

HOTSW Innovation Ecosystem

- *Building our Evidence Base*

For the MIT Regional Entrepreneurship
Acceleration (REAP) Programme

HotSW Innovation Ecosystem - Building our Evidence Base

A Report for the MIT Regional Entrepreneurship Acceleration (REAP) Programme

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2. Summary Report and Analysis

The MIT Regional Entrepreneurship Acceleration Program (MIT REAP) is a global initiative designed to help accelerate innovation-driven entrepreneurship (IDE) in various regions. The goal of the project is "to support regional teams of leaders representing Entrepreneurs, Risk Capital Providers, Corporates, Academia, and Governments in an evidence-based approach to supporting innovation and entrepreneurship in each team's local region"¹.

The Heart of the South West (HotSW) LEP was selected to take part in this process as part of the UK pilot (launched in March 2020) which included five other LEPs from around England. This summary report highlights the key findings, analysis and conclusions of a review of key data, intelligence, an online survey and interviews with SMEs and Risk Capitalists, and a stakeholder engagement event in the region undertaken during the summer of 2020. These findings will support the development of a strategy for the region going forward.

The Heart of the South West Economy

The fundamentals of the Heart of the South West economy were already challenging prior to the COVID 19 pandemic. Characterised by low productivity, low earnings, low but rising unemployment, a peripheral region with low levels of business dynamism, the region faces an uphill battle to ride the storm of COVID 19 and its economic impact, let alone recover its more recent upward trajectory. Yet we must strike a note of caution as headline findings for the LEP area as a whole mask clusters of world class research, R&D excellence and a small but striving group of IDEs ambitious to lead change, the challenge now is how to nurture and support these businesses.

The Heart of the South West is a large and economically diverse area. Looking at the area as a whole and results in averages the region often compares unfavourably to the England average or less diverse LEP areas.

- **Output and productivity** – HotSW has amongst the lowest productivity levels when compared to other LEP areas, though recent years has seen the region make modest progress in closing the gap against the national average. However, the growth in recent years is only the start of the road to recovery in productivity for the Heart of the South West region after a decade of consistent deterioration, for despite the fact that the productivity growth has been stronger since 2014, it has yet to return to 2004 levels. The region has the lowest rates of labour productivity per hour worked in the country.

What accounts for this performance is the nature of the industrial base, characterised as it is by low representation of high-productivity sectors, and higher representation of less productive sectors such as agriculture & fishing and utilities and tourist-related industries (the latter particularly challenged by the pandemic). The business base has a preponderance of small firms with few large corporates driving innovation and supply chain activity and a public sector which has yet to exploit its power to drive innovation through procurement. The region's peripherality and lack of infrastructure exacerbate this and the region's rurality impacts on business density and lack of agglomeration.

- **Labour market** – yet at the same time the region has historically enjoyed amongst the highest employment rates in Europe, whilst the COVID 19 crisis has seen unemployment rising significantly. In December 2019, 82% of working age population were economically active (UK - 78.8%), effectively functional full employment. Whilst unemployment stood at

¹ <https://reap.mit.edu/shortprograms-uk/>

3.3% in the year to December 2019, by May 2020 COVID Impact saw claimant unemployment rate rise to 5.5%. 82.8% of employees worked in the private sector – broadly in line with the national average and the region has one of the highest proportions of self-employment of all LEP areas (19%). However, a significant issue for the region is low earning levels, though this has been on an upward trend in recent years.

- **Demography** – the region has a growing but starkly ageing population, reflecting its attraction as a retirement destination but also in recent years the dip in younger age groups. This probably accounts for the relative tightness in Heart of the South West's labour market, driven by an ageing population and a weak pull effect for young and middle aged workers, with potential implications for skills shortages in high-skilled and mid-skill occupations, as well as skilled trades.
- **Business Dynamism** – the region is characterised by low rates of business dynamism. The strongest consistent growth over the period has been in enterprises of medium size (i.e. employing 50 to 249 employees). Heart of the South West firms appear to have a lower propensity to scale up, suggesting that business revenues tend to see more stable, linear growth; this is a characteristic indicative of a low incidence rate of Innovation-Driven Enterprises (IDEs) relative to the typical SME population. It also has a high proportion of family owned businesses and relatively less skilled managers.

Innovation Capacity (I CAP) Strengths and Weaknesses

Our review of innovation capacity reveals the following strengths and weaknesses:

Strengths

- **R&D Assets** – the region has a strong foundation of universities (world-class research assets and academics), with University expenditure on R&D higher in Devon than the national average. It enjoys world-leading strengths in Life and Earth Sciences, Physical Sciences, Engineering and Health. This is accompanied by a strong level of interaction between HEIs and businesses in the region and the region is home to a number of National Laboratories – Met Office, PML and UKHO, which represent world class research expertise, particularly linked to environmental intelligence. And whilst our SME survey shows that Universities are an important source of support for IDEs, for many Universities remain hard to access.
- **Sector Strengths** – the region has a broad-based economy with strengths in marine, environmental tech/intelligence, defence, aerospace, food and drink and tourism providing resilience and the basis for cross fertilising knowledge and ideas, though this has yet to be fully exploited. It has a higher number of businesses in knowledge intensive manufacturing than the national average and a developing infrastructure of sector based innovation hubs and collaborative workspaces that has the potential to support sectoral and technological innovation. The challenge is how to optimise the access to and impact of that.
- **Skills infrastructure** – the region has a strong network of high quality education providers, and new South West Institute of Technology focused on building STEM skills for the economy. Employer investment in workplace skills is also relatively high, though training not intensive and there is a strong record of delivering Knowledge Transfer Partnerships.

Weaknesses

- **Low R&D Spend** – however, despite significant R&D assets, total R&D investment is lower than the UK average particularly within the business and government sectors. The LEP area also has a significantly lower success rate of Innovate UK funding than the national

average. The lack of corporate presence in the region contributes heavily to relatively low R&D spend. A feature of the region's R&D assets, however, is that they are very much focused around Exeter and Plymouth which means that Somerset is relatively under-provided for. It is therefore difficult for the smaller towns to offer the critical mass needed to provide local support infrastructure at scale, although the development of the proposed Innovation Centres in Taunton and Barnstaple will help address this issue. Thus the challenge of optimising the existing assets and making them work for the whole region is critical.

- **Low propensity to innovate** - firms in the Heart of the South West were among the least likely to be "innovation active" and IDEs report a lack of effective support for their scale up journey. Nevertheless our survey revealed string ambition amongst at least a small group of IDEs to grow and innovate and perceive themselves as a string innovators. The region has a low level of patents applications by business and does not perform well in terms of the numbers of active graduate start-ups (39% of the LEP average). Employer feedback on the innovation ecosystem suggest that over half of those participating in the online survey felt that ecosystem meant to support firms to start up and grow was at emerging or at an early stage, and was poorly understood.
- **Low levels of STEM skills and occupations** – the proportion of the workforce in STEM occupation can often be used as a proxy for propensity to innovate. However, the region has a lower proportion of its workforce in STEM occupations: 6.7% of all in employment, half that of the top ranked LEPs. The region has a low proportion of graduates in the workforce and managers working in the Heart of the South West are less likely to be qualified at Level 4 than the England average.

