Devolution as a lever for innovation diffusion and productivity growth: From anchor institutions to wider adoption - the case of Cumbria

The Productivity Institute and the Northern Powerhouse Partnership

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Date:
November 2026

Key words
Productivity growth, innovation, devolution

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Acknowledgements
This report is co-written by The Productivity Institute (TPI), as part of the Northwest Forum's research, and the Northern Powerhouse Partnership (NPP).

The report contributors from TPI are Kate Penney, Raquel Ortega-Argilés and Philip McCann (North West Forum) and William Sarsfield and Nathan Mckeogh (Data Lab). Contributors from the Northern Powerhouse Partnership (NPP) are Henri Murrison, Andrew McPhillips and Tegan Massey. Thank you to the Northwest Forum members who have provided feedback on this report.

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Suggested citation

K. Penney (2026) *Devolution as a lever for innovation diffusion and productivity growth: From anchor institutions to wider adoption: the case of Cumbria*. The Productivity Institute.

The Productivity Institute is an organisation that works across academia, business and policy to better understand, measure and enable productivity across the UK. It is funded by the Economic and Social Research Council (grant number ES/V002740/1).

The Productivity Institute is headquartered at Alliance Manchester Business School, The University of Manchester, Booth Street West, Manchester, M15 6PB. More information can be found on The Productivity Institute's website. Contact us at theproductivityinstitute@manchester.ac.uk

Abstract

This is the abstract in Circe 14 justified.

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Introduction

Increased devolution raises an important question for many English regions: What can devolved powers accomplish that national strategy has not yet achieved? This question is especially important when devolution is aligned with the aims of the Industrial Strategy (IS) and its selective sectoral approach, as it raises issues about how nationally defined priorities translate into place-based economic development. For Cumbria, this is particularly relevant given its rural and peripheral context, and because its economy combines high-value, innovative firms with a large number of small to medium enterprises (SMEs) that have comparatively low levels of innovative capability. The question, therefore, is not whether innovation exists in Cumbria, but why it does not spread more widely across the local economy.

This report by The Productivity Institute (TPI) and the Northern Powerhouse Partnership (NPP) aims to build an understanding of the relationship between Cumbria's sectoral structure and the growth potential of its small and medium-sized enterprises (SMEs). Although the high-value and innovative firms of Sellafield and BAE Systems play a major role in Cumbria's economy and are representative of priority sectors in the UK's Industrial Strategy (IS), the region also includes a diverse range of Small and Mid-Market Businesses whose contributions are significant but often overlooked in traditional Industrial Strategy discussions.

Building on the findings from the Northern Powerhouse Partnership Innovation for impact: closing the productivity gap in the North (2025) and the TPI Cumbria and Devolution scoping review (Penney, 2026), this report provides insights to support the region to move beyond a "picking winners" approach and towards a more evidence-led approach to regional development, with a particular focus on innovation. It builds on the findings of NPP and TPI and explores how devolution can drive regional development in Cumbria by translating the strengths of its highly innovative organisations into wider innovation adoption and productivity gains across the regional economy.

The Policy Landscape Affecting Place and Regional Growth

The Industrial Strategy

The UK's Modern Industrial Strategy (IS) takes a mission-based approach, prioritising particular sectors and advocating strong partnership working over the long term, defined as ten years (Department for Business and Trade, 2025). It provides a coordinated set of government policies aimed at shaping the structure of the economy by supporting key sectors, enhancing productivity, and addressing regional imbalances (Peck and Thorpe, 2025). Changes in global markets, technology, and geopolitics, among other factors, reinforce the need for industrial strategies that provide strategic support for specific sectors and shape market conditions (Westwood 2023). This contrasts with more traditional laissez-faire approaches that operate on a supply-and-demand basis without state intervention (Westwood and van Ark 2025). The current Industrial Strategy states that it seeks to create stronger partnerships between business and the state, and to place private business, innovation and entrepreneurship at the centre of the UK's renewal (Department for Business and Trade, 2025).

It targets eight priority sectors judged to have the highest potential for growth and increased productivity. These sectors, referred to as the IS-8, are advanced manufacturing, clean energy industries, creative industries, defence, digital and technologies, financial services, life sciences and professional and business services. In the context of the North of England, the Northern Powerhouse Independent Economic Review (NPIER) highlighted the prime capabilities of advanced manufacturing, health and life sciences, digital and energy with enabling capabilities of financial and professional services, higher education and logistics which map closely. This targeted approach nationally and on a pan Northern basis provides strategic focus and support, but also raises important questions about its ability to support economy-wide productivity and enable diffusion beyond these sectors.

