

University Graduates and Employment Challenges: Causes, Impacts, and Countermeasures

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Abstract

This review synthesizes theories and evidence on why many university graduates encounter difficult school-to-work transitions, and which responses most effectively improve outcomes. Conceptually, job-market signaling helps explain why degrees increasingly struggle to differentiate candidates in crowded markets: credentials act as imperfect proxies for productivity and can fuel credential inflation without guaranteeing job-ready skills. Empirically, graduate employment difficulties arise from intersecting drivers high expectations, limited practical experience, inadequate career guidance, and rapid digital transformation impelling multi-actor solutions that engage universities, employers, governments, and graduates themselves. The evidence base points to the value of demand-linked, authentic learning: work-integrated learning (WIL) including internships, co-ops, and project-based placements improves job readiness and eases transitions when designed with clear outcomes, supervision, and reflection. The review also documents economic and psychosocial consequences of delayed or poor matches skill atrophy, slower mobility, and “scarring” effects on earnings and stability underscoring the costs of prolonged underemployment. Beyond supply-side reforms, promising policies pair curriculum renewal with demand creation and de-risking measures (sectoral partnerships, apprenticeship systems, targeted training, entrepreneurship supports), alongside robust career services and labor-market information to calibrate expectations and close feedback loops to programs. Overall, the review argues for a systems approach: quality-assured experiential learning, transparent skills signaling (including micro-credentials), and coordinated policy that expands suitable early-career roles. Such architectures not only raise first-job placement and match quality but also build adaptability for repeated transitions as digitalization and AI continue to reshape work

Keywords: Graduate employability, skills mismatch, work-integrated learning, apprenticeships, active labor market policies, digital transformation, labor-market information

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1. Introduction

The transition from university to the workforce is a critical phase in a graduate’s life. Higher education is often perceived as a pathway to economic stability and professional success, yet many universities graduates struggle to secure employment upon completing their studies (C. A. Tomlinson, 2017; M. Tomlinson, 2017). Across the globe, graduate unemployment and

underemployment have become pressing concerns, affecting both developed and developing economies. Economic fluctuations, changes in labor market demand, skill mismatches, and an oversupply of graduates in certain fields contribute to employment difficulties among university graduates (Brown et al., 2022; T. Brown et al., 2020). In many countries, including China, the United States, and several European nations, rising numbers of university graduates have not been met with a proportional increase in job opportunities (Pilz & Li, 2021). Rapid advancements in technology and automation have altered the skills required by employers, often leaving recent graduates unprepared for the evolving job market (McGuinness et al., 2018). Technological shifts have introduced new job categories while rendering certain traditional roles obsolete, thereby increasing competition among job seekers. Furthermore, the COVID-19 pandemic has exacerbated employment difficulties, causing job market contractions, reducing entry-level job opportunities for fresh graduates, and creating a highly volatile employment environment (Canton, 2021; Trebilcock, 2021). The pandemic has also accelerated the digitalization of work, making digital literacy and remote working capabilities essential skills for employability in many sectors. Another significant challenge faced by graduates is the growing expectation of work experience among employers. Many organizations prefer hiring candidates with practical experience, leaving recent graduates at a disadvantage due to their lack of hands-on exposure in professional settings (Jackson & Wilton, 2017a, 2017b). Traditional university curricula often focus heavily on theoretical knowledge rather than practical skills, further widening the gap between graduates and job market expectations. In some cases, internships and apprenticeships provide opportunities for skill development, but these are not always accessible to all students, particularly those from economically disadvantaged backgrounds. Despite significant investments in higher education and various government policies aimed at improving graduate employability, many university graduates remain either unemployed or engaged in jobs that do not match their qualifications (Domagała-Zyśk et al., 2021). This phenomenon, often referred to as underemployment, has both financial and psychological implications for young professionals, leading to job dissatisfaction, lower earnings, and delayed career progression. Graduates who take on jobs unrelated to their fields of study often face challenges in transitioning to their desired careers later, as their skills become less aligned with industry demands over time (Teichler, 2018a). Moreover, socio-economic factors play a role in employment disparities among graduates. Students from well-connected and financially stable families often have better access to networking opportunities, internships, and career guidance, giving them an advantage in securing desirable jobs. Conversely, those from lower-income backgrounds may lack access to these resources, making it more difficult for them to compete in an increasingly competitive labor market (R. Brown et al., 2020). Gender and geographic disparities also contribute to employment challenges among graduates. Women, in particular, may face additional barriers in securing employment due to gender biases in certain industries or societal expectations regarding work-life balance. Similarly, graduates from rural areas often experience difficulties in finding jobs that match their qualifications due to a lack of employment opportunities in their local regions, compelling them to migrate to urban centers, which in turn intensifies competition for jobs (Li & Pilz, 2023; Pilz & Li, 2021). Higher education institutions have a critical role to play in addressing these employment challenges. Universities