Entrepreneurship Capacity (E CAP) Strengths and Weaknesses

Strengths

- **Business Survival** – despite its low levels of new business generation, the one and three year survival rates higher than region and national average. The region is in the top quartile of LEP performance on small high-growth firm incidence rate (1.2%) and the % of firms with positive productivity growth between 2015-18 (8.3%).
- **Knowledge Intensive manufacturing** - the region has a higher number of businesses in knowledge intensive manufacturing sectors than the national average and there is increasing demand for STEM skills. Demand for STEM jobs as a percentage of all vacancies is increasing on both a national and a local level. LEP level analysis of the 2017 shows 21.1 % firms introduced new methods of work organisation and 14.2% implemented new marketing concepts and strategies.
- **Growth Ambitions** – the region has a strong proportion of new high growth firms (2nd quartile of LEPs on % of start-ups generating £1m+ revenues after 3 years). Prior to COVID, the vast majority of businesses intended to grow their business strongly over the next 12 months. Our survey also reveals string growth ambitions, and interestingly a strong motivation amongst IDEs completing our survey a real motivation to "change the world". Harnessing that ambition and linking it to regional challenges may prove a strong motivator.

Weaknesses

- **Low levels of business dynamism** – the significantly low levels of business density and start-up rate is problematic (start-up rate: 9.9% relative to total business stock v. UK 13%). Firms also have a significantly lower propensity to export and to scale up.

Overall the region has a lower proportion of high growth companies and IDEs. In 2018, 4.8% of Heart of the South West's business population were high-growth firms compared with 6.1% in the UK (based on the OECD 20% threshold); 12.6% were considered to be high-growth firms under the OECD 10% threshold. This placed Heart of the South West in the bottom quarter of LEPs on both 10% and 20% thresholds on this measure. And whilst the region has a slightly higher share of manufacturing businesses, they are dependent on a small number of large enterprises, supporting much of the supply chain across the region. Any significant impact to the scale and number of those large enterprises could have a devastating impact on local supply chains.

- **Poor skills levels** – the region has a lower proportion of residents holding a degree level qualification and lower proportion of managers likely to be qualified at Level 4 than the England average. The number of apprenticeships are falling and skill levels overall are below the national average. Businesses also report that they are unsure where to go for support where to go for help and that providers were insufficiently proactive in connecting with them. Educational attainment varies across the patch and at different levels. Attainment at GCSE and at Level 3 by age 19 is below the national average in all local authorities in the Heart of the South West and progression into higher education low. As nationally, the proportion of young people achieving a Level 3 qualification by age 19 has fallen in each of the last 5 years.
- **Poor entrepreneurship culture** – a high number of businesses have owners with low growth ambitions due to lifestyle decisions. They are less likely than average nationally to adopt formal business planning practices. The survey and interviews with SMEs of complain of a lack of positive image particularly of the presence of IDEs. This is exacerbated by poor awareness of support and gaps in the provision of support for scale ups and IDEs.
- **Significant obstacles to business formation and growth** - Through our survey of SMEs and subsequent stakeholder validation workshop, SMEs were clear that there were a number of barriers to start up and growth. Common business concerns included: cash flow (67%), finding the best skills and talent (51%) and the business failing (49%). The primary barriers:
 - Lack of access to funds/capital' (59%)
 - Attracting customers/developing new markets (44%)
 - Balancing work and family life' (42%)
 - Lack of skilled staff (39%)

Key Issues

Supply Side

Lack of support for Business

IDEs perceive that business support, tailored to their needs, is thin on the ground on their journey from start-up to scale-up. Where it exists support is perceived to be partial and disjointed making it difficult for business to find the support they need. Overall IDEs feel an increase in the scale and quality of support available to ideation stage businesses is needed to innovation and commercialisation. That support which does exist is poorly understood

and felt not to be joined up. That which exists is heavily dependent on EU structural funding which comes to an end in 2022, so replacement funding will be required.

Scale ups

There are too few start-ups growing to become £1m plus businesses. More support is required to support this journey.

Skills and Talent - Research shows that access to talent is a critical factor in locating their business, in particular graduate-level technical skills. Access to skills and influence over supply of skills - what is needed and when – is important. As companies scale access to management skills is a challenge. Enabling IDEs to access talent and skills is vital for their growth journey and to support R&D and innovation, particularly STEM skills.

Entrepreneurship Skills - Entrepreneurship culture is not yet embedded within education and corporates. There is scope for further development and encouragement of entrepreneurship skills in further and higher education.

Access to Finance - There is perceived to be a lack of access to finance from a range of sources but particularly risk capital which is underutilised or inaccessible. There is also difficulty accessing grants from funders such as Innovate UK. The survey shows that firms are not using venture capital, crowdsourcing and relying on banks and their own capital.

Risk Capital - A limited pipeline of quality investible ideas makes it difficult to attract investors from the investment community with the knock-on effect that entrepreneurs go elsewhere for investment. An opportunity to strengthen our innovation ecosystem through increased connectivity into the London and overseas investment communities or attract a regional fund is seen as important and will support scale ups.

Physical infrastructure - There has been to date no clear map of physical R&D assets in the region and therefore assets which could support IDEs is not accessible. Business needs to fully understand the existence and nature of R&D assets in the region that can support innovation capacity.

There is also a network of Science Parks at Plymouth, Exeter and Gravity (being established), and a number of innovation and enterprise centres but no real understanding of what is delivered there and their impact. These are not currently linked up sufficiently so capabilities aren't optimised. There is also some indication that in certain areas access to workspace is limited, though this may have changed as a result of COVID and the resultant homeworking. It remains to be seen whether this will return to normal.

Demand Side issues

Lack of Corporates - The limited number and range of corporates in the region, is a major issue in terms of R&D and innovation, limiting supply chain activity. Dependence on a small number of large enterprises means that the region potentially lacks resilience. There is an onus on those large companies in the region to understand potential of intrapreneurship to drive company innovation.

Role of the Public sector - The region has a strong public sector presence, but there is a need for less complex, more flexible procurement processes required to open up routes-to-market and the early adoption of innovative goods and services. In the absence of a significant corporate presence in the region, the onus is on the public sector to do more to support innovation. The public sector could drive Green Recovery so leadership and innovation in procurement is essential.

R&D Investment - The lack of R&D investment is a serious impediment to raising productivity and supporting the development and growth of IDEs. Lack of corporate and government

R&D investment has a knock on effect in terms of the ability of firms to innovate and stimulus funding.

Culture - A common theme in our survey and interviews is the lack of recognition and role models. Businesses want to see a celebration and promotion of entrepreneurship and start ups activity – raising awareness of this as a positive route for the economy and for employment. Promote the exemplars, case studies, good news stories was a clear message.

There is a culture of support and collaboration but there is a long way to go to ensure that gender, ethnicity and socio-economic background are not an impediment for entrepreneurs and innovators. With social mobility and inclusive growth central to the vision for the region, ensuring that this is a feature of business support is essential.

Insufficient is also being done to promote the innovation assets of the region. The region's USP is not clearly communicated, thus the region gets easily ignored in the competition for national investment. Public perception focuses on tourism, at the expense the high growth more technologically driven IDE activity. The region therefore suffers from a misconception that businesses located in the region cannot be cutting-edge and are somehow second rate.

3. Introduction

The MIT Regional Entrepreneurship Acceleration Program (MIT REAP) is a global initiative designed to help accelerate innovation-driven entrepreneurship in various regions. The goal of the project is “to support regional teams of leaders representing Entrepreneurs, Risk Capital Providers, Corporates, Academia, and Governments in an evidence-based approach to supporting innovation and entrepreneurship in each team's local region”².

