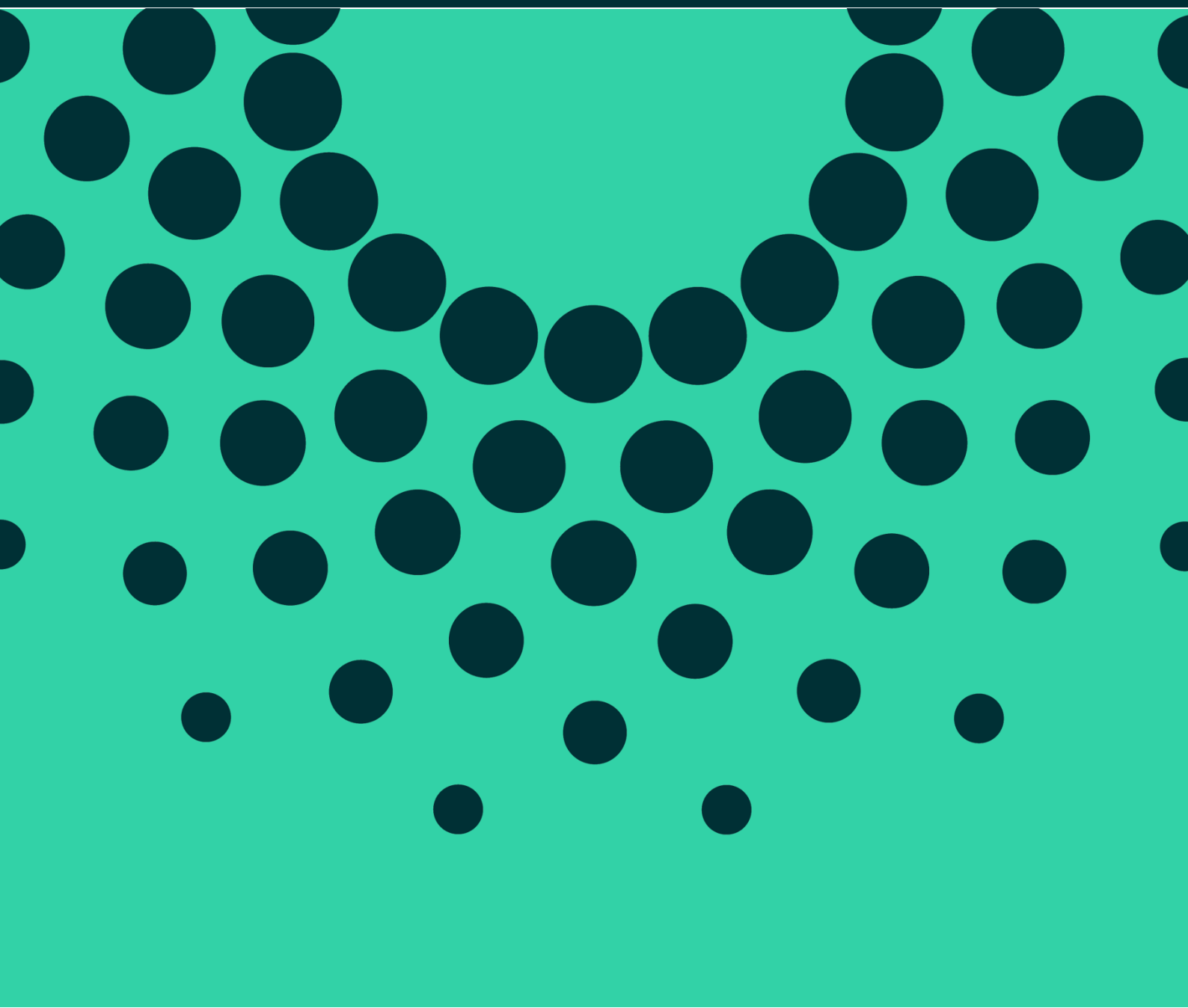


Measuring inequality- driven skills gaps in the UK labour market

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Background

Skills gaps shape productivity, earnings and inequality in the UK labour market. Recent government assessments highlight persistent shortages that hold back growth and investment (Skills England, 2025). Policy responses often focus on education and training, and treat skills as something people mainly acquire outside work.

Many valuable skills, however, are developed through employment itself, so access to jobs is central to how skills evolve over time. Field experiments in Britain show persistent ethnic inequalities in hiring, even when applicants have similar qualifications (Heath & Di Stasio, 2019). Much less is known about what these hiring inequalities mean for people's careers and the skills they build over time.