need to adapt their curricula to align with industry needs, incorporating practical training, soft skills development, and career counseling into their programs (C. A. Tomlinson, 2017; M. Tomlinson, 2017). The implementation of work-integrated learning (WIL) initiatives, such as internships, cooperative education programs, and project-based learning, can enhance graduates' job readiness and improve their transition into the workforce (Jackson & Wilton, 2017a, 2017b). Policy interventions are also necessary to bridge the gap between higher education and the labor market. Governments and educational institutions should collaborate with industries to design policies that promote skill development, encourage entrepreneurship, and create more job opportunities for young professionals (Gunawan et al., 2021). Additionally, investment in career services within universities, including mentorship programs and job placement assistance, can improve graduates' chances of securing employment aligned with their qualifications and aspirations. This review aims to explore the factors contributing to employment challenges faced by university graduates and propose viable countermeasures to enhance their employability. By analyzing the root causes of graduate unemployment and underemployment, identifying skills gaps, and evaluating existing policies and programs, this research also aims to provide actionable recommendations that can improve employment outcomes for university graduates. In doing so, it contributes to ongoing discussions on the effectiveness of higher education in preparing students for the workforce and highlights the need for systemic reforms to ensure that university graduates are equipped with the skills, knowledge, and experiences required to thrive in a dynamic labor market. The growing issue of graduate unemployment and underemployment presents significant economic, psychological, and social challenges. Many universities graduates struggle to secure jobs that align with their educational qualifications, often settling for positions that do not fully utilize their skills and knowledge (Jackson & Wilton, 2017b). This issue raises concerns about the effectiveness of higher education institutions in preparing students for the labor market. While universities continue to expand enrolment, there is often a mismatch between the skills graduates acquire and the demands of employers (Teichler, 2018b). This research aims to provide a comprehensive key factors contributing to employment difficulties among university graduates and provide evidence-based solutions to address these issues. One of the primary reasons for graduate employment difficulties is the discrepancy between employer expectations and graduate competencies. Employers frequently cite a lack of practical experience, inadequate industry-specific skills, and underdeveloped soft skills as barriers to hiring new graduates (M. Tomlinson, 2017). Rapid technological advancements, economic downturns, and shifts in labor market demands further complicate employment prospects for university graduates (R. Brown et al., 2020). By exploring employer expectations and industry needs, this work will provide insights into how universities can align their curricula with job market demands to enhance graduate employability. Additionally, the socio-economic and psychological effects of unemployment and underemployment on graduates are profound. Unemployed graduates often experience financial instability, delayed career progression, and a decline in mental well-being. Underemployment, where graduates accept positions below their qualifications, can lead to frustration, dissatisfaction, and reduced motivation, impacting their long-term career prospects (Teichler, 2018b). This research will assess existing policies and initiatives aimed at addressing these challenges and

