.

Prior to administration, preprocessing procedures, including data cleaning, migration, and consolidation, were undertaken. Invalid or incomplete contact records were removed, manually formatted data were digitised, and all records were merged into a unified electronic database.

Eligible graduates were contacted through two complementary outreach streams comprising a written and oral invitation to participate (ITP). The ITP included a Uniform Resource Locator (URL) directing recipients to the survey instrument. In the first phase, invitations were sent via email and text to contacts in the curated database. In the second phase, follow-up telephone calls were made to explain the study objectives and emphasise the value of alumni participation. The dual-channel engagement strategy was adopted to enhance response rates and improve data completeness.

Data collection was conducted over a three-month period, allowing adequate time for contact verification, iterative snowball recruitment, and follow-up engagement to maximise alumni participation. Data from the online survey were screened for completeness, consistency, and eligibility, and invalid, duplicate, or ineligible responses were removed.

Given the descriptive and exploratory nature of the study, data were analysed using descriptive statistical techniques. Frequencies, percentages, and cross-tabulations were computed to summarise demographic characteristics and examine employment status, sectoral distribution, faculty–sector alignment, job search timing, transition duration, and modes of job attainment. Descriptive analysis was considered appropriate for capturing observable patterns in employability outcomes within the sampled cohort, without extending to causal inference. The findings are presented using tables and figures to enhance clarity and facilitate interpretation in relation to the study objectives.



## **Ethical Considerations**

Ethical approval was granted by ATU in alignment with institutional protocols for research involving human participants. Prospective respondents were provided with a brief Informed Consent document for the study, outlining the purpose, scope, and intended use of the data. Participation was strictly voluntary, and individuals retained the right to opt in or withdraw at any stage without consequence. To ensure data transparency, participants could request an electronic copy of their individual submissions. Data integrity and confidentiality were prioritised throughout the study as contact details and responses were stored on secure systems accessible only to the research team. Finally, results are reported in aggregate form, ensuring that no individual respondent can be identified, thereby preserving total anonymity in the dissemination of findings.

## **RESULTS AND DISCUSSION**

The section presents and discusses the study's empirical findings, based on responses from graduates of ATU across five faculties. While the overall analytical sample consists of 1,323 valid responses, slight variations in response counts are observed in subsequent subsections due to the conditional nature of particular survey questions, which applied only to specific categories of respondents. The findings are organised into thematic subsections, beginning with the demographic characteristics of respondents, followed by analyses of employment status, sectoral distribution, job search behaviour, and related employability outcomes.

### **Demographic Characteristics of Respondents**

Table 1 presents the demographic profile of the respondents. The descriptive statistics summarise the distribution of graduates across gender, faculty, mode of entry, session of study, and qualification obtained. The characteristics provide contextual grounding for the interpretation of employment and transition outcomes reported in subsequent subsections.



*Table 1: Demographic Characteristics of Respondents (n = 1,323)*

<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	937	70.80
Female	386	29.20
<b>Faculty</b>		
Business	583	44.07
Applied Sciences	330	24.94
Engineering	227	17.16
Built Environment	94	7.11
Applied Arts	89	6.73
<b>Mode of Entry</b>		
SSSCE/WASSCE	918	69.40
Mature	183	13.80
Technical/Vocational	156	11.80
Others	66	5.00
<b>Session of Study</b>		
Full Time	972	73.50
Part Time	344	26.00
Weekend	7	0.50
<b>Qualification Obtained</b>		
HND	1098	83.00
BTech	188	14.20
Certificate	37	2.80

*Source: Field Data, Accra Technical University (2021).*

The gender distribution indicates a male predominance (70.8%) relative to females (29.2%). The phenomenon likely reflects programme composition within the institution over the 10-year period, particularly the concentration of students in traditionally male-dominated disciplines within the faculties. The Faculty of Business (FOB) constitutes the



largest share of respondents (44.07%), followed by the Faculty of Applied Sciences (FOAS) (24.94%) and the Faculty of Engineering (FOE) (17.16%).

The relatively high proportion from business-related programmes suggests that employment outcomes may be influenced not only by technical fields but also by business-oriented training. Faculties such as FOAA (6.73%) and FOBE (7.11%) are comparatively less represented, which may affect the visibility of discipline-specific employment patterns. The majority of graduates entered through the SSSCE/WASSCE route (69.40%), indicating a principally traditional academic progression pathway. However, the presence of mature (13.80%) and technical/vocational (11.80%) entrants reflects institutional inclusivity and alternative access pathways, which may correlate with differences in prior work experience and employment readiness.