Thinking across the long-term for the entire economy to improve productivity

An Industrial Strategy for the everyday economy report (Keep, 2023) suggests moving beyond a narrow, high-tech, science-led model of industrial strategy and adopting a much broader, long-term approach that improves productivity, job quality and management across the entire economy. This broader perspective highlights that industrial strategy is not only about sectors, but should also consider the importance of management and workplace practices (ibid). This matters for productivity because a firm's ability to adopt and scale new technologies and skills, described as absorptive capacity (Cohen and Levinthal, 1990), is an important dimension of growth and development. Not all firms possess high levels of absorptive capacity and, as a result, many are unable to translate innovation into productivity improvements. Therefore, alongside identifying sectors with strong innovative potential, effective policy in places such as Cumbria may also depend on careful consideration of firms' capabilities to absorb, adapt and deploy new technologies and skills. Without these skills, systems and organisational capacities, investment in innovation is unlikely to translate into sustained productivity gains (McCann & Ortega Argilés, 2013).

The complexity of balancing the distinctiveness of place, sectors and varying capabilities amongst firms highlights the value of devolution. Increased devolution and changes to subnational government, including Mayors and Strategic Authorities, will be key in bringing about these changes, but structural changes alone are not a guarantee of improvements to regional productivity and prosperity (Warner et al., 2024). Devolved governance provides a greater scope for innovation policy to reflect local economic conditions (McCann et al., 2025). Local and Combined Authorities are better positioned to align support to local firm capabilities, needs, and the local economy and institutions (Rodriguez-Pose, Dijkstra & Poelman, 2024). However, they will need high levels of institutional capacity and capability, good local data and the ability to interpret it and plan strategically (Kenny et al., 2023).

Why understanding sectoral strengths matters

Places require a deeper analysis of an area's industrial strengths. When they know this, and have the evidence to support it, they can make more informed and strategic decisions about the industries to invest in with the most potential for innovation and productivity growth (Peck and Thorpe, 2025). Although feasible, this analysis is influenced by differences in firms' data resources, competitive strength, and their ability to collect, interpret, and respond to data.

Devolution

Devolution is the transfer of powers and resources from central government to local or regional authorities, allowing decisions to be made closer to the communities they affect. It aims to enable policies to reflect local needs, improve coordination across areas like skills and infrastructure, give

communities a stronger voice, and foster innovation through locally driven solutions (English Devolution White Paper, Dec 2024).

The English Devolution White Paper (December 2024) signals a shift away from competitive, short term funding models towards a more collaborative and equitable approach to regional growth, arguing that excessive centralisation has constrained local economic development. While the White Paper proposes expanded devolved powers across England, there remains uncertainty over whether these reforms will deliver genuine autonomy, capacity, and resources, or instead transfer responsibilities to local areas without sufficient means to deliver effectively (Morphet, 2023). The success of devolution is therefore contingent not only on the formal transfer of powers, but also on robust accountability frameworks, inclusive governance, and effective engagement with citizens, communities and businesses (Newman et al., 2024). Realising the benefits of devolution will require institutional capacity, specialist expertise, and staffing within local and combined authorities, particularly in smaller and rural areas.

As England now has an increase in places receiving devolution deals, it is necessary to better understand how devolution can effectively support places that do not share the same characteristics as those that have seen relative success, such as city regions (Sweeney, 2026). This is important not only for understanding how best to realise the potential benefits of devolution, but also to ensure that places are not expected to replicate approaches developed in successful urban areas where the underlying economic and institutional conditions do not apply (Penney, 2026). There is some evidence to show that urban focused policies such as innovation zones and cluster strategies disproportionately benefit metropolitan areas, particularly London and the Southeast, with limited spillovers to rural regions, reinforcing spatial inequalities (Storper, 1992; Lee, 2017; Bowen & Webber, 2024), reinforcing the importance of place-based policy that accounts for the distinct features of place (McCann, 2016; Hildreth & Bailey, 2013).

Innovation and diffusion in Cumbria's specific sectoral context

The Northern Powerhouse Partnership report (2025) highlights that the North West has firms with strong absorptive capacity; however, it has a low business density and fewer incubators and spinouts compared to other English regions. This suggests that while areas like Cumbria have high-value firms, they do not benefit from the positive impacts of business clusters and innovation ecosystems in the same way that regions such as Cheshire, Manchester, or Merseyside do.