recommend improvements to enhance their effectiveness. To mitigate these challenges, it is essential to explore viable strategies that universities, policymakers, and employers can implement to improve employment outcomes. By aligning university curricula with industry needs, fostering work-integrated learning programs, and equipping graduates with relevant skills, higher education institutions can enhance employability prospects. Additionally, policymakers must introduce targeted interventions that support young professionals in gaining meaningful employment opportunities (Rothwell-Warn, 2024). The study will review the practical solutions that bridge the gap between higher education and labor market demands, ensuring that university graduates are better prepared for their careers. The work holds significant implications for multiple stakeholders, including university graduates, educators, policymakers, and employers. Understanding the causes of graduate unemployment will help shape more effective education and employment policies. For university graduates, this review will provide insights into the evolving job market and highlight strategies to enhance their employability, such as acquiring practical skills, gaining work experience through internships, and developing entrepreneurial mindsets (M. Tomlinson, 2017) . Universities and higher education institutions will benefit by identifying gaps in their curricula and adapting their programs to better prepare students for workforce demands (Teichler, 2018b). For policymakers, the study will contribute to the development of evidence-based policies aimed at reducing graduate unemployment, such as reforming education systems, expanding vocational training, and promoting industry-academia partnerships .

2. Review Search Methodology

In order to obtain a comprehensive understanding of the existing literature, we conducted a search for articles in reputable databases, including IEEE Xplore, Scopus, Web of Science, Google Scholar, and online sources. The search encompassed articles published in the last 15 years. The main criteria used for the search keywords is the inclusion of "University Graduates" or "Employment " as the first criteria, and the inclusion of " impacts " or " countermeasures " as the second criteria. A total of 95 academic papers and publications were identified and included in the research. Duplicate articles or that with little relevance were removed, and the content of the 65 selected articles was synthesized for analysis.

3. Literature Review

3.1 Conceptual and Theoretical Frameworks

Human Capital Theory

Human Capital Theory (HCT) posits those investments in education, training, and skills development increase individuals' productivity and employability, ultimately leading to higher earnings and economic growth (Becker, 1993). The theory suggests that higher education enhances an individual's knowledge and skills, making them more attractive to employers. In the context of graduate employment, HCT explains why graduates with advanced degrees or specialized skills tend to have better job prospects compared to those with general or outdated knowledge. However, critics argue that the theory does not fully account for structural unemployment or mismatches

between graduates' qualifications and labor market demands (Brown et al., 2001). Despite these limitations, HCT remains a fundamental framework for understanding employment challenges and workforce development policies.

Structural Unemployment Theory

Structural Unemployment Theory highlights the long-term mismatch between workers' skills and the requirements of available jobs. This theory argues that unemployment persists when labor market structures evolve faster than workers can adapt, leading to job losses in declining industries and skill shortages in emerging sectors (Faggio & Nickell, 2003). Graduate unemployment can be explained through this lens, as many university graduates may possess academic knowledge that does not align with industry needs. For example, the rapid rise of digital technology and automation has made some traditional jobs obsolete while creating demand for new, specialized roles (Autor, 2015). Structural Unemployment Theory suggests that addressing graduate unemployment requires continuous education reforms and skills adaptation strategies.

Job Market Signaling Theory

Job Market Signaling Theory, introduced by Spence (1978), suggests that employers use educational qualifications as signals to assess job applicants' potential productivity (Spence, 1978). A university degree acts as a signal of intelligence, discipline, and trainability, rather than a direct measure of specific job competencies. However, in highly competitive labor markets, degrees alone may no longer provide strong enough signals, leading to credential inflation, where more advanced degrees are needed to stand out (Collins, 2002). This theory explains why some graduates face difficulties in employment despite holding degrees, emphasizing the need for alternative employability signals such as internships, certifications, and skill-based assessments.