The Heart of the South West LEP was selected to take part in this process as part of the UK pilot (launched in March 2020), along with Cumbria, Lancashire, and Cheshire & Warrington LEPs, Leicester and Leicestershire LEP, North East LEP, Sheffield City Region LEP, and West Midlands Combined Authority (WMCA). This pilot builds on over 50 previous regions' work since 2012. The chosen regions are to be supported through their recovery from the COVID-19 crisis, while successfully applying the MIT REAP frameworks, including enhancing the productivity of small and mid-size enterprises (SMEs) and innovation-driven enterprises (IDEs).³

The programme is underpinned a process of evidence collation and analysis involving four main steps:

- Compilation of an R&D asset register listing more than 300 discrete organisations or programmes providing knowledge, finance or infrastructure to support R&D in the LEP area
- Initial review of data and intelligence to help the LEP Innovation Board build a better understanding of the regional innovation ecosystem
- In-depth interviews with entrepreneurs & innovators and funders exploring their views on the local innovation ecosystem
- On-line survey of local entrepreneurs, business owners and company directors exploring similar topics to the in-depth interviews.

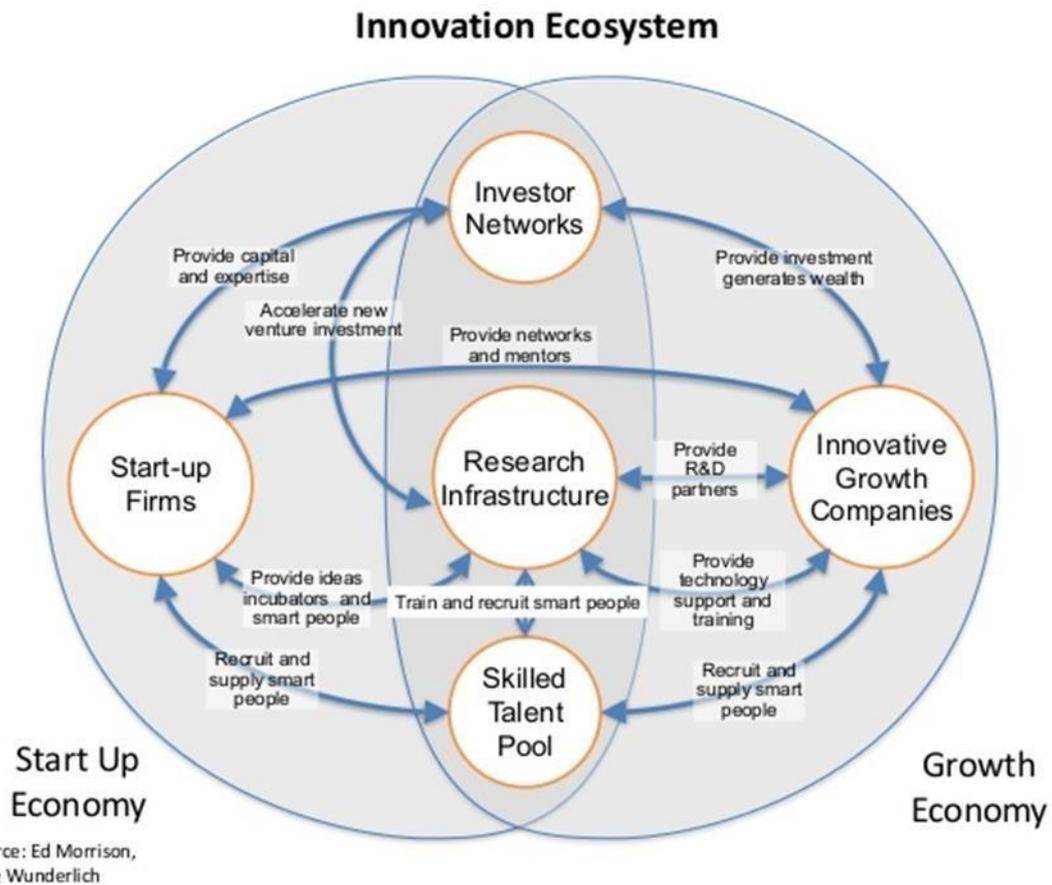
This paper sets out an initial review of the data, intelligence, an online survey and interviews with SMEs and Risk Capitalists in the region. This has been developed as part of the MIT REAP Pilot process but will support the Heart of the South West Innovation Board build a better understanding of the region's innovation and entrepreneurship ecosystem. This in turn will provide the foundation for the formulation of a strategy to boost innovation and entrepreneurship in the Heart of the South West LEP region.

To help build this picture, we have used for referenced the ecosystem map highlighted in Figure 1, which shows an integrated view of an innovation ecosystem in general terms. The model shows the different components and relationships that will need to be investigated, and how they fit together. It also helps us understand where there are gaps in the enabling assets, skills, and infrastructure, as well as where market failures occur. Figure 1 below is a representation of a typical innovation ecosystem, depicting the necessary elements that foster and nourish a thriving business environment.

² <https://reap.mit.edu/shortprograms-uk/>

³ <https://reap.mit.edu/shortprograms-uk/>

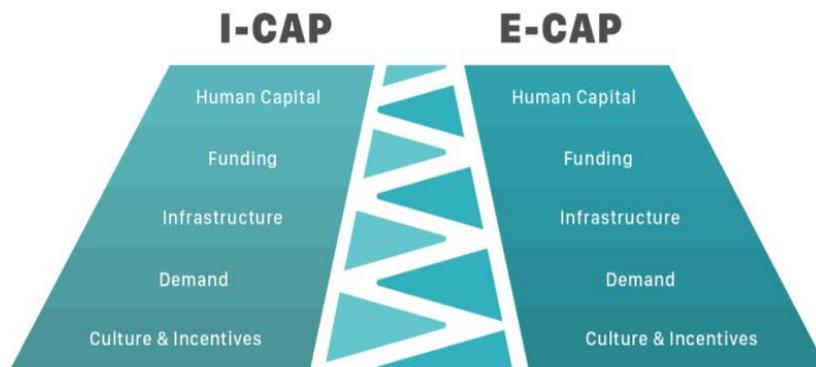
Figure 1. Mapping Components and Relationships in an Innovation Ecosystem



To further support our understanding of where gaps might occur that prevent a region from building an integrated ecosystem that fosters high growth and innovation, we have also referred to the framework proposed by the MIT academic team (depicted in Figure 2 below). This framework helps us analyse at a granular level the resources and inputs available to the region, differentiating between our innovation and our entrepreneurship capacity on several building blocks, or foundations.

Figure 2. MIT's Framework for Assessing Strengths & Weaknesses in our Regional Innovation & Entrepreneurship Ecosystem

