

OVERSKILLING AND HUMAN CAPITAL UNDERUTILISATION IN CONTEMPORARY LABOUR MARKETS: A CONCEPTUAL REVIEW

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Abstract: *Overskilling, defined as the inadequate use of a worker's skills relative to job requirements, is becoming more common in today's labour markets. This pattern raises substantial issues about the efficacy of investments in education and training. The paper examines existing research and policies to help people better understand overskilling and its connections to related concepts. It combines ideas from interpretive labour economics and offers a conceptual framework that connects the causes, processes, and effects of overskilling. Despite continuous investments in education and skill development, numerous economies encounter challenges, such as graduate underemployment and skill mismatches, resulting in the inefficient utilisation of human capital. The review provides the definition of overskilling, examines its underlying causes and effects, and underscores gaps in the current knowledge. Through the development of a framework, the study demonstrates the interconnection between the expansion of education, labour market changes, and the underutilisation of human capital. Moreover, it analyses the broader implications of overskilling for sustainable economic growth, underscoring the necessity for policymakers, especially in emerging and developing countries, to enhance skill utilisation. The study provides a thorough overview of various observations concerning overskilling and lays the groundwork for future empirical research and policy initiatives aimed at addressing this significant issue.*

Keywords: Overskilling, Human Capital, Skill Mismatch, Labour Market, Underutilization

Introduction

In the past two decades, governments worldwide have enhanced access to higher education and skills training to augment productivity, competitiveness, and inclusive growth. Economic development views education as essential, expecting investments in human capital to yield increased earnings, innovation, and sustained growth. Nonetheless, the swift escalation in educational attainment has not always resulted in a proliferation of high-skill employment possibilities. As a result, numerous labour markets are facing a conundrum characterised by skill shortages occurring simultaneously with extensive underutilisation of skills. This situation highlights significant concerns about labour market dynamics and public policy solutions, as employees often indicate that their skills are not being fully utilised in their positions. This paradox underscores the concurrent existence of skill shortages in specific sectors and underutilisation in others, necessitating careful deliberation for effective policy formulation (OECD, 2024).

Overskilling transpires when employees hold an excess of skills relative to their job requirements, a tendency increasingly evident in both established and emerging countries. Studies reveal that numerous employees perceive their talents as underutilised, prompting concerns about labour market efficiency and the efficacy of educational investments (OECD, 2024). Overskilling correlates with adverse individual consequences, such as wage penalties, reduced job satisfaction, lowered motivation, and impeded career advancement. Empirical studies indicate that overskilling results in personal wage penalties, diminished job satisfaction, and prolonged career disadvantages. The findings indicate that insufficient skill utilisation can negatively impact overall production and reduce returns on public education spending. Furthermore, on a macroeconomic scale, it signifies inefficiencies in labour allocation and the possibility of diminished productivity (De Santis et al., 2022; Plesca & Summerfield, 2023).

While there is already a substantial literature on overskilling and overeducation, the complexity of overskilling in contemporary markets are often misinterpreted with overeducation or a wider skill mismatch. This conceptual ambiguity can hinder the efficacy of policy interventions. Furthermore, a significant portion of the literature emphasises individual results with very little examination of the broader economic and developmental ramifications, especially regarding emerging economies.

This paper provides a conceptual analysis of overskilling in modern labour markets and seeks to fill current gaps in the literature. It elucidates the notion of overskilling, differentiating it from analogous conceptions, and consolidates new empirical evidence about its origins and consequences. The study also highlights significant deficiencies in literature and suggests a conceptual framework to direct future research and policy deliberations. This study aims to offer ideas about the ramifications of overskilling by engaging in discussions on human capital utilisation and sustainable economic development.

Methodology

This study adopts an integrative review technique to synthesize a variety of theoretical and empirical literature, resulting in a comprehensive conceptual framework that connects education systems, labour market dynamics, and human capital underutilization. An integrative review methodology was chosen because it allows for the combination of distinct theoretical perspectives, specifically Human Capital Theory, Job Matching and Assignment Theory, and Signalling Theory, to critically evaluate and redefine the conceptual boundaries of overskilling in modern economies. Relevant material was identified systematically using extensive searches

of major academic databases, particularly Scopus, Web of Science, and Google Scholar. The search approach used specific terms, such as "overskilling," "skill mismatch," "human capital underutilization," and "underemployment."