3.2 Related Studies

Graduate employment challenges vary globally due to differences in economic structures, educational systems, and labor market policies. In developed economies, automation and outsourcing have reduced traditional job opportunities, while in developing countries, high population growth and limited job creation exacerbate graduate unemployment (Canton, 2021; Silva, 2022). A comparative analysis of graduate unemployment rates in the United States, Europe, and Asia reveals distinct patterns. In the U.S., skill mismatches and student loan burdens pose major employment challenges (Oreopoulos & Petronijevic, 2013). European nations struggle with youth unemployment due to economic downturns, while in Asia, rapid economic growth has led to overqualification problems where graduates accept jobs below their skill level (Marginson, 2017). These global insights highlight the need for region-specific policy interventions. The employment challenges faced by university graduates are multifaceted, including structural unemployment due to digital transformation (Sheng, 2024), mismatch between skills and job market demands and "slow employment" issues (Qian et al., 2024). Causes include high expectations, insufficient practical experience, and inadequate career guidance (Huang, 2023; Qian et al., 2024). The digital economy presents both opportunities and challenges, requiring graduates

to enhance their digital skills (Qi Sheng, 2024; N. Rizun et al., 2024). In the context of accelerating digitalization, several studies converge on the view that graduate employment challenges stem from intertwined structural and capability factors. (Sheng , 2024) synthesizes literature and conceptual arguments to depict an increasingly severe landscape in which the digital economy both generates new opportunities and heightens selection pressures. From this vantage, the central question is twofold: what problems do graduates face as digital technologies reshape production and services, and what combinations of policy and institutional responses can enable “high-quality employment”? Sheng’s answer foregrounds a whole-of-ecosystem approach: psychological supports for students, quality enhancement in curricula, stronger university–enterprise cooperation, and an employment-first policy posture that coordinates government, universities, firms, and society. China-focused empirical and policy analyses add granularity to these themes. Using questionnaires of fresh graduates, interviews, and quantitative analyses of non-fresh cohorts, (Qian et al., 2024) document supply–demand imbalances alongside expectation mismatches, insufficient guidance, and gendered barriers that complicate re-entry for married non-fresh graduates. Complementing this, (Huang , 2023) examines higher-vocational and university sectors, attributing low placement rates to uneven educational quality, persistent social bias against vocational tracks, weak career planning, and skills misalignment as industries restructure. The proposed remedies—tightening school–enterprise linkages, upgrading guidance and entrepreneurship services, and improving the fit between talent supply and market demand—reinforce Sheng’s ecosystem logic while emphasizing sector-specific levers. Micro-evidence on transition dynamics comes from targeted cohort analyses. Studying 400 undergraduates in computer science and information disciplines at an Anhui university, (Guo et al. ,2024) estimate a “slow employment” share of 15.5% (with 84.5% not slow-to-place), attributing delays to thin entrepreneurship/employment guidance, weak practical training, and cushioning from family resources. Their countermeasures—policy support to stabilize demand, richer market-information platforms, and overhauled guidance systems—illustrate how local institutional fixes can shorten search times even amid macro headwinds. (Sun et al., 2021) broaden the “delayed employment” lens beyond a single faculty, identifying domestic economic pressures, traditional family expectations, limited university guidance, and value deviations as primary drivers; they caution that while short pauses may enable exploration, prolonged delay risks scarring and psychological stress, strengthening the case for practical curricula and university–enterprise collaboration. A complementary stream interrogates entrepreneurship as a safety valve and growth engine. (Qian et al., 2024) survey the status quo of graduate entrepreneurship and employment, noting persistent obstacles—funding gaps, limited entrepreneurial experience, and capability constraints—despite policy support and gradual improvements in industrial and regional employment structures. Earlier policy reviews likewise point to state action as a key mediating force: (Wang et al., 2012) chronicle China’s institutional and national-level innovations that sought to absorb the graduate surge created by higher-education expansion, while (Wei, 2005; Dian , 2014) situate rising graduate unemployment within the broader marketization and decentralization of higher education, where a two-way selection mechanism expanded choice but exposed skill and quality deficits. Exogenous shocks compound these structural frictions. (Wang and Wang, 2024) review COVID-19’s impact

