

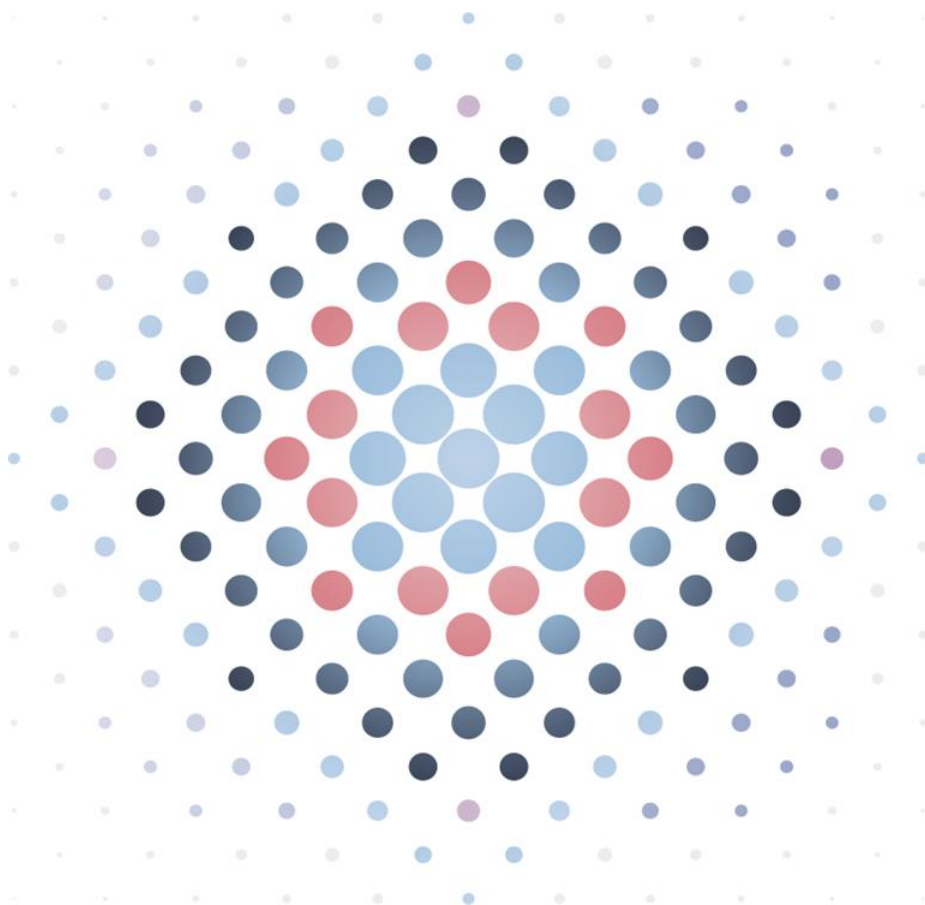
Policy brief: Findings from a Systematic Review of the Relationship Between Skills and Productivity

Prepared for Government Skills



Government Skills

June 2025



Policy Brief

What is this about?

This policy brief is about evidence on the link between workforce skills and productivity in the public sector, and the policy implications of that evidence. It summarises the findings of a systematic literature review, commissioned by Government Skills and undertaken by Alma Economics. The review considered evidence from OECD countries on the following topics:

- 1) The relationship between the skills of government and public sector workers and public sector productivity.
- 2) The contextual factors this relationship depends on.

Why does this matter?

The UK public sector employs almost six million people. The productivity of this sector, therefore, has significant implications for the UK economy. Workforce skills have long been recognised as a key driver of productivity. The public sector is investing significant resources in developing workforce skills, partly in view of the potential for enhanced productivity.

To make effective decisions about workforce skill development, an understanding is needed of the overall strength of evidence for a relationship between skills and productivity, and the contexts and conditions under which any such link is strongest. This is in addition to needing an understanding of which kinds of interventions are best at strengthening public sector skills – a topic which was addressed in a second project by this team, which has been co-published with this Policy Brief.

Empirical research on the relationship between skills and productivity is very diverse. This makes it difficult to identify or summarise what is known about the links between skills and productivity, and what can therefore be used to inform policy and practice. Through a comprehensive synthesis of the relevant evidence structured around the topics above, a systematic literature review can plug that gap.

Who is this for?