ASSESSING STRENGTHS & WEAKNESSES OF YOUR LEP'S INNOVATION & ENTREPRENEURSHIP CAPACITIES

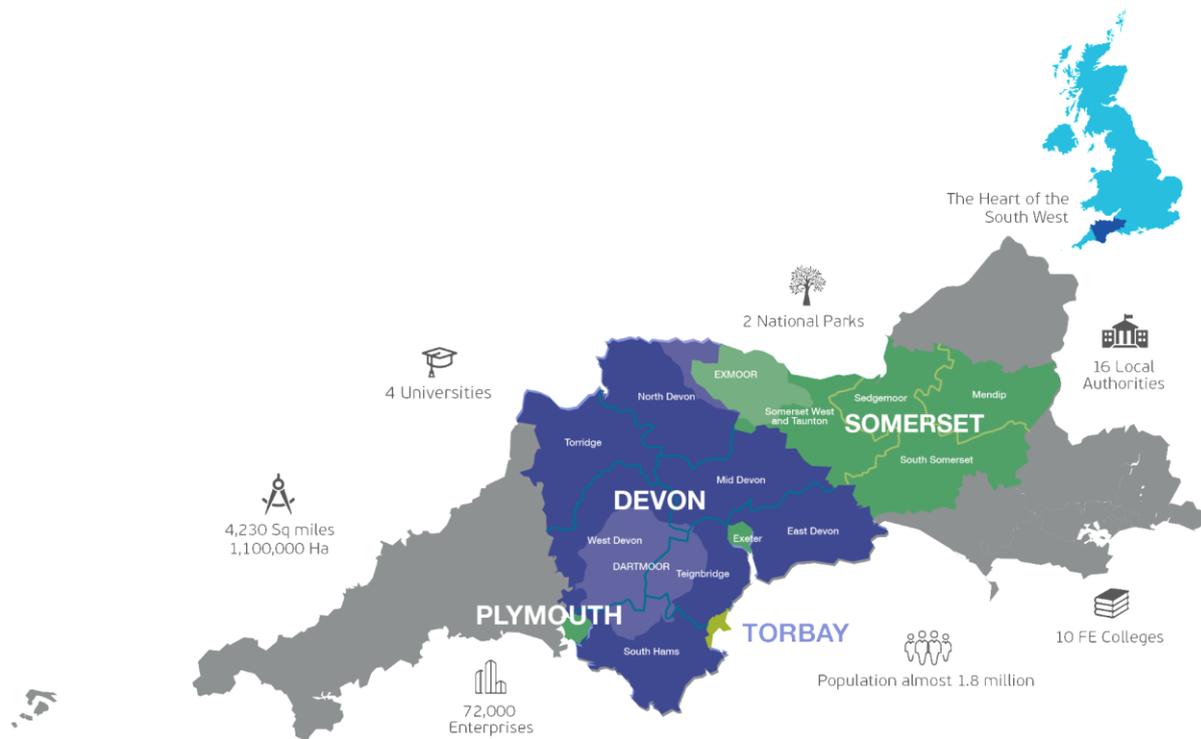


This paper starts by presenting the wider socio-economic context for the Heart of the South West LEP geography, analysing Heart of the South West's performance relative to the UK and other LEP regions. To help develop an understanding of the underlying factors behind this performance, the report then turns to assessing the evidence on Heart of the South West's I-Cap and E-Cap, that is – assessing the availability and quality of inputs that support innovation and entrepreneurship in the region.

The paper is, therefore, structured as follows. Chapter II introduces the region and presents the economic and demographic characteristics of the Heart of the South West region and how these have changed over time; it also presents the evidence that points to specialisations and competitive advantages in the region. Chapter III then presents a detailed picture around Heart of the South West's performance on business competitiveness and innovation. Chapter IV investigates the current state of Heart of the South West's I-Cap and E-Cap, and identifies gaps which, if filled, could help unlock improvements in the performance on innovation and entrepreneurship in the region.

First, however, it is worth introducing the Heart of the South West LEP region in geographical and administrative terms. The region covers a vast part of the South West peninsula (approx. 4,230 sqm), and is bordered by the West of England LEP and Dorset LEP in the North, and Cornwall & the Isles of Scilly LEP in the South. It is a predominantly rural area, extending over two national parks and 16 local authority districts (or 4 upper tier authorities: Devon, Somerset, Plymouth and Torbay), many of them coastal. This is shown in figure 3 below.

Figure 3. Map of Heart of the South West LEP



Geography of innovation in the England

This report provides an overview of the characteristics and performance of the Heart of the South West LEP in terms of its innovation and entrepreneurship assets and where possible benchmarks this against other LEP areas and the England or UK average. Whilst we have not attempted to summarise the literature exploring the determinants of high levels of innovative or entrepreneurial performance or provide a synthesis of 'what works' in creating either (or both). The research team did however uncover a report by the Enterprise Research Centre, published in June 2019 benchmarking local innovation metrics and providing an informative "innovation geography of England"⁴. Based on LEP level analysis of the responses from 14,000 which responded to the UK Innovation Survey in 2017, the researchers identified three key results:

- "A concentration of relatively high levels of product and service innovation and new-to-the market innovation in an arc of local economic areas in the South and East Midlands and along the M4 corridor. Albeit with some variation, these areas are characterised by high proportions of innovating firms, a high incidence of new-to-the-market innovation, and relatively high levels of revenue from innovation".
- "A rather different geography is observed in terms of process innovation with higher levels of process innovation activity in some Northern and peripheral areas where product/service innovation is less common".

⁴ <https://www.enterpriseresearch.ac.uk/wp-content/uploads/2019/06/ERC-ResReport-Benchmarking-local-innovation.pdf>

- “Benchmarks for organisational innovation suggest a rather less clear geographical pattern with a range of different local areas performing relatively strongly. Areas in the ‘arc of innovation’ also tend to perform relatively strongly on these metrics too however”.

Their analysis “highlights the diversity of innovation activity across the UK. Some local areas are marked by strengths in organisational innovation but weaker elsewhere; others exhibit higher levels of collaborative behaviour and R&D. Both suggests the value of differentiated local innovation strategies which can build on existing strengths and remedy weaknesses”.

The results for the Heart of the South West suggest it performs (relatively) strongly in terms of new to the market product and service innovation (13th), new methods of work organisation (14th) and marketing innovation (17th). Its weakest performance (lowest rankings) are for: the introduction of new business practices (33rd) and design innovation (35th). All other rankings are broadly mid-table (between 20th and 23rd).

Finally the researchers conclude that:

“while our benchmarks provide an overview of the geography of innovation across England they also raise questions about ‘why’ this pattern arises. Addressing this question is likely to require more detailed statistical and institutional analyses of the drivers of innovation at the local level. Only in this way will we be clear about the impact and effectiveness of different elements of the business eco-system on local innovation outcomes”.

Our Surveys

A key part of the review of evidence was the an online survey and interviews with a selection of SMEs and Risk Capitalists.

Online survey

The online survey was carried out using a questionnaire developed by the MIT REAP team. The survey link was distributed to around 80 entrepreneurs that were known to partners as suitable candidates for the research. The link was also cascaded to the wider business community through the LEPs network of business support organisations. Forty-one responses were submitted during the three-week fieldwork window that extended from the 8th to the 29th July. The survey explored respondents’:

- Perceptions of and engagement with the current local innovation ecosystem
- Experiences and perspectives of successful entrepreneurs in the region
- Understanding of the barriers and enablers to success, start- and scale-up in the area
- Perceptions of stakeholder support towards start- and scale-up initiatives

Interviews

In addition to the online survey further in depth interviews took place with eight entrepreneurs and three investors/financial institutions across Devon and Somerset. The research was undertaken during July and August 2020. The findings from these surveys are included in this report alongside the data analysis.