on Chinese graduates, triangulating literature, comparative pre-/post-pandemic indicators, and surveys to show contractions in recruitment demand, intensified competition, channel shifts, heightened anxiety, and deeper structural contradictions. They document a flurry of countermeasures from government and universities yet conclude that implementation gaps remain, implying the need to tune policies toward measurable placement and job-quality outcomes rather than input activity. Beyond China, regional evidence underscores both common mechanisms and context-specific constraints. In Africa, (Mohamedbhai, 2015) attributes graduate unemployment to macro slowdown and misalignment between higher-education outputs and labor-market needs, recommending quality assurance, faculty development, and institutional differentiation, while (Tamrat, 2023) argues Ethiopia's piecemeal initiatives require consolidation into a coherent national employability framework engaging all stakeholders. Country-level studies diagnose proximate barriers: in (Nigeria, Ezeani, 2018; Longe, 2017) identify weak policy investment, limited collaboration between universities and employers, and graduates' skills gaps; (Joshua et al., 2015) propose a multi-sector employment strategy that leverages agriculture, mining, hospitality, vending, and ICT, coupled with retraining and improved social amenities to catalyze absorption. In (Tanzania, Amani, 2017) emphasizes field-of-study mismatches, ineffective guidance, poor communication skills, and weak labor-market information, advocating curricular review and entrepreneurship/communication skill infusion. At the theoretical level, long-run debates persist over whether "skills mismatch" or "skills oversupply" dominates the explanation of graduate unemployment. (Chen and Li, 2004) frame China's graduate underemployment within labor-economics search and unemployment theories, linking outcomes to systemic and historical determinants and warning against attributing the problem solely to rapid enrollment expansion. (Oppong and Sachs, 2015), taking a comparative and conceptual stance, argue that oversupply often outweighs mismatch, cautioning that purely supply-side solutions (upskilling alone) can exacerbate gluts unless complemented by labor-demand stimulation. Against this backdrop, (Bartlett, 2013) advances an employability model—knowledge, skills, and attitude—as a curricular design lens to mitigate structural unemployment, suggesting stakeholder-informed diagnostics of demand, gaps, and perception differences among employers, teachers, and graduates. Taken together, this body of work traces a consistent arc from problem description to multi-actor remedy. Conceptual syntheses (Sheng, 2024; Chu et al., 2019) and policy reviews (Wang et al., 2012) align with empirical cohort and country studies (Qian et al., 2024; Guo et al., 2024; Amani, 2017; Longe, 2017), converging on three design principles: (1) align talent development with evolving sectoral demand through authentic, practical curricula and structured work-based learning; (2) upgrade intermediation—career guidance, labor-market information, and employer engagement—to calibrate expectations and reduce search frictions; and (3) pair supply-side quality reforms with demand-side policies that grow suitable jobs and de-risk early-career hiring. Where shocks like COVID-19 or rapid technological change intensify transition risks, the literature suggests that integrated, quality-assured interventions—rather than isolated measures—are most likely to improve both placement rates and job quality over time.

3.3 Causes of Graduate Employment Difficulties

Mismatch Between Education and Job Market Needs

One of the primary causes of graduate unemployment is the mismatch between what universities teach and what employers demand. Studies indicate that many graduates possess theoretical knowledge but lack practical skills required in the workforce (M. Tomlinson, 2017). A comparison of job market demands vs. graduate qualifications (Table 1) illustrates this mismatch:

Table 1. Mismatch Between Education and Job Market Needs

Sector	Required Skills	Graduate Skill Gaps
IT	Coding, Data Analysis	Limited practical coding experience
Business	Market Analysis, Leadership	Lack of strategic decision-making skills
Engineering	Hands-on Design, Testing	Insufficient exposure to real-world projects

Economic Factors and Labor Market Conditions

Economic downturns, recessions, and global crises significantly impact graduate employment opportunities. For example, the COVID-19 pandemic led to job losses across industries, affecting recent graduates disproportionately (Servais, 2021).