Career interruptions, periods of unemployment and restricted access to job-to-job progression all shape the environments in which workers accumulate skills. Unequal access to employment may therefore create persistent skills gaps, even when workers begin with similar capabilities.

Summary

Hiring discrimination does not just affect who gets a job today; it can also push some people onto less favourable career paths. These less favourable paths limit the skills people can build, the jobs they can reach later, and how well their skills are used across the economy. Small disadvantages at the hiring stage can therefore grow into lasting differences in skills and opportunities.

We use a simulation model built from the [Annual Survey of Hours and Earnings \(ASHE\) linked to 2011 Census – England and Wales dataset](#). The model compares two simulated labour markets: one where applicants from ethnic minority groups are less likely to be invited to interview (“callbacks”), and one where all applicants have the same chance of getting a callback. These lower callback rates are treated as a callback penalty – a form of hiring discrimination at the first screening stage – because they reduce people's chances of entering skill-building jobs in the first place.

Removing this penalty helps workers build higher skill levels over the course of their simulated careers, reduces gaps between workers' skills and job requirements, and increases direct job-to-job moves. The largest gains are in transferable skills that are valuable across many occupations. Workers from ethnic minority groups benefit most in the equal-treatment scenario: they spend more time in employment, accumulate stronger transferable skills and earn more over their careers. Taken together, the results show that hiring discrimination reduces long-run skill accumulation and worsens worker–job mismatch, with important implications for skills policy, productivity and ethnic inequalities in the UK.

What we did

This study combines UK labour market data with a simulation model of labour mobility to examine how hiring discrimination affects skill development over full career trajectories. Our primary dataset is [ASHE linked to the 2011 Census for England and Wales](#), which captures detailed worker movements across regions, industries, occupations and earnings over the 2010–2012 period (ONS, 2023). Although this panel is short, it provides unusually rich evidence on job-to-job mobility in the UK labour market.

We use the observed transitions to calibrate a simulation (“agent-based”) labour market model in which workers move across jobs, enter unemployment and return to work over their careers (Fair & Guerrero, 2025). In the model, workers accumulate skills while employed and lose some skills when those skills are not used, reflecting the idea that people build skills through work itself (Arrow, 1962). Future job opportunities therefore depend not only on a worker’s current job, but also on their wider work and unemployment history.

To study inequality, the model introduces ethnicity-based hiring discrimination at the callback stage using empirically grounded differences in callback rates from UK field experiments (Heath & Di Stasio, 2019). Applicants from ethnic minority groups face lower callback probabilities than otherwise similar applicants from the White majority group, mirroring these experimental estimates. The White majority group here includes people recorded in the 2011 Census as White British, White Irish, Gypsy or Irish Traveller, and Other White, with all other Census ethnic groups treated as ethnic minority groups. This binary split follows common statistical practice but does not capture possible differences in hiring discrimination between specific ethnic groups.

We then compare two simulated labour markets that are both calibrated to the same observed data. In one simulation, ethnicity-based hiring penalties at the callback stage persist; in the other, these penalties are removed and all applicants have the same callback rate. Keeping job availability, skill requirements and other labour market structures unchanged allows us to isolate the role of hiring discrimination in shaping people’s career paths and long-run skill accumulation.

Key terms used in this analysis

- **Career pathway:** the sequence of jobs and unemployment periods a worker experiences over time.
- **Direct job-to-job move:** changing jobs without first becoming unemployed.
- **Transferable skills:** skills that are useful across many occupations, such as social skills, technical skills and resource-management skills (for example, managing projects, dealing with customers or using digital tools).
- **Worker–job skill mismatch:** the gap between the skills a worker currently has and the skills their job requires; higher mismatch means skills are being under-used or over-stretched.
- **Callback penalty:** a lower chance of being invited to interview for applicants from ethnic minority groups than for otherwise similar White applicants; in the model this represents hiring discrimination at the first screening stage and means they must submit more applications to get an interview.

What we found

Key findings at a glance

Removing hiring discrimination improves both access to jobs and how effectively skills are built and used across people's careers:

- **About £52,000 more in total earnings** per worker over the simulated career.
- **Around 4 percentage points more time in employment** over the career.
- **About a 21% increase** in direct job-to-job moves.
- **Around a 6% reduction** in worker-job skill mismatch.
- The largest gains are in **transferable skills** that are useful across many occupations.
- **Workers from ethnic minority groups see the strongest improvements**, especially in time in employment, transferable skill growth and long-run earnings.

Taken together, these gains imply more efficient use of skills across occupations, with likely productivity benefits through reduced mismatch and stronger job-to-job progression.