4. The Heart of the South West Economy

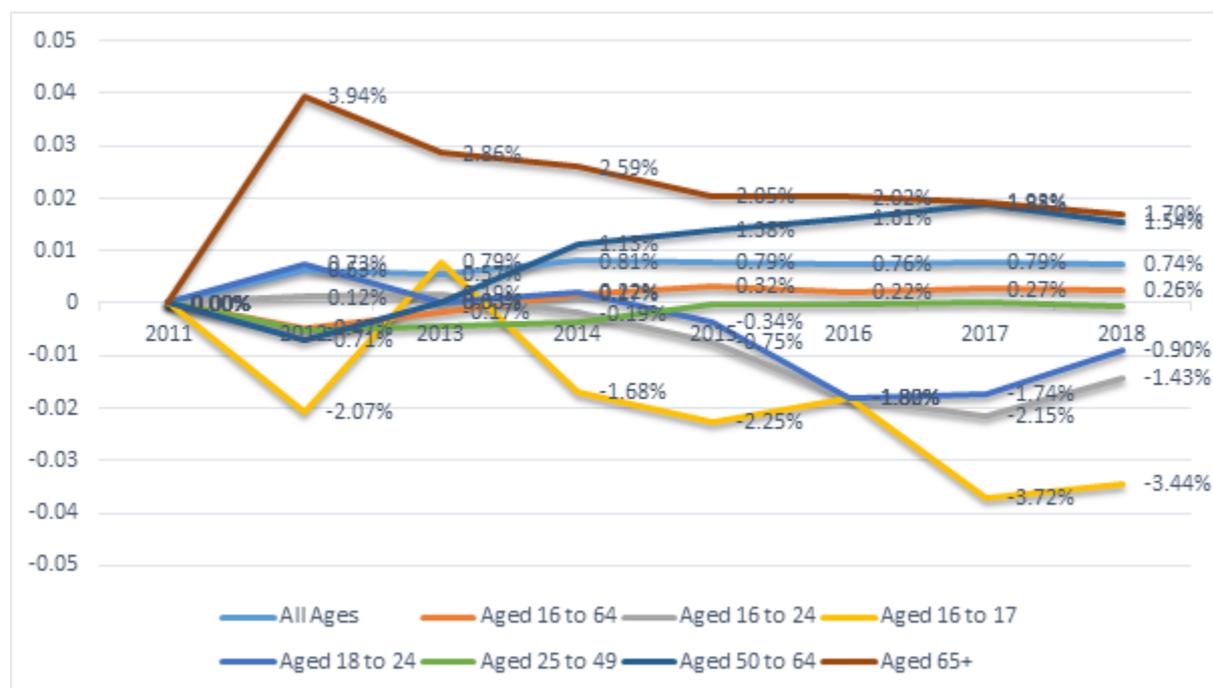
In this chapter we review key aspects of the Heart of the South West Economy:

- Demography
- Output and Productivity
- Business Demography and Competitiveness
- Entrepreneurship Outputs
- Innovation Outputs
- Sector Specialisms
- Labour Market

Demography

There were 1.75m residents living in Heart of the South West in 2018, 58.9% of which were of working age (i.e. aged 16 - 64). This compares with 60.4% of SW residents being of working age, and 62.7% UK-wide. Heart of the South West's total population was 5.2% higher in 2018 than in 2011 (v. SW 5.6% and UK 5%), but its working age population had only grown 0.6% over the same period, compared to 1.7% across the South West and the UK.

Figure 4. Population growth by age group, Heart of the South West LEP, percentage change per annum, 2011 to 2018



Source: Population Estimates – Office for National Statistics, 2019

Looking across age groups, 10% of Heart of the South West's population was aged 16-24 in 2018 (10.5% SW, 10.7% UK-wide). At the same time, Heart of the South West had a higher proportion of residents aged 65+ (24%, v. SW 22% and UK 18.3%) and a significantly lower proportion aged 25 to 49 (28.1% v. SW 29.9% and UK 32.9%). Heart of the South West's total population grew by an average of c0.7% per annum between 2011 and 2018, and its working age population growing at approximately 0.2% p.a.

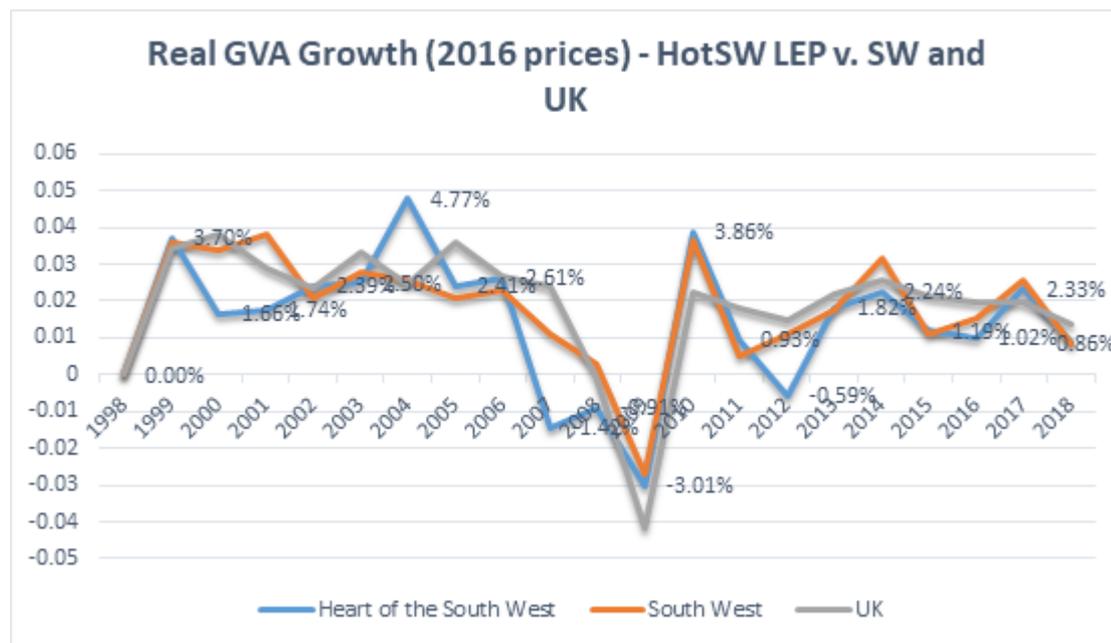
Its population aged 25-49 has been fairly static over the period, remaining at close to 0% growth for most years. The age group 16 to 24 has been in a steady decline year-on-year, driven mostly by declines in the 16-17 age group, but also decline in the 18-24 group was also in decline. Positive growth was only seen in the groups aged 50-64, and most significantly in those aged 65+.

This indicates potential tightness in Heart of the South West's labour market, driven by an ageing population and a weak pull effect for young and middle aged workers, with potential implication for skills shortages in high-skilled and mid-skill occupations, as well as skilled trades.

Output and Productivity

The Heart of the South West LEP economy was valued at £36.7bn in nominal terms in 2018. In real terms (i.e. over and above inflation), its Gross Value Added (GVA) stood at £35.5bn, and GDP was £40.3bn in the same year. This ranks Heart of the South West LEP 17 of 44 enterprise regions in the UK on the size of the economy (real GVA), or 16 of 38 England LEPs; larger than the West of England LEP and comparable to Sheffield City Region and New Anglia LEP.

Figure 5. Real GVA growth (2016 prices); Heart of the South West, South West and UK; 1998 to 2018