Skill Gaps and Lack of Work Experience

Employers often prioritize candidates with practical experience, yet many graduates enter the job market without sufficient hands-on training. Research indicates that nearly 90% of employers prefer to hire recent college graduates who possess relevant work experience (Oswald-Egg & Renold, 2021). This preference underscores the necessity for universities to enhance work-integrated learning opportunities. Denise Jackson (2019) emphasizes the importance of expanding co-operative education programs, apprenticeships, and project-based coursework to better prepare students for the workforce (Jackson, 2019). By integrating these practical experiences into academic curricula, educational institutions can bridge the gap between theoretical knowledge and real-world application, thereby improving graduate employability.

Influence of Technological Advancements

Technological changes continuously reshape job markets. The automation of routine tasks has eliminated some entry-level jobs while creating demand for roles in AI, cybersecurity, and digital marketing ((Brynjolfsson & McAfee, 2014). Educational institutions must adapt by integrating emerging technologies into curricula and ensuring students acquire digital competencies to remain competitive.

Policy and Institutional Factors

Government policies and institutional frameworks also affect graduate employment rates. Effective labor policies, investment in vocational training, and stronger university-industry linkages can enhance job opportunities for graduates (Rothwell & Arnold, 2021). A policy comparison table (Table 2) outlines key measures from different countries.

Table 2. outlines key measures from different countries

Country	Policy Approach	Impact on Graduate Employment
Germany	Dual Education System	High employment rate post-graduation
USA	STEM Education Investment	Increased tech-sector job absorption
India	Skill Development Initiatives	Improved vocational employment rates

3.4 Impacts of Graduate Unemployment

Economic Implications

Graduate unemployment has profound economic implications, affecting individuals, businesses, and national economies. One of the most immediate consequences is reduced economic growth. When a significant portion of the educated workforce remains unemployed or underemployed, productivity declines, resulting in lower contributions to gross domestic product (GDP) (C. A. Tomlinson, 2017). Economic stagnation can ensue when graduates, who should be driving innovation and consumption, lack financial stability and purchasing power. Additionally, unemployed graduates contribute less to tax revenues, which in turn impacts government resources for public services such as education, healthcare, and infrastructure. Governments may also face increased financial burdens due to higher spending on unemployment benefits and social welfare programs (Brown et al., 2004). The strain on national budgets is particularly pronounced in countries with high youth unemployment rates, as social security systems become unsustainable in the long run. Unemployment among graduates also affects businesses. Employers may experience a paradox where, despite high unemployment rates, they struggle to find candidates with the right skills and experience. This skills mismatch can lead to inefficiencies in industries that require specialized expertise, further slowing economic progress (McGuinness et al., 2018). The overall economy suffers from decreased innovation, as graduates who would otherwise contribute to research, technology, and business development are unable to secure positions where they can apply their knowledge. Furthermore, graduate unemployment affects household income and intergenerational wealth accumulation. Young adults who are unable to find stable employment often rely on financial support from their families, creating economic strain on older generations (Oreopoulos & Dunn, 2013). The inability to gain financial independence delays major life decisions such as homeownership, marriage, and starting a family, which has broader societal consequences.