This policy brief is primarily intended for decision-makers within the UK government who are considering whether and how to invest in workforce skills as a strategy for improving public sector productivity. It aims to help them understand what evidence they can and cannot be confident about using to guide their decisions.

While the focus is primarily on supporting public sector decision-making, we also expect these insights to be applicable more widely for those interested in understanding the relationship between skills and productivity. The literature on skills and productivity specifically within the public sector is sparse so, although the public sector is the ultimate focus of our research, our review incorporates insights found in other contexts that we deemed applicable to the public sector.

What we found

The findings of our review suggest the following key implications for policy.

Very strong evidence of a positive association between skills and productivity, supporting the view that improving skills can bring productivity benefits

In our review of the literature on the links between skills and productivity, nearly 90% of the results produced suggested that skills are positively associated with productivity. Our statistical testing showed that this would be extremely unlikely to occur unless there truly were a tendency for the relationship to be positive.

It is very challenging for studies in this literature to establish beyond reasonable doubt that the skills-productivity relationship is causal (or entirely causal). It is possible, for example, that organisations with greater levels of workforce skills also have other characteristics that make them more productive. Different studies use different methods to try to account for this, but it is always difficult to be sure whether all relevant factors have been controlled for. That said, our synthesis of the literature suggested that the tendency towards finding a positive skills-productivity link is not highly sensitive to the broad methodology employed.

To get the most productivity benefit from upskilling, policy on skills should be integrated with complementary policies

We found evidence to suggest that the skills-productivity relationship is not universally constant, but context-dependent. Importantly, there is evidence that many of the contextual factors influencing the strength of the skills-productivity relationship are often within the power of organisations to influence.

Skills utilisation and mismatch

Skills cannot translate into productivity in a job unless they are useful and used for that job. The findings of three papers we reviewed directly suggest that alignment between the skills workers possess and the skills required by their jobs is a determinant of productivity. Other evidence that we reviewed may be indirectly indicative of this point as well. For example, there is evidence that the skills-productivity relationship is greater in relatively highly-skilled sectors (which, on average, characterise the UK public sector), which may be because those sectors contain roles that have more use for increased levels of skill.

An environment that allows for innovation

Two studies we reviewed found that workplaces with more innovation exhibit stronger skills-productivity relationships. The studies measure innovation according to whether new processes (e.g. ICT processes) or methods of organising production are introduced.

Management practices

Evidence suggests that the skills-productivity relationship is stronger in organisations with better management practices.

These findings imply that the productivity benefits of increased skill levels could be greater if other aspects of the workplace (besides skill levels) are also improved, so as to extract the most productivity benefit from those skills. These aspects include the degree to which workers' skills are well suited to the tasks that they are given; the degree to which the workplace supports and enables innovation; and management practices. This finding highlights the importance of joined-up policy-making: for example, policy that successfully increases skills will be more powerful if accompanied by policy which ensures better alignment between skills and tasks, or which improves management practices.

Unfortunately, the evidence base around the role of these contextual factors is sparse. No single contextual factor was studied in more than three papers. There is therefore more research to be done around exactly how these complementary areas of policy should be best designed to integrate most effectively with skills policy.

In addition, these might not be the only relevant contextual factors. They are just the ones on which our review found existing empirical evidence.

Further building the evidence base to inform policy

There are two key areas in which Government Skills or the wider public sector can help to further build a useful evidence base around skills and productivity: data and evaluation.

Data

Quantitative empirical evidence relies on data. A key respect in which data could help to generate research that better guides policy is by shedding more light on the role of contextual factors. Our review has highlighted that there is enough evidence to be confident that there is a skills-productivity association, and that the strength of the association varies according to context. However, only a small number of papers study the role of contextual factors. There may be other key factors that play a role which we do not have evidence on. A key constraint is that there is very little data, and hence little in-depth research, on what actually happens within a workplace. The public sector could play a key role here through investment in additional data sources, informed by insights and dialogue between survey designers and academic researchers.

Evaluation

More high-quality evaluation of skills initiatives within the public sector itself would help further build the evidence base. This is a route by which Government Skills can contribute relatively directly, ensuring careful assessment of the impacts of the public sector learning and development programmes that it oversees, and through promoting and explaining the case for further initiatives and evaluation. It can also seek to ensure comparability, as far as possible, in the results produced across evaluations –

for example, by encouraging common approaches to skills and productivity measurement – which would aid future efforts to summarise evidence on the magnitude of the link between skills and productivity across different studies.