The study shows that most respondents were full-time students (73.50%), with a substantial minority enrolled in part-time programmes (26.00%). The limited representation of weekend students (0.50%) suggests that the sample largely reflects conventional academic engagement structures, which may influence post-graduation job search dynamics.

The qualification profile is markedly concentrated in Higher National Diploma (HND) holders (83.00%), with fewer BTech graduates (14.20%) and minimal certificate-level representation (2.80%). The dominance of HND qualifications is particularly significant for interpreting employability outcomes, as labour market positioning and wage trajectories may differ across qualification levels. The demographic composition indicates an overall predominantly male, full-time, HND-qualified graduate cohort, with strong representation from business and applied sciences disciplines.

### Status and Nature of Employment

Figure 1 summarises the distribution of the 1323 TU graduates based on the status of employment and the nature of organisational affiliations considered for the study.

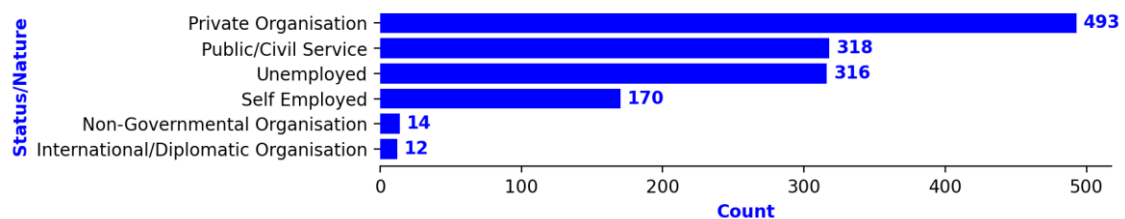


Figure 1: Status and Nature of Employment.

Figure 1 shows that 316 individuals, representing 23.89% of the sample, were unemployed, indicating the challenge faced by a considerable portion of the graduate population in finding suitable employment. The near-quarter unemployment rate



underscores the need for targeted efforts to address joblessness and create sustainable employment avenues in Ghana.

In effect, 1007 respondents, representing 76.11% of the sample, were employed across five (5) organisational categories. First, 493 individuals, accounting for 37.26% of the sample, were engaged in Private Organisations, thereby emphasising the substantial role of the private sector in generating employment opportunities and driving economic activity. Second, 318 individuals, representing 24.04% of the sample, were employed in Public/Civil Service organisations, highlighting the significance of government institutions and the public sector in creating jobs and providing economic engagement for society. Third, 170 individuals, corresponding to 12.85% of the sample, were self-employed, demonstrating a strong inclination towards independent work and entrepreneurship, thereby contributing to economic growth by fostering innovation. In contrast, the data reveals a smaller representation in Non-Governmental Organisations (NGOs) and International/Diplomatic Organisations (IDOs).

In particular, 14 (1.06%) respondents were engaged in NGOs, while 12 (0.91%) were affiliated with IDOs. Thus, both sectors demonstrated a relatively limited presence in the overall employment landscape. The relatively high employment rate among TU graduates aligns with the expectation of Human Capital Theory, which asserts that investments in education enhance labour market outcomes.

The predominance of private-sector employment is consistent with findings in developing economies, where private enterprises constitute the primary absorbers of graduate labour (Hoedoafia, 2019). However, the near-quarter unemployment rate reflects concerns raised by Winful et al. (2022) regarding persistent structural challenges within Ghana's higher education system and labour market. The issue suggests that while TU training contributes to employability, broader macroeconomic conditions continue to influence graduate outcomes.

Comparable empirical evidence from Ghana reinforces the observed patterns. Ababio et al. (2024), in a tracer study of TVET graduates from Kumasi Technical University, reported that approximately 69.5% of respondents were employed, with the private sector serving as the primary employer and a notable proportion engaged in self-employment. Similar to the present findings, their study observed that graduates were absorbed across both formal organisational structures and entrepreneurial pathways. The convergence of independent findings suggests that private-sector engagement and self-employment are central features of Technical University graduate employability in Ghana, while structural labour-market conditions continue to shape overall employment absorption.