Psychological and Social Effects on Graduates

The psychological and social effects of graduate unemployment are significant and long-lasting. Joblessness often leads to stress, anxiety, and depression among graduates, particularly when their expectations for a successful career are unmet (R. Brown et al., 2020). The transition from university to the workforce is a critical period for young adults, and prolonged unemployment can result in a sense of failure and hopelessness. Studies have shown that unemployed graduates experience lower levels of self-esteem and self-worth compared to their employed counterparts (Bell & Blanchflower, 2011a, 2011b, 2011c, 2011d). Repeated job rejections and prolonged job searches can diminish confidence, making it even more challenging to secure employment. This can lead to a vicious cycle where job seekers become discouraged and withdraw from the labor market altogether (Blustein et al., 2013). Socially, unemployment can lead to isolation, as graduates may feel ashamed of their situation and avoid social interactions (Paul & Moser, 2009). A lack of employment reduces opportunities for networking and professional development, further diminishing chances of securing a job. In extreme cases, long-term unemployment can contribute to social unrest and increased crime rates, as frustration over economic hardships translates into societal discontent (Canton, 2021). Family dynamics are also affected by graduate unemployment. Parents and caregivers may experience financial stress while supporting unemployed graduates, and tension can arise within households as expectations for independence are delayed. In cultures where employment is strongly tied to identity and status, unemployment can lead to familial and societal pressures that exacerbate emotional distress.

Long-Term Career Development Challenges

The long-term career consequences of graduate unemployment are profound, often affecting professional trajectories for years. Prolonged periods of unemployment or underemployment can lead to skill deterioration, as graduates are unable to apply and refine their knowledge in professional settings (Teichler, 2018a). Without relevant work experience, graduates may struggle to compete with more experienced job seekers, making it increasingly difficult to enter their desired industries. Underemployment where graduates accept jobs below their qualifications—can also hinder career development. While taking any available job may provide temporary financial relief, working in a role unrelated to one's field of study can limit career progression and professional growth (Jackson & Wilton, 2017). Employers may perceive graduates in unrelated roles as lacking commitment to their field, reducing their chances of transitioning to a more suitable position in the future. Another challenge is the “scarring effect” of unemployment, where early career joblessness negatively impacts future earnings and job stability (Oreopoulos et al., 2013). Research indicates that graduates who experience prolonged unemployment often earn lower wages and have less stable career paths compared to those who secure employment soon after graduation (von Wachter, 2020). This long-term disadvantage is particularly evident in fields that prioritize continuous professional development and experience. Moreover, graduates facing employment difficulties may opt to pursue additional education in hopes of improving their job prospects. While further education can enhance skills, it may also lead to increased financial debt

without guaranteeing employment (Tomlinson, 2017). In some cases, graduates accumulate multiple degrees but still struggle to find jobs that match their qualifications, contributing to the growing issue of credential inflation (Collins, 2002).

3.5 Previous Studies on Employment Policies and Strategies

Several studies have examined employment policies and strategies aimed at reducing graduate unemployment. Active labor market policies (ALMPs), such as job training programs, government employment schemes, and university-industry partnerships, have been identified as effective solutions (Skiadas et al., 2021)). These programs equip graduates with practical skills and work experience, making them more competitive in the job market. One successful model is Germany's dual education system, which integrates academic learning with vocational training. Studies have shown that this system leads to high employment rates among graduates, as students gain hands-on experience and industry-specific skills before entering the labor market (Canton, 2021). Similarly, Singapore's Skills Future initiative provides continuous learning opportunities, ensuring that graduates remain adaptable to changing workforce demands (Marginson, 2017). Internship and apprenticeship programs have also been recognized as crucial strategies for bridging the gap between education and employment. Research indicates that graduates who complete internships have significantly higher chances of securing full-time employment compared to those who lack work experience (Jackson, 2019). Universities that incorporate work-integrated learning (WIL) into their curricula produce graduates who are better prepared for industry expectations. Government intervention through job guarantee programs has also been explored in various studies. Countries such as Sweden and Finland have implemented policies where the government ensures that young job seekers receive employment opportunities within a set period after graduation. These programs have shown promising results in reducing youth unemployment rates and facilitating smoother transitions from education to the workforce (Canton, 2021). Entrepreneurship education is another approach that has gained traction in recent years. Research suggests that universities that encourage entrepreneurial thinking and provide startup support programs produce graduates who are more likely to create their own employment opportunities (Rothwell & Arnold, 2021). This shift towards self-employment and business creation has been particularly beneficial in economies with limited job openings.