To assess Cumbria's current sectoral outlook, this research utilises the methodology set out in The Northern Powerhouse Partnerships 2025 Innovation report. To determine how a sector is performing two measures are used. Firstly, specialisation is measured by the location quotient which analyses a sector's share of employment in Cumbria divided by its share across England (excluding London). An LQ of 1 or more indicates above-average concentration. Secondly, productivity is measured as GVA per employee, standardised against the same sector across England's ITL2 regions (excluding London), so a score of 0 or more indicates above-average productivity for that sector. Together these place each sector in one of four quadrants:

- Mature (high concentration, high productivity).
- Scalable (low concentration, high productivity).
- Foundational (high concentration, low productivity)
- Non-clustered (low concentration, low productivity).

The analysis uses ONS' Business Register and Employment Survey 2024 data and ONS regional GVA by industry.

When examining the Industrial clusters in the North West, the same report classifies manufacturing as a whole as a mature cluster in the region. At a sub-regional level, manufacturing in Cumbria presents a more mixed picture. New analysis using the same methodology identifies several manufacturing subsectors in Cumbria as mature clusters, including other transport equipment, rubber and plastics, food products, and wood and paper. However, additional sectors linked to Cumbria's nuclear and energy base, such as basic metals, electricity supply and electrical equipment, are highly concentrated but record lower productivity than the same sectors elsewhere in England and are classified as foundational clusters. This suggests that although Cumbria has major employers in high value, globally significant nuclear, engineering and energy activities, these sectors do not translate into high productivity clusters locally and may not be well connected to the wider SME base.

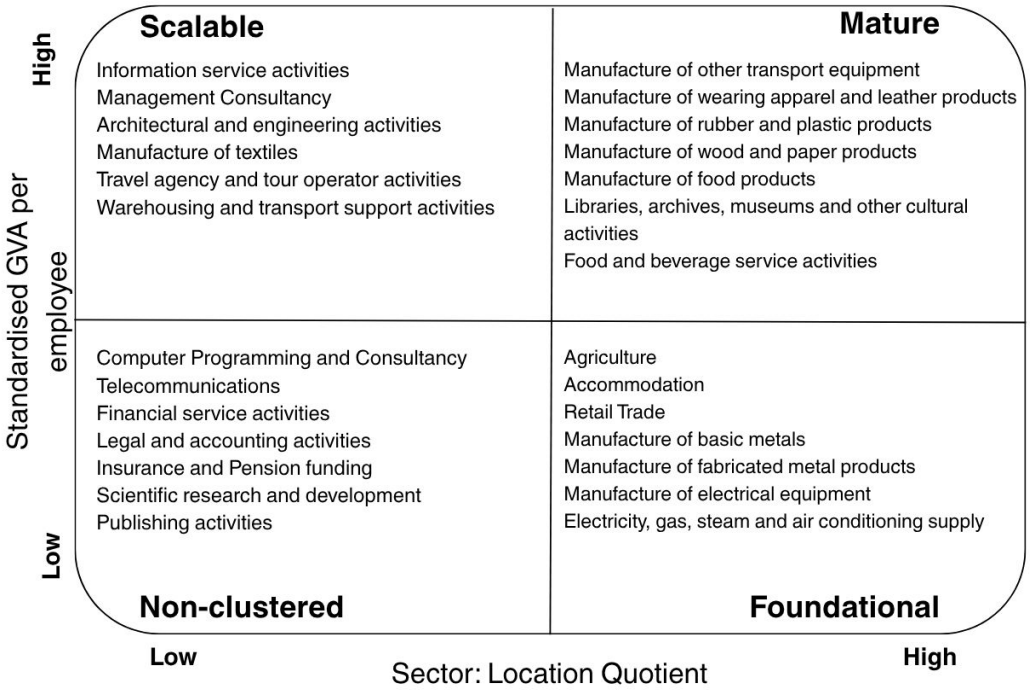

Figure 1: Sectoral Clusters in Cumbria

Note: This figure shows a selection of sectors in each quadrant; the full classification is set out in the technical annex.
Source: Northern Powerhouse Partnership analysis of ONS Business Register and Employment Survey 2024 (via Nomis); ONS Regional GVA by industry for all of England excluding London.

What this means for Cumbria

To understand and improve knowledge diffusion, Cumbria needs granular, linked datasets across business and innovation activity, knowledge networks and ecosystems, workforce and skills, digital and infrastructure readiness, and sectoral structure and productivity.