## Sectors of Employment

Figure 2 presents data on the sectors of TU graduate employment received from 1152 study respondents.

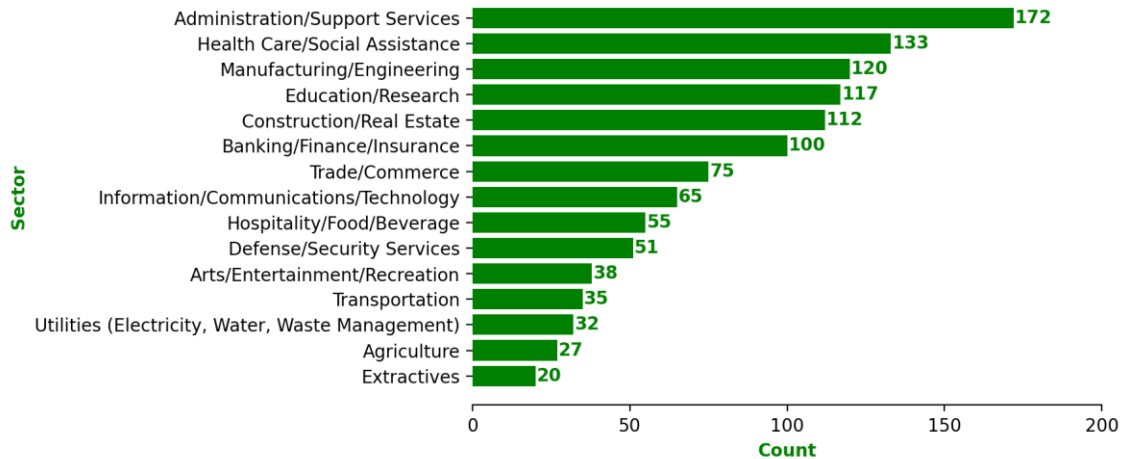


Figure 2: Sectors of Employment.

The figure demonstrates that Administrative/Support Services, accounting for 14.93% (172) of the respondents, was the largest sector of employment of the TU graduates, thereby suggesting a significant demand for administrative and support services in the local labour market. Health Care/Social Assistance represents the second-largest sector, accounting for 11.55% (133) of the employment gained by respondents. The Manufacturing/Engineering sector follows, accounting for 10.42% (120) of respondents, suggesting a high demand for manufacturing and engineering professionals across the economy. On the other hand, the Extractives, Utilities, and Agriculture sectors constitute 1.74% (20), 2.34% (27), and 2.78% (32) of the sample sectors of employment, respectively. The relatively small proportions in such critical sectors, collectively accounting for less than 7% of the respondents, indicate that the sectors may either have limited employment opportunities or that few graduates possess the requisite skills for work in the sectors.

The sectoral distribution broadly aligns with the literature emphasising the alignment between technical education and applied professional fields (Rao, 2014). The relatively low representation in extractives and agriculture, despite their economic importance in Ghana, may reflect structural absorption constraints or skill mismatches, echoing concerns raised by Damoah et al. (2021) regarding gaps between graduate training and labour market demand. The findings reinforce the need for stronger university-industry linkages within strategic growth sectors. The sectoral patterns are broadly consistent with Ababio et al. (2024), who observed that Ghanaian TVET graduates were employed across both TVET-related and non-TVET sectors. Their findings similarly suggest that technical education equips graduates with competencies that allow participation in diverse areas of



the labour market, while sectoral absorption remains influenced by prevailing economic structures and opportunities.

### Sectoral Distribution of Disciplines

The stacked charts in Figures 3a and 3b display the concentrations of the five ATU Faculties in the various sectors of TU graduate employment identified in Section 4.3.