4. Review Discussion

This review synthesizes 65 studies (from 95 initially identified) across multiple regions and disciplines to explain why many universities graduates struggle to secure appropriate work, how these outcomes affect economies and lives, and which countermeasures are most credible. Three theoretical lenses recur: human capital, structural unemployment, and job-market signaling and, taken together, they describe a system in which education expands faster than relevant demand, technologies restructure task content, and degrees alone no longer function as strong signals of job-ready capability.

Cross-cutting drivers

Across contexts, the most consistent proximate causes are: (a) skills–task mismatches rooted in curricula that lag industry needs; (b) limited authentic experience at graduation (internships,

apprenticeships, supervised projects); (c) information frictions—weak labor-market intelligence and career services; and (d) macro shocks and transformations, notably COVID-19 and rapid digitalization/AI. Studies focused on China additionally document “slow employment” (delayed placement) driven by expectation mismatches, uneven guidance, and social cushioning; African and South Asian evidence emphasizes structural demand constraints and policy fragmentation; OECD systems surface credential inflation and the thinning of entry-level roles as routine work is automated or offshored. These findings align with structural unemployment theory (jobs and required competencies shift faster than providers adapt) while also confirming signaling theory’s warning: credentials without demonstrable practice underperform as hiring filters.

Moderators and inequities

Employment outcomes vary systematically by field of study, socioeconomic status, gender, and geography. Digitally intensive programs exhibit higher absorption where curricula embed practical components; students from well-connected families and urban centers access internships and networks more readily; women face sectoral and cultural barriers in several contexts; rural graduates often migrate to opportunity hubs and confront intensified competition. These moderators are not merely background noise, they change how the same intervention performs, underscoring the need for equity-by-design in policy and program delivery.

Impacts and scarring

The literature converges on significant economic (foregone GDP, productivity losses, underutilized human capital), psychosocial (anxiety, lowered self-efficacy, social withdrawal), and career-development effects (skill atrophy, weaker wage trajectories) of unemployment and underemployment. Early-career shocks exhibit scarring: delayed or poor matches depress earnings and stability for years, with cumulative disadvantages strongest where practical experience is absent and guidance is thin. These downstream costs justify moving beyond graduate-only remedies toward system architectures that re-design transitions.

5. Conclusion

This review underscores that graduate employment challenges are produced by intersecting forces rather than a single deficit. Structural constraints in high-skill job creation, rapid technological change, and information frictions interact with curricular lag and uneven access to practical learning, yielding longer job searches, higher underemployment, and skill–task mismatches. The consequences are cumulative: scarring effects on earnings and mobility for graduates, productivity losses for firms, and underutilized human capital at the macro level. Evidence across contexts points away from piecemeal fixes and toward a systems approach that aligns incentives and quality across actors. Three pillars emerge as most promising. First, demand-linked curricula anchored in authentic assessment—through high-quality work-integrated learning, apprenticeships, capstones,

and micro-credentials—translate learning into demonstrable capability. Second, data-driven intermediation—career services that function as placement engines, real-time labor-market analytics, and transparent program-level outcomes—reduces expectation gaps and feeds continuous curriculum renewal. Third, policy measures that create and de-risk demand—sectoral partnerships, targeted hiring incentives, and entrepreneurship scaffolds—expand suitable early-career roles rather than shifting all responsibility onto graduates and universities. Quality and equity determine impact. Without standards for supervision and assessment, internships risk exploitation; without recognition frameworks, credentials lose signaling value; without universal access to guidance, interventions widen existing gaps. Future research should prioritize longitudinal evaluations, standardized skills measures, and trials that jointly test supply-plus-demand packages, especially in under-studied regions. Treating employability as an institutional and policy capability—continuous, data-informed, and co-produced with employers—offers the most credible path to resilient, high-quality graduate employment in an economy reshaped by digitalization and AI.

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