National strengths, local diffusion challenges

The Productivity Data Lab's analysis of Cumbria's business base provides a granular picture of where innovative capacity sits, who has the skills to absorb it, and how far its benefits currently reach. An important piece of context is how Cumbria's industrial strategy sectors perform in terms of productivity compared to the UK.

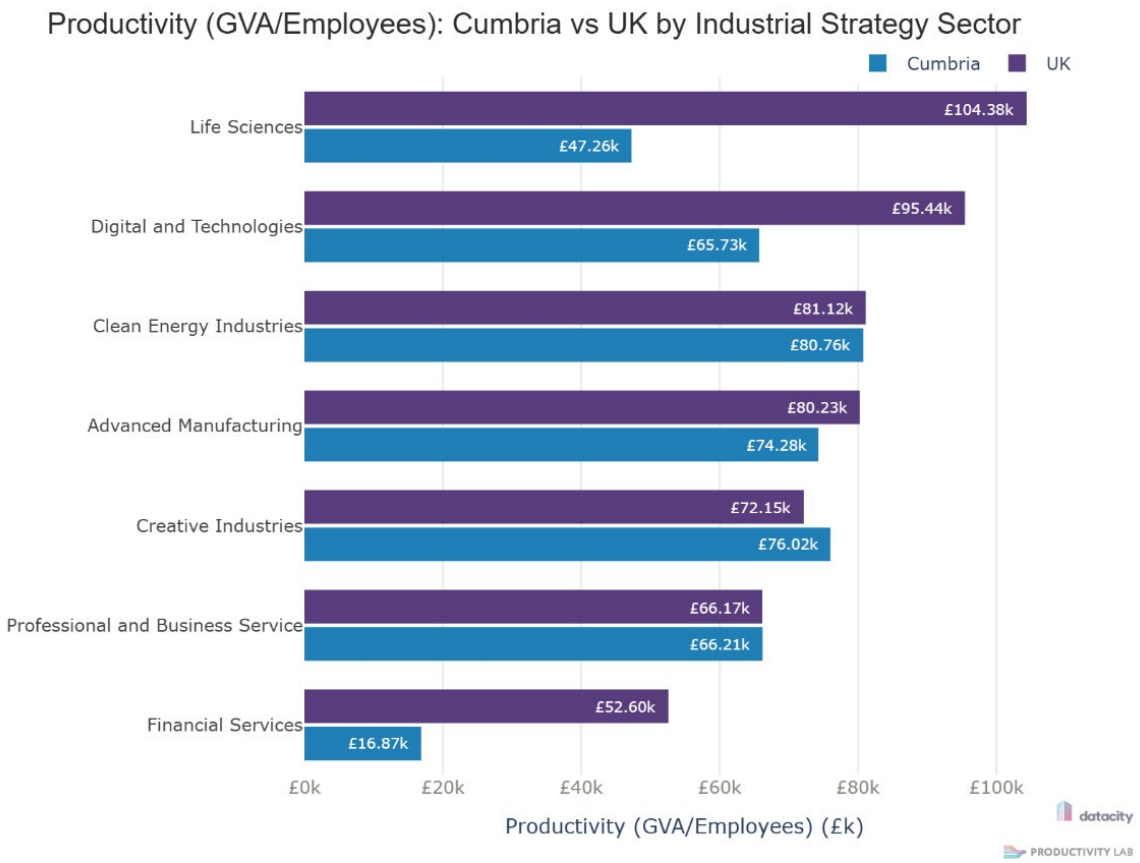

Figure 2 Bar Chart of the Productivity (GVA (£ thousands/employees) comparing Cumbria's IS8 sectors to the UK,

Source: The Data City

The gap between Cumbria and the UK is not uniform, the three biggest productivity gaps are Financial Services (£16.87k vs £52.60k - under a third of the UK level), Life Sciences (£47.26k vs £104.38k - less than half), and Digital and Technologies (£65.73k vs £95.44k). Clean Energy industries, Advanced Manufacturing, Professional Business services, and Creative industries all sit at similar levels of productivity as the UK.

These productivity figures are drawn from company-level data from the Data City and exclude sole traders and partnerships. This is likely to have greatest impact in sectors with high rates of unincorporated business activity, such as agriculture and tourism, and less impact in sectors dominated by larger incorporated firms, such as nuclear and advanced manufacturing. Comparisons with the UK use the same company-only basis to preserve consistency.