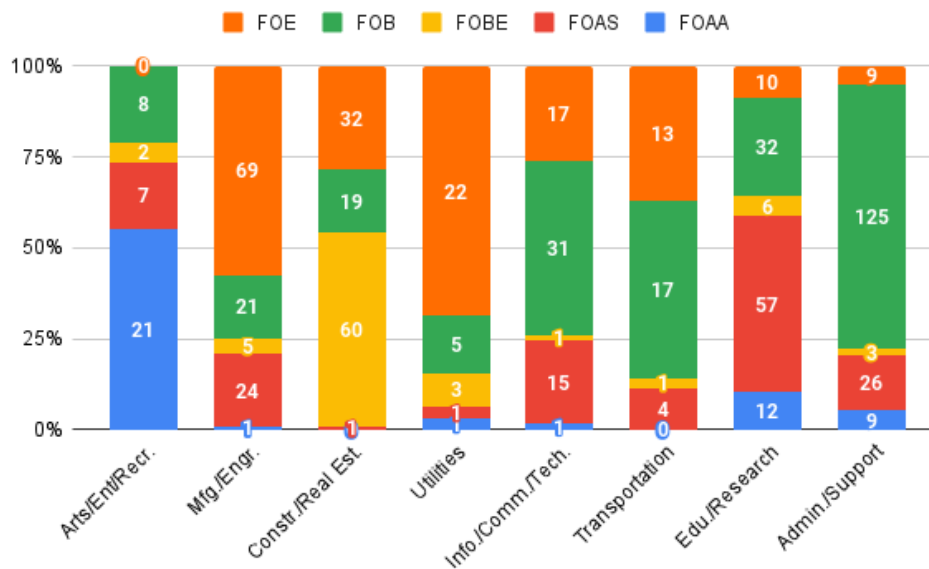


Figure 3a: Distribution of Faculty Concentrations in Sectors.

In Figure 3a, 55.26% (21) of employment in the Arts/Entertainment/Recreation sector was dominated by graduates of the Faculty of Applied Arts (FoAA). Graduates of the Faculty of Engineering (FoE) majorly accounted for 57.50% (69) and 68.75% (22) of TU graduate employees in the Manufacturing/Engineering and Utilities sectors, respectively. While graduates of the Faculty of Built Environment (FOBE) constituted 53.57% (60) of workers in the Construction/Real Estate sector, the Education/Research and Health Care/Social Assistance sectors were respectively dominated by 48.72% (57) and 63.91% (85) of graduates of the Faculty of Applied Sciences (FOAS).

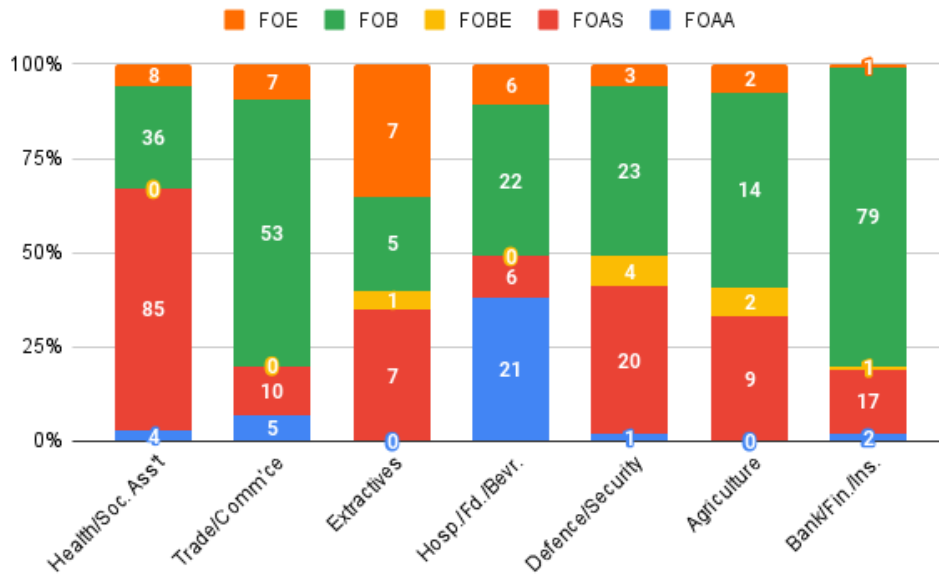


Figure 3b: Distribution of Faculty Concentrations in Sectors.

Further, from Figures 3a and 3b, graduates of the Faculty of Business (FOB) dominated employment in 8 of the 15 sectors identified. On the one hand, FOB graduates accounted for 47.69% (65) of employment in the Information/Communications/Technology sector, 48.57% (35) in the Transportation sector, and 72.67% (125) in the Administrative/Support Services sector. On the other hand, the representations of FOB graduates across the sectors were 70.67% (53) in Trade/Commerce, 40.00% (22) in Hospitality/Food/Beverage, 45.10% (23) in Defence/Security, 51.85% (14) in Agriculture, and 79% (79) in Banking/Finance/Insurance.