To capture the evolving realities of contemporary labor markets, the review process placed a specific focus on recently published empirical evidence between 2020 and 2026. This timeline was purposely chosen to include recent, unprecedented structural shifts, especially labor market disruptions and recovery patterns caused by the COVID-19 pandemic. Furthermore, this period emphasizes the accelerating effects of rapid technological progress and the continuous, rapid expansion of tertiary education, which have transformed the demand and utilization of high-level skills.

During the literature selection process, priority was given to high-impact, peer-reviewed journal articles that offered robust micro- and macro-level empirical evidence on the antecedents and outcomes of overskilling. In addition to academic publications, the study prioritized credible macroeconomic and institutional studies from global organizations, such as the OECD, ILO, IMF, and World Bank, to ensure the policy relevance of the findings. Finally, to address geographical gaps in the broader skill mismatch literature, specific attention was given to studies and national case studies examining emerging and developing economies, such as Malaysia and Vietnam, to ensure that the proposed framework accounts for structural underemployment in transitioning middle-income labour markets.

Conceptualising Overskilling

Overskilling refers to a situation in which workers' skills, knowledge, or competences exceed the requirements of their current job responsibilities. This concept differs from overeducation or overqualification, which typically relies on formal educational credentials that exceed job requirements, as well as the broader issue of skill mismatch, which includes both underutilisation and overskilling (Giuliano et al., 2024; OECD, 2021). The distinction is essential, as educational achievement does not consistently correspond with a worker's competencies or their effective application in their position.

In contemporary labor economics literature, overskilling is frequently categorized as a subset of skill mismatch, a broad umbrella term encompassing both underskilling (shortages) and overskilling (surpluses). However, conflating these distinct phenomena can obscure the divergent causal mechanisms and socio-economic implications inherent to each. While skill shortages are typically a supply-side issue, overskilling often reflects a systemic failure on the demand side of the labor market (McGuinness et.al, 2018).

Policies designed to mitigate skill shortages through enhanced vocational training or expanded educational quotas may prove ineffective or even counterproductive in addressing overskilling. If the root cause of the mismatch is a lack of job complexity or inadequate industrial demand for high-level cognitive tasks, increasing the supply of skilled labor merely exacerbates the surplus (Allen & de Grip, 2012).

Defining the conceptual boundaries of overskilling is therefore essential for targeted analysis and efficient policy responses. It necessitates a shift in focus from the quantity of human capital produced to the quality of job-skill alignment. This distinction is vital for governance: while augmenting training supplies may resolve skill gaps, it cannot rectify overskilling stemming from job polarization or a lack of high-skill job creation. Consequently, addressing overskilling

requires demand-side interventions, such as fostering innovation-led growth and enhancing organizational design to better utilize existing employee capabilities (Mavromaras et al., 2013).

To properly acknowledge the conceptual boundaries of overskilling, it is important to consider how the problem is measured in empirical research, particularly through self-assessment and job analysis methods. The self-assessment method is based on employees' subjective appraisals of their own skill utilisation, which captures the complex, individualised experience of the workplace while remaining vulnerable to subjective bias about future versus current skill expectations. On the other hand, job analysis method, uses objective evaluations by expert analysts or normative frameworks to define the exact skills needed for specific occupations (Saad et al., 2023). According to the author, while this method reduces self-reporting bias, it can have a time lag and large administrative costs, frequently failing to keep up with quickly changing labour market demands in dynamic industries.

Beyond individual and expert evaluations, more general statistical and task-level measurements are commonly used. Realised match approaches statistically evaluate an individual's skill or education level to the mean or median level of workers in related occupations, providing a scaled macro-level perspective but frequently misleading formal schooling with actual skill proficiency (Saad et al., 2023). To address the multidimensional character of today's job responsibilities, task-based indicators provide a more comprehensive method by quantifying the frequency and difficulty of certain job tasks. This method accurately captures the operational realities of skill deployment, distinguishing cognitive or technical underutilisation from simple educational mismatch, and is becoming increasingly important for tracking workforce transitions in highly automated or digitalised industries (Esposito & Scicchitano, 2022).