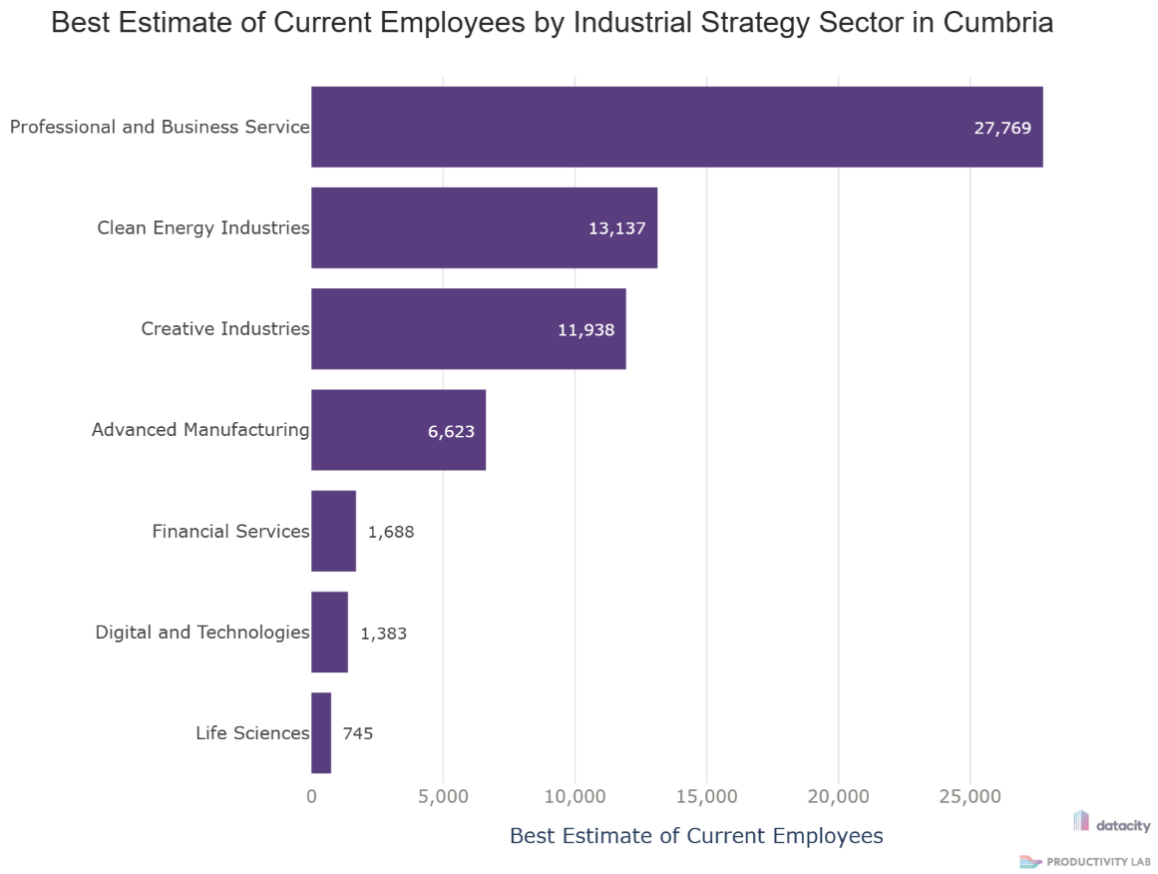

Figure 3: Bar chart of employees by IS8 sectors in Cumbria

Source: The Data City

Reading the employment and productivity data together makes the diffusion problem more visible. Advanced Manufacturing in Cumbria achieves productivity close to the UK average (£74.28k vs £80.23k), yet it employs a comparatively small share of the Cumbrian workforce (6,623), against Professional and Business Services' 27,769. This points to a sector whose productivity is being carried by a small number of high-value operations - the BAE Systems submarine programme - rather than a broad base of manufacturing firms performing at this level.