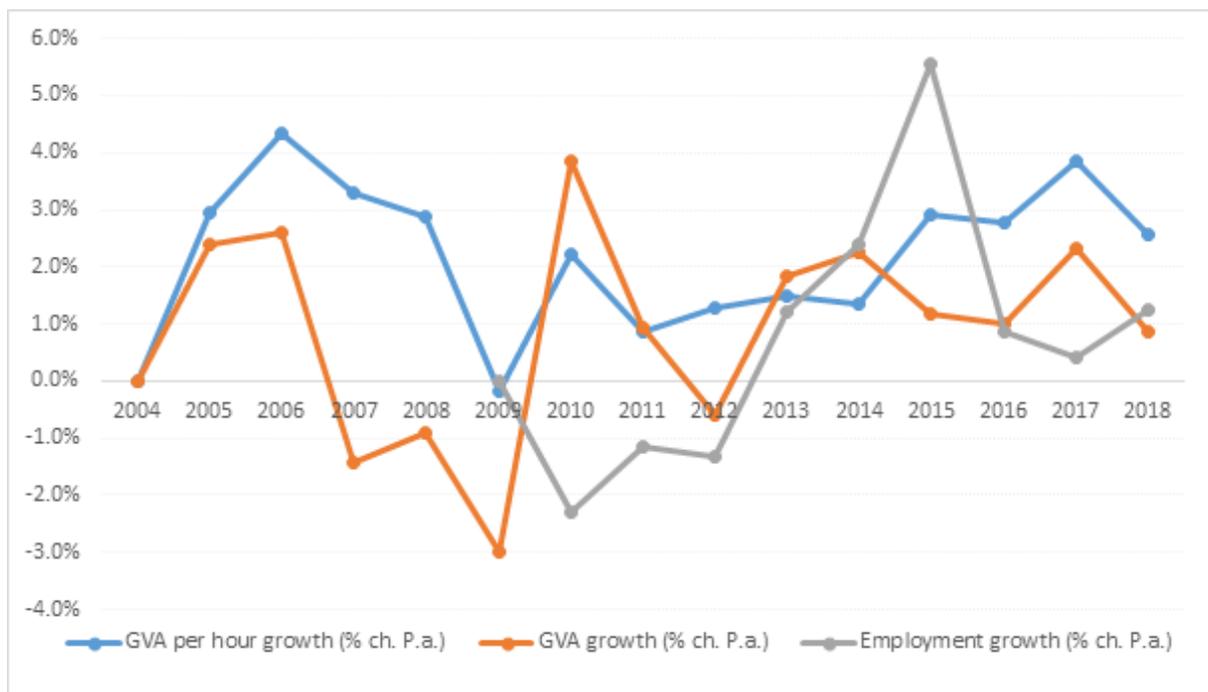


Source: Regional Gross Value Added (Balanced) – Office for National Statistics, 2019

The current value represents a 9.2% real growth from 2011, which is slower than the UK average growth of 14.5%, or South West regional growth of 12.7% over the same period. The last year has seen real GVA expand by 0.9%, slightly more than the SW region on average (+0.8%), but not as much as the UK (+1.4%). The highest growth was seen in Somerset (+2%) and Plymouth (+1.45%), whilst Torbay's real GVA had contracted by a significant 7%; and Devon's GVA had grown by 0.9%.

Figure 3 compares Heart of the South West's historic growth in output, employment, and productivity. The chart shows Heart of the South West's real GVA growth to have been predominantly productivity-led between 2004 and 2009, and since 2014. Employment growth had accelerated between 2010 and 2015, and slowed significantly thereafter. This is consistent with the picture around economic activity, which shows Heart of the South West's employment rate to have reached new heights in recent years, being one of the highest employment rates in Europe. This suggests that, as Heart of the South West is approaching its functional rate of full employment, further output growth can only be achieved through growth in the value of each hour worked and through capital investment.

Figure 6. Growth in GVA (real), productivity (nominal) and employment (nominal), Heart of the South West, annual percentage change 2004 to 2018

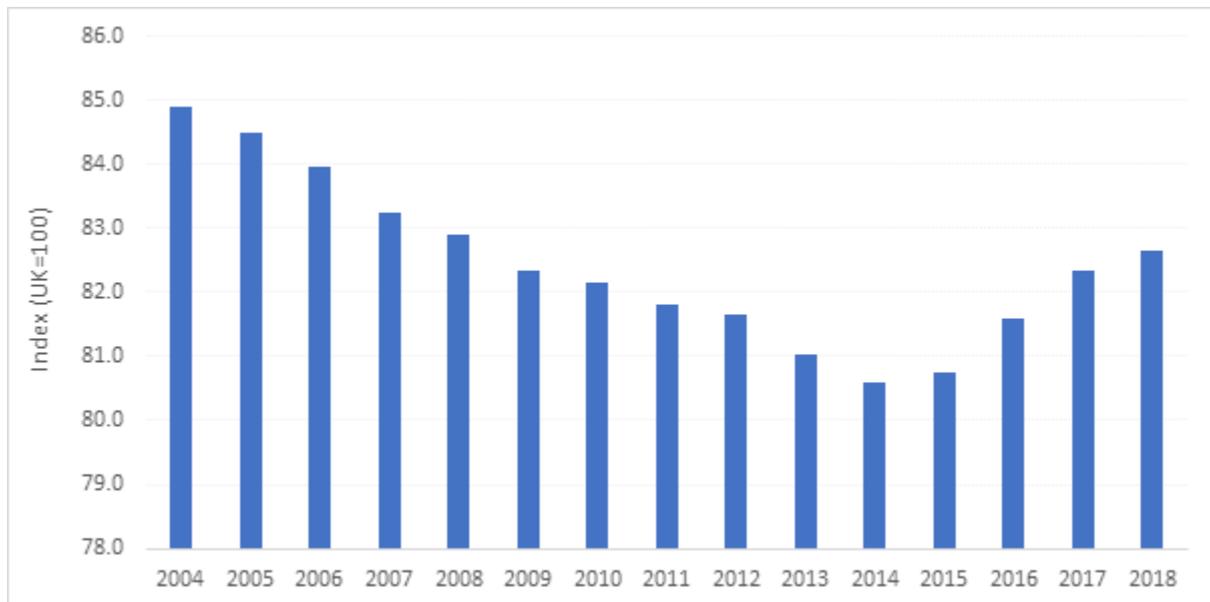


Sources: *Regional Gross Value Added (Balanced)* – ONS, 2019; *Business Register for Employment Survey (BRES)* – ONS, 2019; *Sub-regional Productivity* – ONS, 2020

Productivity growth appeared strong since 2014, and the productivity gap with the UK average has been narrowing, from 80.6% of the UK average in 2014, to 82.7% in 2018. Nominal GVA per hour worked had grown 17.4% between 2011 and 2018, slightly faster than nationally (+16.2%), while the total number of productivity hours worked per week only grew by 5% over the period. 2017 has seen a particularly accelerated rate of growth (+3.9%), before slowing to a more modest growth rate of +2.6% in 2018.

Nevertheless, productivity is still significantly lower than in 2004, when it was registered at 84.9% of the UK average, and the growth in recent years is only the start of the road to recovery in productivity for the Heart of the South West region after a decade of consistent deterioration.

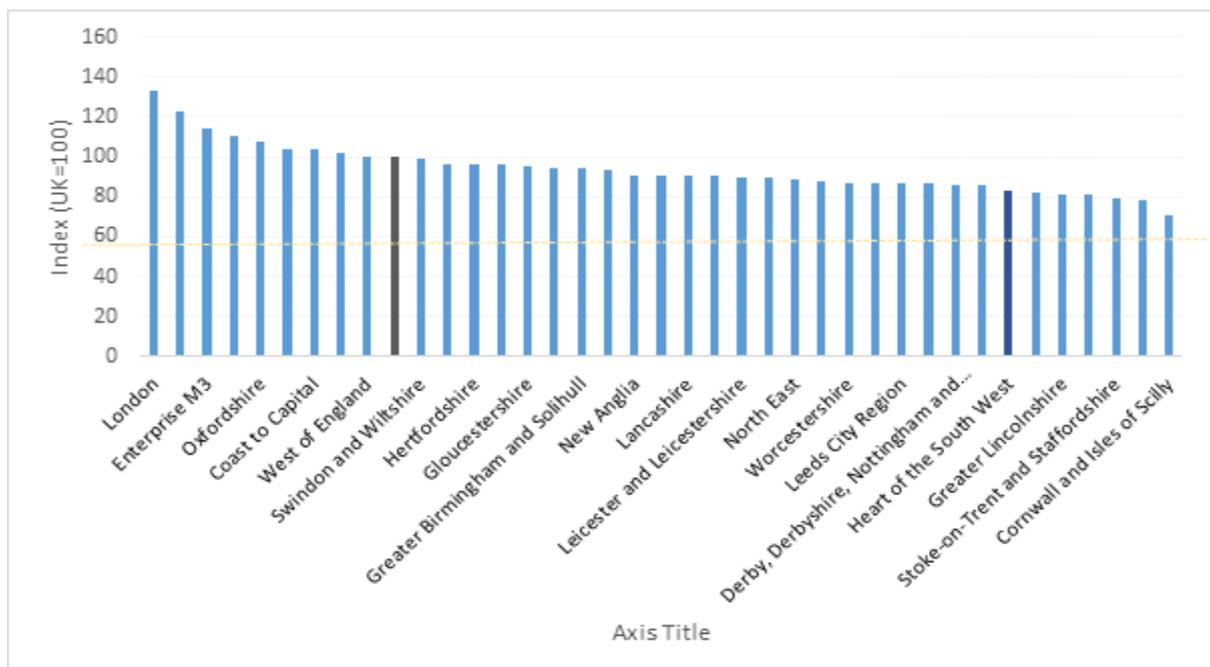
Figure 7. Labour productivity (GVA per hour worked Index, UK=100), Heart of the South West, 2004 to 2018