Theoretical Perspectives on Overskilling

A multifaceted theoretical lens is necessary to understand why overskilling persists in contemporary labour markets. Although market clearing is frequently assumed in classic economic models, there are several viewpoints that explain why a sizable percentage of the workforce continues to work in roles that do not fully utilise their capabilities.

Theory of Human Capital (HCT)

According to the Human Capital Theory (Becker, 1964), training and education are strategic investments meant to increase lifetime wages and individual productivity. Overskilling, however, indicates a serious mismatch between these investments and the achieved results. According to De Santis et al. (2022), an inefficient accumulation and use of human capital is indicated when a worker's skills surpass the demands of their position. The state, which sees a declining return on public educational subsidies, and the individual, who pays a "wage penalty", both experiences less than ideal results because of this underutilisation, which implies that the productivity increases normally anticipated from higher education are being repressed. Brunello and Wruuck (2021) argue that skill mismatch is now more pronounced in developing economies transitioning to knowledge-based structures. In these regions, overskilling is often a structural byproduct of a disconnect between academic output and evolving industry requirements, rather than a lack of individual effort (Senkrua, 2021; Jackson & Li, 2022).

Job Matching and Assignment Theory

The viewpoints of job matching, and assignment emphasise the significance of labour market friction, whereas HCT concentrates on the individual's supply of skills. In a perfect market,

people would be seamlessly placed in positions that best suit their skill sets, but in practice, factors like salary rigidities, geographic immobility, and incomplete information sometimes make such an arrangement impossible. Persistent overskilling, according to Plesca & Summerfield (2023), is frequently a structural aspect of contemporary economies rather than a passing trend. Workers are pushed into "downward" matches, where their skills are unrealised because there aren't enough complicated job openings, and job development in high-value industries does not keep up with the growth of the educated workforce.

Signalling and Credential Inflation

The Signalling (or Screening) perspective offers a more cynical view of educational expansion. From a signalling perspective (Spence, 1973), educational qualifications serve as indicators of worker ability, which may result in graduates being hired for positions that do not fully utilise their competencies. Assuming that schooling is more a signal of natural aptitude than a direct boost to production, increasing educational attainment could result in "credential inflation." Employers may increase the minimum entry requirements for mid-level positions as the supply of graduates grows. This isn't because the job activities have gotten more complicated, but rather to make the screening process easier. According to Giuliano et al. (2024), hiring people with advanced degrees for positions that do not need them is one of the main causes of modern overskilling. Overskilling is an institutional consequence of a competitive "arms race" for credentials in this environment.

Table 1: Comparison of Theoretical Perspectives

Theory	Focus	Key Concept / Cause of Overskilling	Supporting Sources
Theory of Human Capital (HCT)	Individual Supply	Inefficient accumulation of skills; seen as a waste of investment yielding wage penalty. Recent research emphasizes that over-education is often a mask for skill obsolescence caused by rapid technological change (AI/Automation).	Mavromaras et al. (2013); McGuinness (2006); Brunello & Wruuck (2021); OECD (2021); Summerfield (2023)
Job Matching & Assignment Theory	Market Friction	Structural issues like geographic immobility or salary rigidities lead to downward matches. New data suggests that high labor turnover in mismatched jobs is driven by "search-and-match" functions where workers treat overskilled roles as temporary placeholders.	Sattinger (1993); Pissarides (2011); Allen & van der Velden (2001); Coraggio et al. (2025); Baley et al. (2022)
Signalling / Credential Inflation	Institutional Screening	Credential inflation where degrees are used as entry signals rather than for job complexity. Master's degree inflation creates a double mismatch where even specialized graduates are forced into generalist roles to bypass human resource screening algorithms.	Spence (1973); Tholen (2014); Baert & Verhaest (2019); Cheong & Narayanan (2021); Moo et al. (2023); Giuliano et al. (2024)

Recent Empirical Evidence and Emerging Issues (2020–2026)

Prevalence and persistence

According to recent country studies and international assessments, a significant portion of workers believe their abilities are underutilised; overqualification rates have increased significantly over the previous ten years in various countries (OECD, 2024). This persistence points to structural elements rather than only temporary fixes.