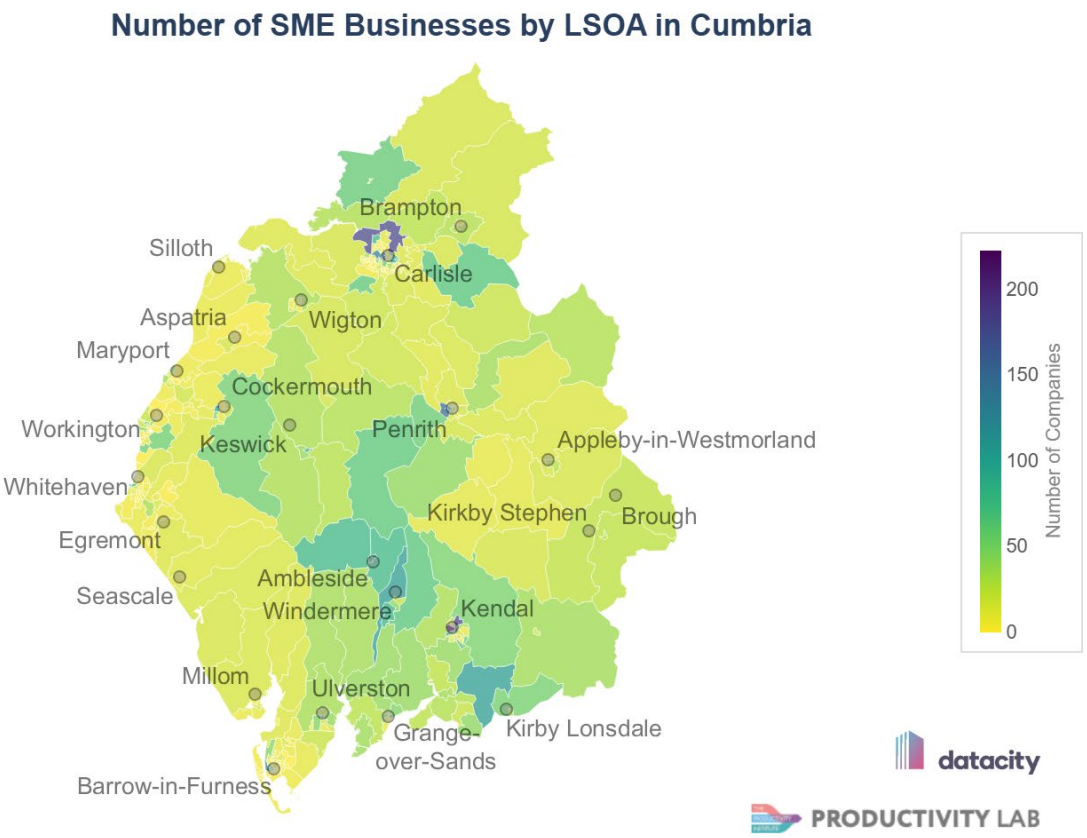

Figure 4: Number of SME Businesses by LSOA in Cumbria,

Source: The Data City

Figure 4 shows the distribution of operating SME businesses across Cumbria's LSOAs. The pattern provides some of the clearest spatial evidence of anchor non-diffusion in the region. Despite hosting the BAE Systems submarine programme – one of Cumbria's most significant industrial specialisms - the LSOA around Barrow-in-Furness shows a notably low SME count. The west coast around Sellafield (Seascale, Egremont, Whitehaven) follows the same pattern: neither of Cumbria's two major industrial anchors appears to be generating a dense surrounding business base.

By contrast, the South Lakes cluster (Kendal, Windermere, Ambleside) shows moderate-to-high SME density, but this is a structurally different economy - most likely reflecting tourism and hospitality activity rather than innovation-driven business formation. Carlisle stands out as the area of highest concentration, though this is likely explained in part by its status as Cumbria's largest urban centre, rather than a distinctly stronger innovation ecosystem.

Together, these patterns reinforce the central concern: Cumbria's anchor institutions sit within some of the thinnest surrounding business bases in the region, while areas of higher SME density reflect either population size (Carlisle) or a tourism-dependent economy (South Lakes) rather than diffusion from high-value industry.