The Extractives sector was evenly divided between graduates of FOAS and FOE, each with 35% (7) employment representation. From the count of graduates working in the Hospitality/Food/Beverage sector, near-equal proportions of 40.00% (22) and 38.18% (21) were graduates of FOAA and FOB. Similarly, the concentration of FOB and FOAS graduates in the Defence/Security sector of employment was 45.10% (23) and 39.22% (20), respectively.

Given that the faculties represent broad disciplinary clusters under which the various academic programmes of study can be placed, they provide a suitable proxy for the expectation of industrial destinations of TU graduates. The observed 53.33% (8/15) multi-sectoral predominance of FOB graduates may be attributed to the ubiquitous utility of competencies acquired through Business studies. As a discipline, Business provides training across a wide range of organisational practices, thereby equipping students with in-demand skills that drive optimal corporate operations across sectors.



In general, the data show that employment in the respective sectors was dominated by graduates with closely aligned study backgrounds, as highlighted by the corresponding Faculty concentrations. The alignment between faculty background and sectoral employment supports, among established employability models, the USEM framework (Yorke & Knight, 2006), which emphasises the importance of disciplinary understanding and skilled practice in labour market transition. The extensive sectoral deployment of Business graduates further reflects the broad applicability and high transferability of their skill sets, reinforcing Crosbie's (2005) and Idrus et al.'s (2009) evidence that adaptable and soft competencies are invaluable across diverse organisational contexts.

### Start Time of Job Search

Figure 4 presents the distribution of the 1323 TU graduate respondents across possible starting times for job searches while in ATU.

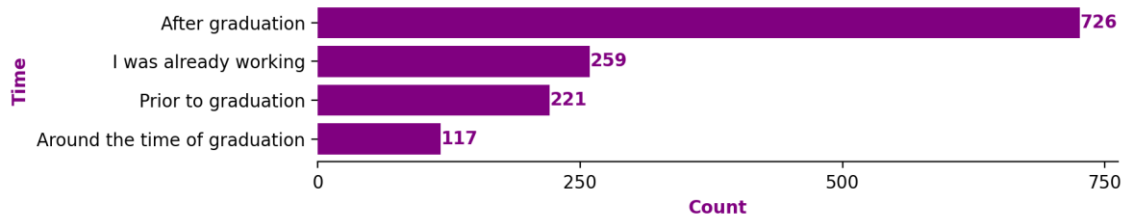


Figure 4: Start Time of Job Search.

In the Figure, the largest group, comprising 54.88% (726) of respondents, began an active job search after graduation. Thus, most individuals began prospecting for job openings after completing their education. Additionally, 16.70% (221) reported that the job search was initiated prior to graduation, suggesting that they were proactively seeking employment during their studies, possibly in the final year, and may have secured a job by the time of graduation, all things equal.

Again, 19.58% (259) of the respondents indicated that they were already working before graduation, suggesting that these individuals may have obtained employment while pursuing their studies or had pre-enrolment work experience that continued during their studies. Also, 8.84% (117) of the sample reported that their job search began around the time of graduation. The group includes individuals who began the job search process either shortly before or after graduation from ATU.

The finding that a majority of graduates initiate a job search after graduation aligns with evidence suggesting that many university students defer structured career planning during their studies (Kinash et al., 2016). The pattern reflects a largely reactive rather than proactive transition strategy, which may delay labour market entry. The result further supports arguments by Rowe and Zegwaard (2017) that early exposure to work-integrated learning and career development activities enhances graduates' preparedness for



employment. The evidence, therefore, underscores the importance of embedding structured career guidance within TU programmes prior to graduation.

### Post-Completion Time Length to First Job

Figure 5 illustrates the possible search timeframes experienced by 1034 respondents before securing their first employment.

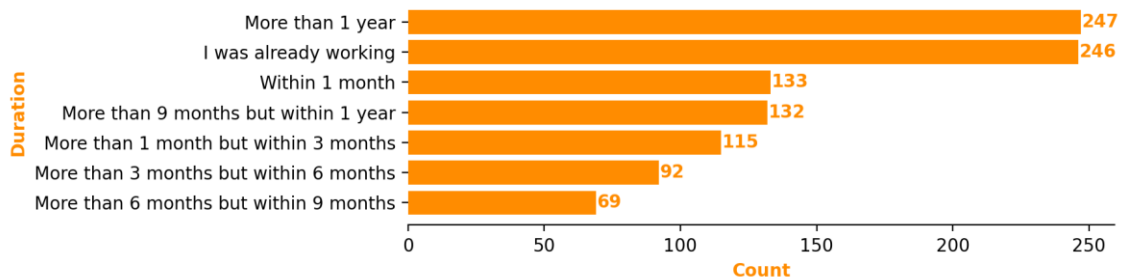


Figure 5: Post-Completion Time Length to First Job.