Post-pandemic evidence increasingly shows that “recovery” in headcount employment can coexist with persistent shortfalls in hours worked and hours wanted, which makes underemployment (especially time-related underemployment) “stickier” than unemployment in some settings. For Europe, IMF evidence documents that even after employment and total hours recovered, average hours per worker remained depressed, consistent with elevated part-time intensity and reduced hours among employed workers an environment where underemployment can persist even when joblessness falls (Astinova et al., 2024).

At the measurement frontier, ILO’s updated methodological documentation for modelled estimates explicitly operationalizes time-related underemployment and broader labor underutilization (LU2–LU4), reinforcing that prevalence estimates depend heavily on whether we count “hours deficits” and “potential labor force” alongside unemployment (ILO, 2026). Complementing this, UK evidence proposes full-time-equivalent (FTE) employment/unemployment metrics that reveal materially larger labor market slack than conventional rates, with underutilization concentrated among youth, women, and peripheral regions an emerging issue for empirical work because conventional indicators can understate persistence in underemployment dynamics (Houston & Lindsay, 2025).

Individual outcomes: wages, satisfaction, scarring

In addition to evidence of scarring for early-career entrants who start their careers in underutilising positions, other research shows wage penalties for workers who are overeducated or overskilled (De Santis et al., 2022; Eguia, 2023). Such damage can lower mobility and lifetime earnings.

Recent micro-evidence strengthens the view that underemployment is not a “benign” state: it is associated with weaker wage trajectories and deteriorating subjective well-being, even after accounting for worker heterogeneity. During the COVID-19 era, underemployment has been linked to slower wage growth, consistent with constrained bargaining power and limited human-capital utilization in jobs that do not fully use skills or hours preferences (Meehan, 2024).

In parallel, organizational/psychological evidence shows underemployment is negatively associated with job satisfaction, and that the pathway often runs through unmet “work needs” (e.g., autonomy, development, meaningfulness), while social support can partially buffer the penalty—an important emerging issue because it suggests that workplace practices can moderate welfare losses even when job matching is imperfect (Kirazci & Buyukgoze-Kavas, 2024). On longer horizons, graduate labor-market entry evidence from the UK finds sizeable persistence (“scarring”): early underemployment substantially raises the probability of being underemployed years later, implying that early mismatch can alter subsequent job ladders rather than simply reflecting short-term bad luck (Dickson et al., 2024).

Aggregate productivity and firm-level consequences

While some evidence suggests that large-scale overeducation can correlate with higher measured productivity in some contexts (Plesca & Summerfield, 2023), recent industry and region-level analyses yield conflicting results. Misallocation of skills, when not formally deployed, limits innovation and reduces firm-level absorptive capacity, which is the main concern.

At the macro–micro interface, new empirical work highlights that crisis-era policies and firm adjustment margins can reshape productivity through reallocations and “labor hoarding,” with underemployment acting as a hidden slack channel. OECD evidence from administrative firm data during COVID-19 models allocative efficiency by linking firm employment changes to pre-pandemic productivity; the results underscore that policy regimes affecting retention and reallocation can change how quickly labor moves toward more productive uses—an emerging issue because reduced mobility can keep workers employed but underutilized (OECD, 2021).

Relatedly, firm-level evidence on job retention schemes finds that COVID-19 generated mixed productivity effects: reallocation toward more productive sectors/firms can persist, yet within-sector reallocation may weaken under certain interventions, creating a plausible setting for underemployment (hours cuts, tasks below skill) to substitute for layoffs (Meriküll et al., 2024). From a finance–labor adjustment perspective, evidence on labor hoarding emphasizes that firms partially adjust employment in downturns, effectively carrying “excess labor” when they can afford it—an adjustment pattern that can show up as reduced hours or constrained utilization rather than open unemployment and can therefore matter for measured productivity growth (Bäurle et al., 2021).