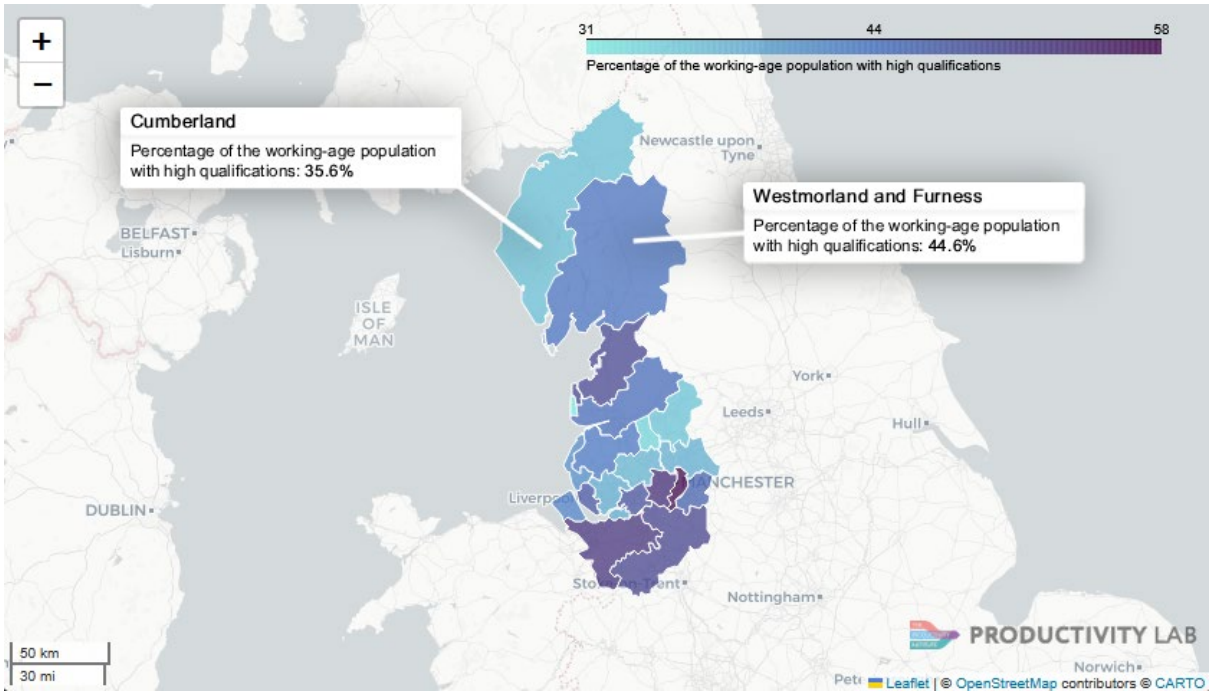

Figure 5: Choropleth Map of the North West ITL3 regions and their percentage of the working population with high qualifications

Source: ONS (Nomis)

Skills distribution in Cumbria is not uniform. Westmorland and Furness sits at 44.6%, while Cumberland is at 35.6% - a gap of almost 9 percentage points on a scale that runs from 31% to 58% across the North West. Comparing this to Manchester, the region most associated with devolution success, is useful here: Manchester has the highest percentage of working-age population with high skills in the North West, at 57.8%. This is not to suggest a direct causal link between skills and devolution outcomes, but it does suggest that Manchester's devolution gains were built on a workforce and institutional base that already had strong absorptive capacity. Cumbria, and Cumberland in particular, starts from a materially different position on this same metric - a gap of over 22 percentage points at the extremes.

The cluster analysis in the following section brings these patterns together, showing how Cumbria combines nationally significant industrial strengths with a thinner and less productive wider business base. This helps explain why innovation generated by major anchor institutions may not be diffusing widely across the regional economy.

Cumbria's sectoral structure: strategic strengths and limited diffusion

A cluster analysis of Cumbria's economy, using location quotients (LQ) and standardised GVA per employee to classify sectors into Mature, Scalable, Foundational and Non-clustered quadrants, reveals a regional economy shaped by a small number of nationally strategic industries. Defence, nuclear and tourism dominate the employment and concentration picture to an unusual degree, creating both distinctive strengths and vulnerabilities. Cumbria punches well above its weight in several sectors of national importance, but its economy is narrowly based and structurally exposed to decisions made by central government and a handful of large employers.

Defence is Cumbria's most significant industrial specialism by a considerable margin. Other Transport Equipment, the SIC category that captures shipbuilding and submarine construction, has an LQ of 8.43, more than eight times the national average, and sits in the Mature quadrant with an above-average

productivity score (+0.58). This reflects the BAE Systems submarine programme at Barrow-in-Furness, one of the most strategically important manufacturing operations in the United Kingdom. The Astute and Dreadnought class submarine programmes represent long-term, high-value sovereign capability that generates sustained demand for skilled engineering labour and a specialist supply chain. Barrow is not simply a regional employer; it is a nationally critical industrial asset whose economic trajectory is shaped as much by Ministry of Defence programme decisions as by local economic conditions.

Electricity, Gas, Steam and Air Conditioning Supply has an above-average LQ (1.53) but a below-average productivity score (-0.61), placing it in the Foundational quadrant. In Cumbria this primarily reflects the Sellafield nuclear site decommissioning and related activity. The productivity gap relative to the national average likely reflects the complex mix of operational, decommissioning and public sector activities at Sellafield, which do not map straightforwardly onto commercial GVA metrics. The strategic opportunity is nonetheless substantial: Cumbria is at the centre of the UK's nuclear future, both through the ongoing Sellafield programme and through potential new Small Modular Reactor developments and supply chain, and the transition from legacy decommissioning toward new build creates significant potential for higher-value activity.