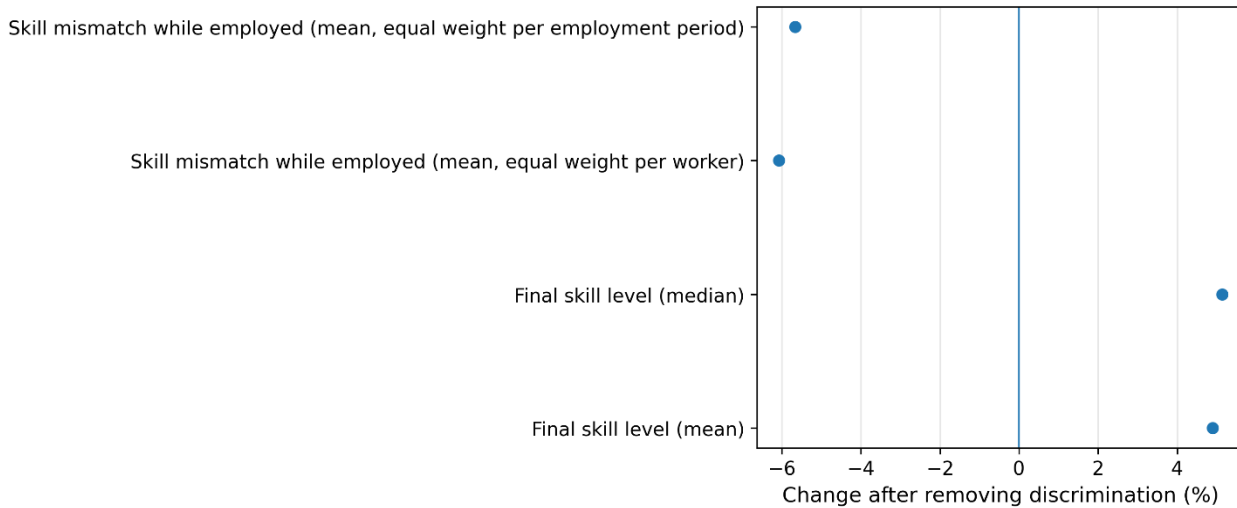
Hiring discrimination reshapes career skill development

The clearest finding is that hiring discrimination does not only affect who gets hired today. It also changes the transferable skills workers are able to build over their careers, which then shapes the kinds of jobs they can access later. Small disadvantages at the hiring stage can therefore grow into larger differences in skills and opportunities over time.

When hiring penalties are removed, workers finish their simulated careers with higher overall skill levels and about a 5.7–6.1% reduction in worker-job mismatch (Figure 1). These changes show that fairer hiring improves both the skills people build and how well those skills fit the jobs they do. Over the course of people's careers, this leads to more effective use of skills in the labour market.

Better alignment between workers and jobs also means existing skills are used more effectively across the economy, because more people move into roles where they can be most productive. The increase in long-run earnings is substantial – around £51,594 on average over the simulated career – alongside a 3.77 percentage point increase in time spent in employment and substantially more direct job-to-job movement. These patterns suggest that observed earnings inequalities are partly the result of earlier inequalities in access to skill-building opportunities through work.

Figure 1. **Removing hiring discrimination raises long-run skill levels and reduces worker-job mismatch.** Average skill levels are higher and average mismatch is around 5.7-6.1% lower in the scenario where all applicants have equal callback rates. The reduction in mismatch is visible both when averaging equally across workers and when averaging equally across employment periods, showing that gains reflect both better outcomes for individual workers and more effective use of skills across total time spent in work.