Emerging-economy dynamics

The demand for high-skilled jobs has not kept pace with the rapid expansion of tertiary education in many emerging economies. National case studies, such as Malaysia, show significant underemployment of graduates and skills-task mismatches, highlighting the role of demand-side constraints and industrial composition (Ting, 2025; Department of Statistics Malaysia, 2025).

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Evidence since 2020 suggests underemployment in emerging economies is tightly intertwined with informality, graduate mismatch, and youth “queueing” for better jobs, making the phenomenon both cyclical and structural. The ILO’s Global Employment Trends for Youth warns that youth job recovery can be accompanied by a growing casualization of work and a widening gap between graduate supply and suitable job creation—conditions that empirically map onto persistent skill-related underemployment and time-related underemployment rather than headline unemployment alone (ILO, 2024).

Malaysia illustrates this pattern clearly: official statistics and recent synthesis reports highlight sizeable numbers of graduates in skill-related underemployment and continued concerns about mismatch between qualifications and job requirements, signaling a durability problem that is especially salient in middle-income labor markets where high education expansion outpaces high-skill job creation (Department of Statistics Malaysia, 2025; Ting et al., 2025). Beyond Southeast Asia, emerging evidence from Vietnam links adverse labor shocks around COVID-19 to measurable mental-health impacts among young people, reinforcing that underutilization and unstable employment in LMIC contexts can transmit welfare costs through both earnings and psychosocial channels (Freund et al., 2025).

In summary, a key emerging issue across all four subtopics is that underemployment is increasingly measurement-sensitive: whether researchers use conventional unemployment, hours-based measures (FTE, hours wanted), or ILO's broader labor underutilization framework can change both prevalence estimates and inferred persistence/scarring. This matters empirically because policy conclusions (e.g., "tight labor market") may look credible under unemployment rates while underemployment remains elevated in the background—especially when hours, job quality, or job matching (skills/tasks) do not recover at the same speed as employment counts (Astinova et al., 2024; Houston & Lindsay, 2025; ILO, 2026).

Conceptual Framework

Based on the previous study, this paper proposes a conceptual framework linking education systems, labour market dynamics, and human capital underutilisation.

At the antecedent level, overskilling is influenced by several factors, including the growth of higher education, technological advancements, labour market rigidities, and the limited creation of high-skilled positions. These elements have an impact on how much employees' skills are used in their jobs.

The overskilling mechanism can be explained by the underutilisation of skills and the depreciation of skills over time. Continuous underutilisation might weaken competencies, which lowers productivity and employability even further.

Overskilling has a variety of adverse outcomes. People may suffer from stagnant professional advancement, decreased pay, and dissatisfaction. Businesses may have lower production and underused creative potential. Overskilling may be a contributing factor to income disparity and represents an inefficient use of public investment in education at the societal level.

Various policy levers, such as better labour market information systems, education-industry collaboration, job redesign to improve skill utilisation, and skill forecasting and anticipation, can act at different phases. The framework offers a systematic foundation for upcoming policy analysis and empirical research.

In addition to suggesting measurable indicators such as the percentage of workers reporting skill underutilisation, graduate-job match rates, and firm-level skill utilisation indices, this framework organises the areas where policies act in the scope of supply, matching, demand, and measurement.