Source: Sub-regional Productivity – Office for National Statistics, 2020

Moreover, as shown in Figure 8 below, Heart of the South West's productivity is not only still more than 17% below the national average, but it is also one of the lowest of all LEP regions in the country, in line with performance in parts of the North.

Figure 8. Labour productivity (GVA per hour worked Index, UK=100), LEP rankings, 2018



Source: Sub-regional Productivity – Office for National Statistics, 2020

Partly explaining the productivity under-performance is the regional industrial structure. As evidenced in the chart overleaf, Heart of the South West has relatively lower representation of economic activity in high-productivity sectors such as professional services (Heart of the South West 5.1% of area GVA, v. UK 8%), digital (Heart of the South West 3.6% of area GVA, v. UK 7%) and financial and insurance services (Heart of the South West 1.7%, v. UK 6.9%), and a higher reliance on public sector services, primary industries such as agriculture & fishing and utilities, tourist-related industries, and manufacturing.

Figure 9. Real Gross Value Added (CVM, 2016 prices) by industry, Heart of the South West and UK



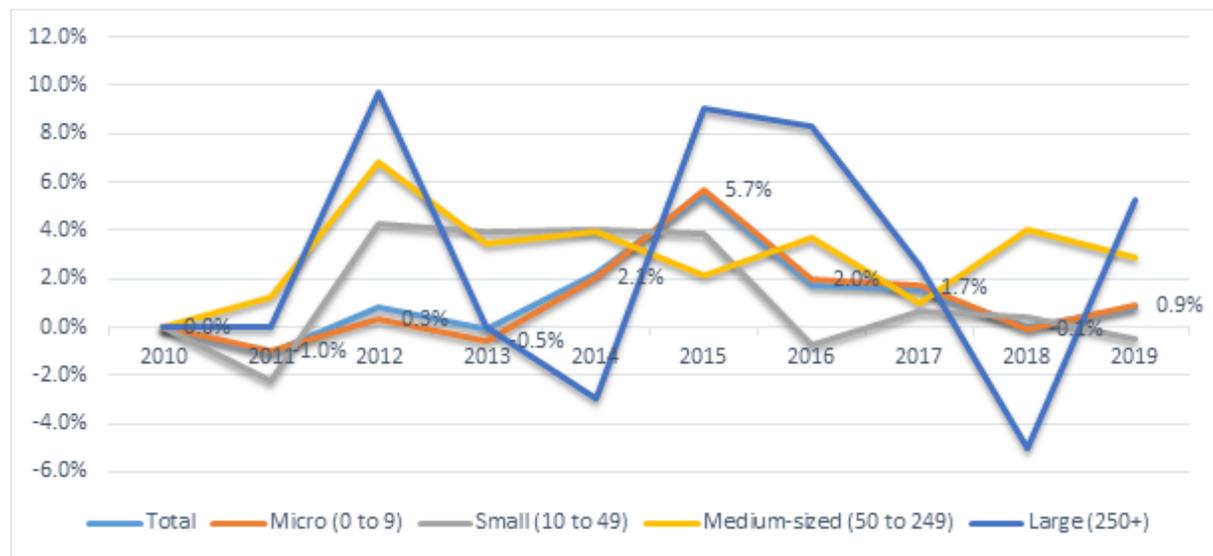
Source: Regional Gross Value Added (Balanced) – Office for National Statistics, 2019

Business Demographics and Competitiveness

There were 72,080 unique enterprises operating in Heart of the South West in 2019, and 84,950 local units (one enterprise may have multiple local units/ workplaces). Net enterprise growth was +0.8% on 2018, and +13.2% between 2011 and 2019 (compared to 1.8%, and 30.6% UK-wide; and 1.2%, 19.2% across the South West). The growth in local units is lower, suggesting that business growth over the respective periods was achieved through an expansion in the number of enterprises, not only expansion in the number of workplaces of existing enterprises.

Moreover, Figure 7 shows that the strongest consistent growth over the period was in enterprises of medium size (i.e. employing 50 to 249 employees); note that the growth in large enterprises appears more volatile and more dramatic because the number of large companies in the region is of a smaller scale.

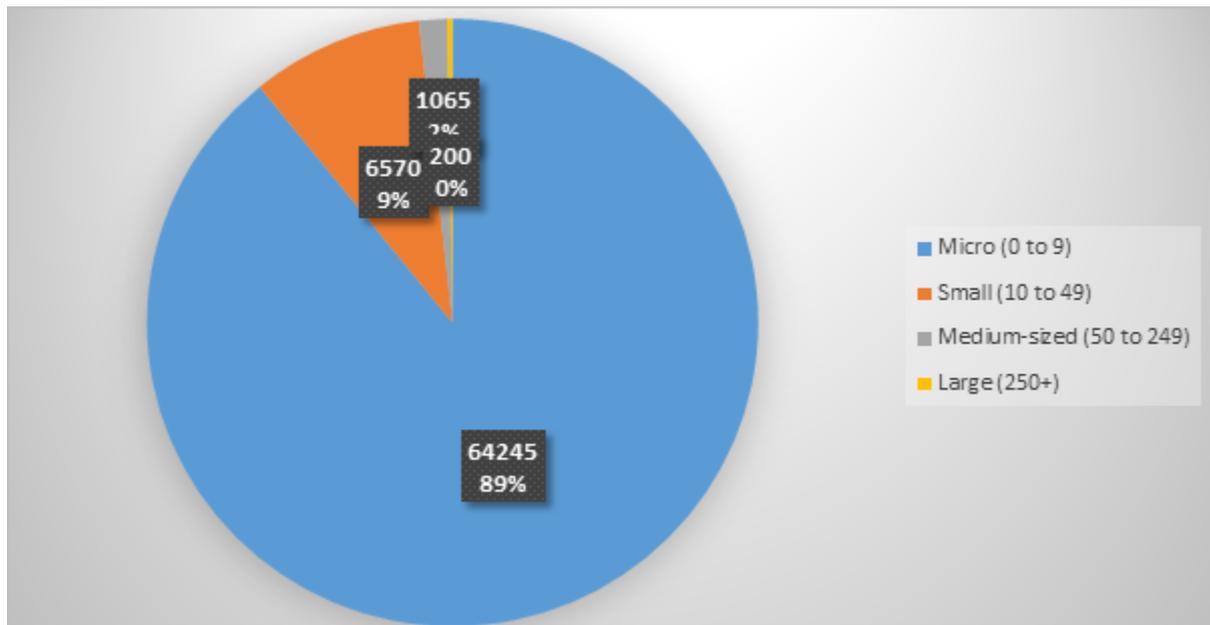
Figure 10. Change in number of enterprises by employment size band, Heart of the South West, annual percentage change, 2010 to 2019



Source: UK Business Counts – Office for National Statistics, 2019

Looking at the make-up of the business stock in 2019, 89.1% of Heart of the South West enterprises were micros (i.e. employing up to 9 people), 9.1% were small (employing 10 - 49 people), 1.5% were medium-sized (50 - 249), and 0.3% were large (250+ employees). This is very similar to the national make-up, except for a larger proportion of small businesses and a slightly smaller proportion of large enterprises.