After graduating from ATU, 23.89% (247) of the respondents required more than 1 year to secure their first job. Relative to the 1-to-4 quarter(s) timeframes, more-than-1 year indicates a longer term of job search by the graduates. The Figure highlights near-equal proportions of TU graduates who secured their first job within 1 year of completion and those who were already working, with the latter accounting for 23.79% (246) of the respondents.

Further, 12.86% (133) of the respondents secured a job within 1 month of graduating, demonstrating a swift transition into the workforce. Meanwhile, 11.12% (115) of the individuals reported securing a job within 1 month of graduation. Another group, constituting 8.90% (92) of the graduates, gained employment within 3 months of graduation, indicating an intermediate timeframe to secure a job. Of the sample, 6.67% (69) reported finding employment within 6 months, while 12.77% (132) secured jobs within 9 months but within 1 year of graduating from ATU.

The proportion of graduates requiring more than one year to secure their first job reflects transition challenges documented in graduate labour markets globally (ILO, 2020). The outcome suggests that while technical education may enhance employability potential, structural labour market constraints continue to shape actual employment absorption. The findings are consistent with Human Capital Theory in that education improves employment prospects, but they also highlight the role of contextual factors beyond individual skill acquisition (Becker, 1993). The variability in transition durations reinforces the multidimensional nature of employability as conceptualised in the USEM framework (Yorke & Knight, 2006).



### Most Successful Method for Finding First Job

Figure 6 presents the methods typically adopted by TU graduates to secure the first job, obtained from 1089 study respondents.

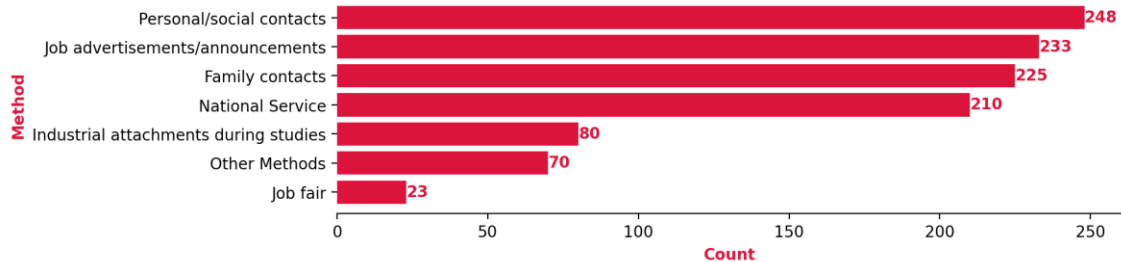


Figure 6: Most Successful Method for Finding First Job.

Among the respondents, 248 individuals (22.77% of the sample) found their first job through personal or social contacts, highlighting the importance of networking and leveraging personal connections in the job search. Similarly, 225 individuals, constituting 20.66% of the sample, relied on family contacts to secure their first job. Thus, familial linkages often play a significant role in job opportunities, as they can provide valuable introductions and recommendations. Also, 21.40% (233) of the respondents found success by actively replying to job advertisements or announcements, which emphasises the importance of staying informed about job openings and actively pursuing relevant opportunities.

Further, 19.28% (210) secured their first job through participation in the National Service Scheme, suggesting that the National Service programme offers a vital platform for graduates to acquire practical skills and connect with potential employers. On the other hand, 7.35% (80) of the TU graduates secured their first job through industrial attachment, highlighting the value of pre-completion hands-on work experience in bridging education and employment. Job fairs proved to be a useful, though marginal, avenue, with 2.11% (23) of the sample successfully finding their first job through them.

Job fairs offer an effective way to explore various job options by providing opportunities for direct interaction with employers. Lastly, 70 individuals, accounting for 6.43% of the sample, reported using other methods to secure their first job. Distinct from the aforementioned traditional methods, alternative approaches include virtual job-agency platforms, working while schooling, submitting unsolicited applications, learning a skill/trade, and self-employment/entrepreneurship.