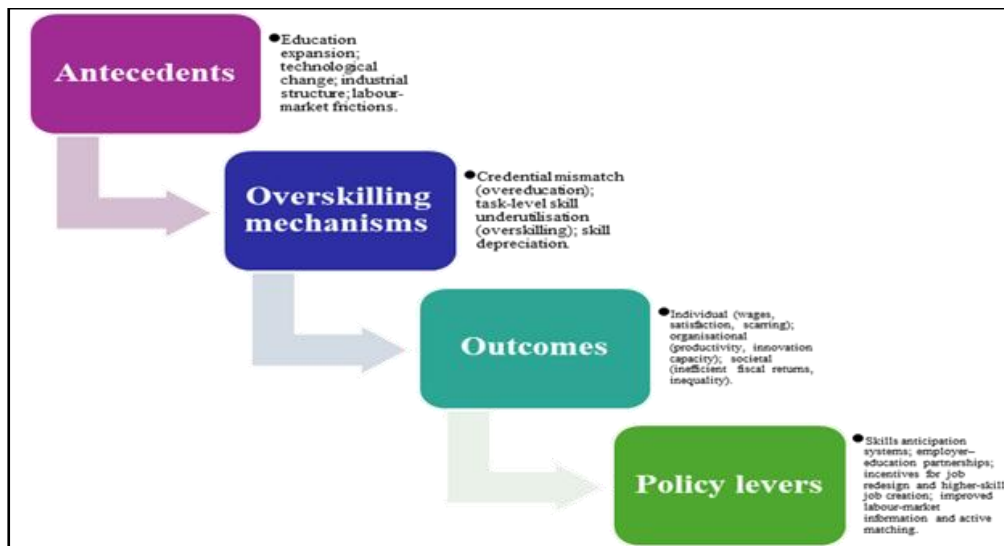


Figure 1: Conceptual Framework Linking Assignment Theory, Overskilling, and Sustainable Economic Development

Source: Adapted from Sattinger (1993); McGuinness (2006); OECD (2016, 2021).

Implications for Sustainable Economic Development

Overskilling has important ramifications for sustainable economic development, since underutilisation of skills restricts the contribution of human capital to productivity growth, innovation, and social mobility. The economic and societal benefits of education are diminished when workers and graduates are placed in positions that do not fully exploit their skills. As a result, increasing the use of talents is just as crucial as raising the standard of education and encouraging good employment possibilities. Instead of concentrating only on raising educational attainment, policymakers should adopt a more balanced strategy that incorporates labour market and industrial initiatives with education policy. For rising nations looking to optimise the developmental benefits of growing higher education systems, the recommendation is especially important (OECD, 2024).

Despite the intellectual nature of the discussion, several policy consequences become apparent. First, to better capture mismatch patterns, national data systems should include task-level skills and skill utilisation indicators in addition to formal qualification measurements (OECD, 2021; Schleicher, 2024). Second, policy should move away from a supply-driven approach to training provision and toward a more balanced approach that also encourages demand for higher-level skills. This includes incentives for firm-level job redesign and industrial policy initiatives.

Third, the friction that leads to overskilling can be lessened by strengthening labour market information systems and providing active employment services to improve labour market matching mechanisms (Brun-Schammé et al., 2021). Lastly, to guarantee that the growth of higher education is strongly correlated with industrial development and job creation strategies, context-sensitive approaches are crucial, especially in emerging nations (World Bank, 2020).

Conclusion

This paper looks at the issues of overskilling and underusing human skills in today's job markets. It helps us better understand overskilling as an economic and development problem by discussing key ideas, including recent research, and suggesting a new framework. Future research should evaluate policies aimed at better using skills, test the proposed framework with

data from companies over time, and include examples from less-studied areas. To make sure that investments in skills lead to fair and lasting economic benefits, we need to tackle the problem of overskilling.

The challenge of overskilling in the modern economy, a multi-faceted approach involving organizations, policymakers, and researchers is essential. Organizations must pivot toward Empowered Squads by implementing job crafting and AI-driven internal talent marketplaces that allow overskilled workers to seek high-complexity gigs, thereby satisfying the psychological need for competence and preventing skill stagnation. Simultaneously, policymakers must move beyond supply-side training and focus on demand-side interventions, such as providing tax credits for R&D to create complex roles and enacting credential reform to curb master's degree inflation in hiring algorithms. Finally, researchers should leverage real-time digital well-being data to track the psychological impact of mismatch and refine sector-specific measurement tools, to detect hidden overskilling in rapidly digitizing industries. Together, these strategies transition the focus from merely managing labor quantity to optimizing the quality of job-skill alignment for long-term workforce well-being.

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