The combination of defence and nuclear in Cumbria creates a uniquely concentrated dependency on sovereign industrial programmes. This concentration is a national strategic asset, but it also means the region's economy is unusually sensitive to long-term government decisions. The positive spillover effects of these anchor institutions on the wider SME base are more limited than might be expected given their scale. Low business density, limited incubators and spinouts, and constrained absorptive capacity across the broader economy mean that the innovation and productivity advantages generated within BAE Systems and Sellafield are not effectively diffusing into the regional economy. This is precisely the problem that devolution, if well-designed, is positioned to address.

What this means for productivity

Beyond the defence and nuclear anchors, the cluster analysis reveals a series of foundational productivity challenges directly relevant to the absorptive capacity and diffusion argument. Agriculture (LQ 3.62) and Accommodation (LQ 4.15) are both highly concentrated but below-average in productivity, reflecting the dominance of upland farming and Lake District tourism in the regional economy. These are sectors with large employment footprints but limited capacity for technology adoption and productivity improvement without targeted support. Rubber and Plastic Products (LQ 1.85, GVA +2.12), with Pirelli in Carlisle part of the automotive supply chain, and Wearing Apparel and Leather Products (LQ 1.15, GVA +1.54) are genuine Mature clusters with above-average productivity, demonstrating that parts of Cumbria's manufacturing base have modernised effectively, but these are niche specialisms rather than the economy's primary productivity drivers.

Digital, financial and professional services present the starkest structural weakness, with all of these sectors showing low concentration in Cumbria. Some combine low concentration with below-average productivity (non-clustered), while others are more productive (scalable). Computer Programming and Consultancy (LQ 0.26, GVA -1.01) combines low concentration with below-average productivity. Telecommunications (LQ 0.46)and Financial Service Activities (LQ 0.61) are also below-average concentration for England (excluding London), and Information service activities (LQ 0.11) is similarly underrepresented though its productivity is above average. Insurance and Pension Funding has an LQ of effectively zero. Professional and Business Services are similarly underrepresented: Legal and Accounting (LQ 0.66), Management Consultancy (LQ 0.47) and Architectural and Engineering Activities (LQ 0.89) all fall below an LQ of 1. The absence of scale in digital and professional services base is a challenge, which has been addressed through recent investments by businesses like Arup who opened

and grew their office in Whitehaven for example. However, rather than trying to compete with existing clusters in Greater Manchester to the south, or Newcastle to the East, the North of England can and should meet these capabilities and enablers to support Cumbria in addition to what is present locally.

Conclusion

Devolution provides Cumbria with an opportunity to plan in a way that better reflects its rural and peripheral economy, whilst also improving innovation diffusion, adoption, and productivity gains across the wider economy. This will require improvements to transport infrastructure and strong institutional coordination.

Cumbria is home to several sectors that have national importance and exceed national averages, however, currently, these benefits remain with a relatively small number of large employers. This is reflected in the data that does not show industrial clustering in the same way that it does in other parts of the Northwest such as in Cheshire, Manchester and Merseyside. This suggests that although Cumbria has major employers in high value, globally significant sectors in nuclear, engineering and energy, they are not classified as high productivity clusters and are not well connected to the wider Northwest SME base.

Challenges such as low levels of knowledge diffusion are precisely the kind of issues that devolution, if well-designed, is better positioned to address as devolved governance can align local firm capabilities to sectors and needs. This is not only structural but requires institutional capacity, leadership, and coordination, again highlighting the importance of strengthening ecosystems and the role of strong institutional capital. The data signals the need to support firms to develop technology adoption and organisational capability and suggests targeted support for SME adoption and diffusion.

The cluster analysis points to three strategic priorities for Cumbria that map directly onto the devolution and innovation diffusion framework set out in this report. First, securing and extending the defence and nuclear anchor through skills pipeline investment, supply chain development and positioning for new nuclear. Second, raising productivity in the foundational clusters through technology adoption programmes, agri-tech investment, and visitor economy improvement underpinned by investment through new tax and revenue raising tools. Third, building links to the enabling economy: maximising through transport links to neighbouring centres with stronger growth enabling capabilities. This will enable the innovation generated within Cumbria's anchor institutions to have greater spillover effects on the wider small and mid-market base as Sellafield have been backing for many years.

This is vital to successfully narrowing the productivity gap between the region's world-class employers and the wider economy.

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