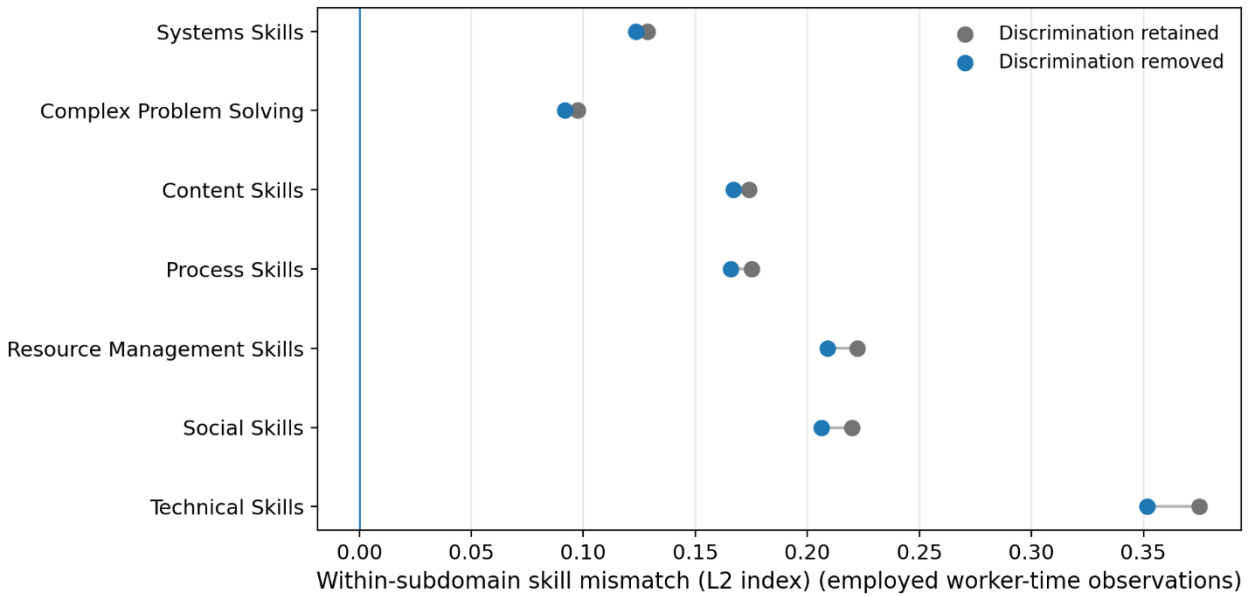
Transferable skills drive much of the gain

The largest skill gains and strongest reductions in mismatch (Figure 2) are seen in the transferable capabilities that help workers move across occupations. These capabilities include social, technical and resource-management skills that are useful in many different roles. This suggests that discrimination suppresses exactly the kinds of skills people need to move between jobs and adapt to changes in the economy.

Average job-side skill requirements change very little between the two simulated scenarios. This indicates that the gains arise mainly because workers build stronger transferable skills through better career sequences, not because jobs themselves become less demanding. In other words, fairer hiring changes who is able to build these skills, rather than lowering the skill demands of work.

At the labour-market level, improvements in skills and matching appear quickly once hiring penalties are removed, with a sharp rise in average skill levels and a fall in mismatch. The biggest early improvements are seen among workers entering the labour market, who benefit from better first job matches and faster skill growth. Cohort analysis shows that these gains widen rather than fade over time as better early job matches compound into stronger later-career skill profiles.

Figure 2. **Transferable skills account for much of the reduction in mismatch.** Removing hiring discrimination reduces skill mismatch across several transferable skill sub-domains, especially technical, resource management and social skills. The L2 index summarises the size of the gap between a worker’s skills and the skills their job requires within each sub-domain, showing that better career sequences allow workers to build and use these capabilities more effectively.



Workers from ethnic minority groups benefit most

The skill effects are not distributed evenly across the labour market. Workers from ethnic minority groups experience the largest improvements in skill accumulation and the largest reductions in mismatch when discrimination is removed, alongside the largest gains in direct job-to-job mobility and cumulative job entries. This indicates that hiring penalties restrict access to the kinds of job histories that allow people to develop new and transferable skills over time.

Early missed opportunities therefore widen into large differences later in people’s careers. In the equal-treatment scenario, workers from ethnic minority groups spend more time in employment, achieve higher final skill levels and experience stronger wage progression, which substantially narrows ethnic gaps in long-run outcomes. These results show that fairer hiring can both improve long-run prospects for ethnic minority workers and reduce ethnic inequalities in the labour market.

Why it matters

Hiring policy is also skills policy

These findings show that decisions about who gets hired are also decisions about how skills are built in the economy. Barriers at the point of hiring do not only create short-run unfairness in who gets a job; they also push workers onto different career paths, changing the roles they can access and the skills they are able to build over time. Small differences in callback rates can therefore grow into lasting gaps in skills and long-run outcomes, especially for groups that face persistent hiring penalties.

Productivity and mismatch

The strong reduction in worker-job mismatch points to a broader productivity benefit. When discrimination is removed, workers move more smoothly into roles that better use and extend their transferable skills, leading to higher lifetime earnings and more time in employment. Over time, this means more of the existing workforce is employed in jobs where their skills can contribute most.

This is consistent with wider evidence that higher skill mismatch is linked to lower labour productivity and weaker growth across countries and industries (OECD, 2016). Taken together, the results suggest that discrimination reduces productivity not only because it is unfair, but also because it stops existing capabilities from being used where they are most valuable.