The prominence of personal and family networks as primary pathways to employment is consistent with labour market dynamics in developing economies, where social capital significantly influences job access (Smith, 2010). The finding also reflects the agency-structure interaction discussed by Forrier and Sels (2003), suggesting that employability



is shaped not only by individual competencies but also by embedded social networks. The comparatively limited role of formal job fairs and structured recruitment mechanisms may indicate labour-market informality in the Ghanaian context.

## CONCLUSION

The study was informed by the prevalence of graduate unemployment in Ghana and sought to examine critical employability outcomes among Technical University (TU) graduates across three complementary dimensions. Drawing on a sample of 1,323 Accra Technical University (ATU) alumni, the study examined the nature of professional integration and work affiliations; the sectoral distribution of graduates across the economy; and the temporal transition from graduation to employment. Overall, 76.11% of TU graduates across the respective disciplines were employed, with 37.26% working in Private Organisations, 24.04% in Public/Civil Service, and 12.85% in self-employment.

In addition, Administration/Support Services, Health Care/Social Assistance, and Manufacturing/Engineering, comprising 14.93%, 11.55%, and 10.42% of the employed graduates, respectively, emerged as the top three sectors of employment, while Extractives, Utilities, and Agriculture recorded the least representation. Across the identified sectors, employed TU graduates were engaged in sectors that broadly aligned with their fields of study, with 53.33% of sectors predominated by Business graduates. Also, 54.88% of graduates began searching for employment after graduation, and 23.89% secured a first job more than one year after completing the university.

In securing such engagements, non-familial personal and/or social contacts were mostly instrumental. While the non-probabilistic sampling may limit strict statistical generalisability, the substantial sample provides empirical depth and practically significant insights into the TU alumni professional experience. By capturing multiple cohorts across a ten-year span, the study achieves considerable breadth, reflecting an evolving institutional landscape and offering a robust overview of graduate employability outcomes over a decade.

The findings have important implications for HEIs, policymakers, and industry stakeholders in Ghana. The predominance of private sector employment highlights the crucial role of private enterprises in graduate absorption and underscores the need for stronger university-industry collaboration. The delayed transition to first employment among a substantial proportion of graduates underscores the need to integrate structured career guidance, job search preparation, and work-integrated learning into TU curricula.

Furthermore, reliance on informal personal networks as a major pathway to employment signals labour-market inefficiencies that warrant policy attention to promote transparent,



merit-based recruitment systems. The study contributes to the limited empirical literature on graduate employability in Ghana by providing a large-scale, institution-level quantitative assessment of TU graduates. While prior studies reviewed are considerably programme-specific and TVET-focused, the current research offers graduate-reported evidence on employment characteristics, sectoral alignment, and school-to-work transition dynamics within a holistic TU context. The findings extend the graduate employability discourse to comparable developing economies and provide a data-driven reference for policy formulation and curriculum reform within the TU landscape in Africa.

Synthesising the empirical findings, strategic stakeholder interventions are proposed. The predominance of the private sector among employed TU graduates underscores its vital role as an engine of growth in Ghana. As such, the Government of Ghana (GoG) should implement sustainable fiscal incentives for private organisations to expand their capacity to absorb the increasing supply of TU graduates. Complementing the macro-level support, TUs should encourage student proactivity by positioning the commencement of final-year project work as the official catalyst for students to begin their transition into the job market, thereby narrowing the gap between graduation and employment.

Furthermore, acknowledging the critical role of social capital in graduate employment, TUs should embed mandatory semester-based professional outreach initiatives into the curricula of all academic programmes.

In conjunction, existing industrial attachment frameworks should be rigorously reviewed to ensure that placements provide structured opportunities for students to develop valuable personal and professional networks. Also, self-employment ranks reasonably in the data on status and nature of employment, thus serving as an indicator of entrepreneurial potential among the TU graduates. Hence, to augment the traditional training, TUs should further develop students' value-creation and commercial abilities by equipping them with practical entrepreneurship skills through institutional operationalisation of the Competency-Based Training (CBT) model.

Finally, to complement the foregoing recommendations, future research may investigate employability from an industry perspective. The inquiry would offer critical insights into aligning institutional curricula with evolving market demands, thereby bridging the perceived and actual skill gaps among emerging graduates.

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