Inequality and workforce resilience

The unequal gains observed for workers from ethnic minority groups indicate that discrimination contributes to long-lasting gaps in skills as well as wages. Interventions that target hiring processes may therefore influence long-run inequalities in progression, skill development and resilience to future labour market shocks. By changing who can access skill-building roles early in their careers, such interventions can help prevent gaps from widening over time.

Making hiring processes fairer could strengthen both equality of opportunity and long-run productivity by reducing mismatch, supporting better job-to-job progression and using transferable skills more efficiently across the UK economy. These changes would leave the workforce better placed to adapt to future economic shifts and policy priorities. Over the longer term, this can support a more resilient and inclusive labour market.

The results also have implications for how upskilling and progression programmes are designed. They show that, under discriminatory hiring, some transferable skills become systematically under-developed for workers from ethnic minority groups. Targeted support that focuses on these skills can therefore complement fairer hiring practices by helping to close the long-run gaps in skills that discrimination creates.

What next?

A key next step is to use this model to test how different policies might change long-run gaps in skills between groups. Because the model tracks how workers build and lose skills over time, it can compare policies that prevent unequal career paths from emerging with those that try to repair skill gaps later in life. This allows policy-makers to see not only whether an intervention works, but also when in people's careers it is likely to be most effective.

This makes it possible to compare the likely long-run effects of interventions that:

- reduce hiring barriers directly, for example by tackling discriminatory callbacks
- improve early-career access to skill-building job moves
- support skill recovery after unemployment
- target groups facing persistent callback disadvantages, such as ethnic minority workers.

Taken together, these policy levers span both prevention and remediation. They can be assessed within a common framework that tracks how interventions change job histories, skills and earnings over time. This provides a clearer basis for deciding where to focus limited policy resources.

A second extension is to incorporate more realistic forms of hiring discrimination at the point of entry. Future work could model more detailed ethnicity categories, allowing callback penalties to vary across specific groups and labour-market contexts (Di Stasio & Lancee, 2020). It could also draw on meta-analytic and field-experimental evidence documenting hiring penalties related to gender, age, disability and religion in different labour markets (Lippens et al., 2023; Birkelund et al., 2022; Bjørnshagen et al., 2021; Di Stasio et al., 2021).

Further progress would also benefit from richer employer–employee linked data and linkage to education or training records, allowing clearer separation of formal and work-based skill formation. This would help identify whether the most effective policy levers are improving access to jobs, improving progression once employed, or strengthening formal education pathways. It would also make it easier to connect changes in hiring practices to outcomes later in workers' careers.

References

- Arrow, K. J. (1962). The economic implications of learning by doing. *The review of economic studies*, 29(3), 155-173.
- Birkelund, G. E., Lancee, B., Larsen, E. N., Polavieja, J. G., Radl, J., & Yemane, R. (2022). Gender discrimination in hiring: Evidence from a cross-national harmonized field experiment. *European Sociological Review*, 38(3), 337-354.
- Bjørnshagen, V., & Ugreninov, E. (2021). Disability disadvantage: experimental evidence of hiring discrimination against wheelchair users. *European Sociological Review*, 37(5), 818-833.
- Di Stasio, V., & Lancee, B. (2020). Understanding why employers discriminate, where and against whom: the potential of cross-national, factorial and multi-group field experiments. *Research in Social Stratification and Mobility*, 65, 100463.
- Di Stasio, V., Lancee, B., Veit, S., & Yemane, R. (2021). Muslim by default or religious discrimination? Results from a cross-national field experiment on hiring discrimination. *Journal of Ethnic and Migration studies*, 47(6), 1305-1326.
- Fair, K. R., & Guerrero, O. A. (2025). Endogenous labour flow networks. *EPJ Data Science*, 14(1), 39.
- Heath, A. F., & Di Stasio, V. (2019). Racial discrimination in Britain, 1969–2017: a meta-analysis of field experiments on racial discrimination in the British labour market. *The British Journal of Sociology*, 70(5), 1774-1798.
- Lippens, L., Vermeiren, S., & Baert, S. (2023). The state of hiring discrimination: A meta-analysis of (almost) all recent correspondence experiments. *European Economic Review*, 151, 104315.
- OECD. (2016). *Skills Matter: Further Results from the Survey of Adult Skills*. Paris: OECD Publishing.
- Office for National Statistics (2023). Annual Survey of Hours and Earnings linked to 2011 Census - England and Wales, released 03 July 2023, ONS Secure Research Service Metadata Catalogue. DOI: <https://doi.org/10.57906/80f7-te97>
- Skills England. (2025). *Assessment of priority skills to 2030*. London: HM Government.

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