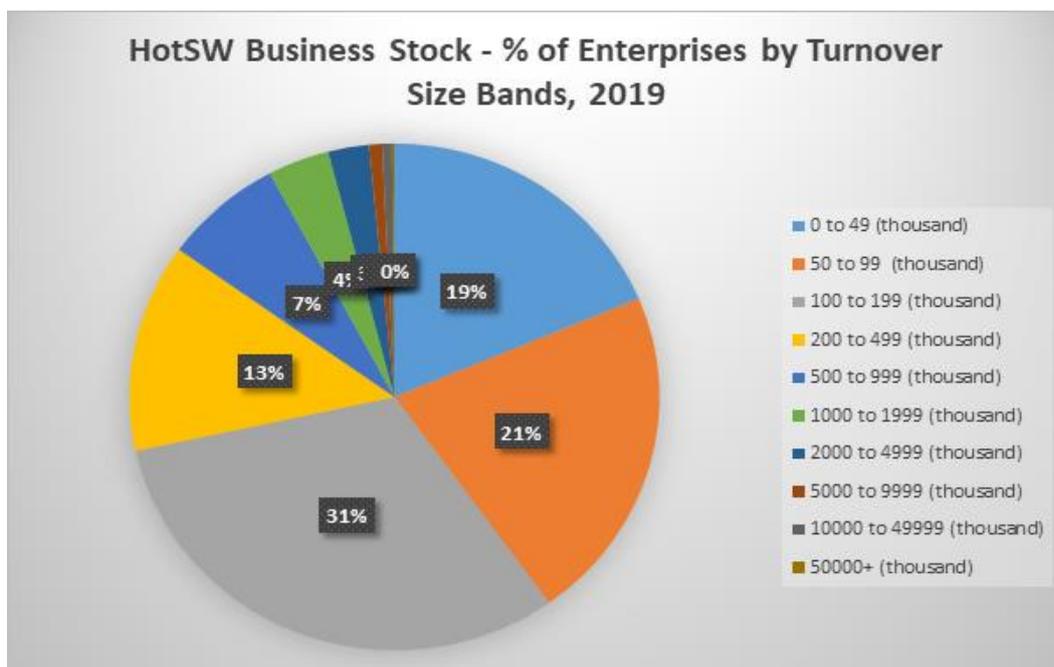
Figure 11. Enterprises by employment size band, Heart of the South West, 2019



Source: UK Business Counts – Office for National Statistics, 2019

Moreover, 84.9% of Heart of the South West enterprises had a turnover of up to £499k (compared to 83.5% nationally and 84.5% regionally); 7.3% had a turnover between £500k and £999k, 6.7% a turnover between £1m - £4.99m, 1.4% between £5m and £49.99m, and 0.1% a turnover in the region of £50m+ (v. 0.3% UK-wide and 0.2% SW-wide).

Figure 12. Enterprises by turnover size band, Heart of the South West, 2019

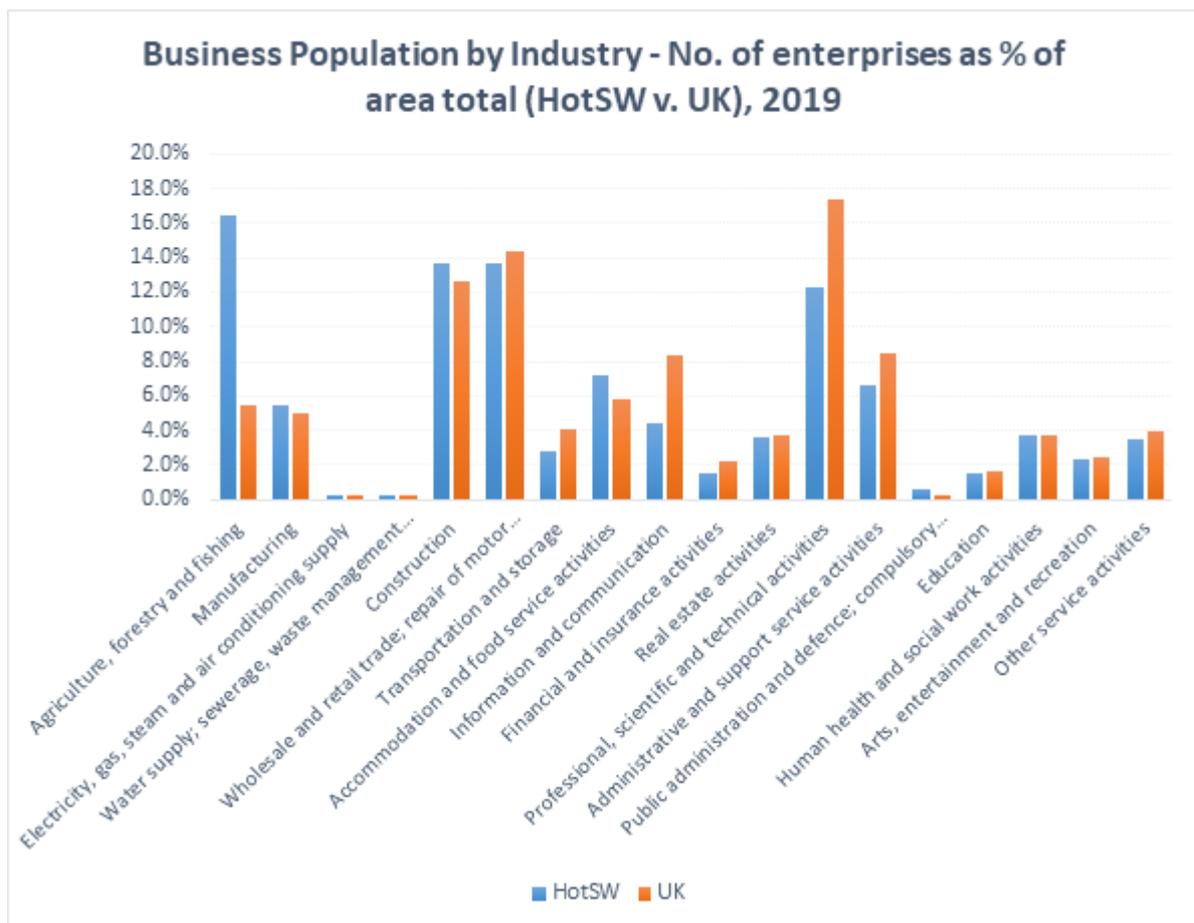


Source: UK Business Counts – Office for National Statistics, 2019

Furthermore, a notably high proportion of Heart of the South West's business base were found in Agriculture, Forestry & Fishing in 2019 (16.5%, v. 5.5% UK-wide); this share is not mirrored by the GVA share in the industry given the low-productivity nature of the activity. Heart of the South West also has an above-average share of Construction enterprises (13.6% of the business population, v. UK 12.6%) and enterprises in the Accommodation & Food Services (7.2%, v. UK 5.8%), reflecting the larger tourism sector in the region. At the same time, Heart of the South West's share of enterprises in Professional, Scientific & Technical activities is considerably lower than nationally (12.3% of the area total, compared to 17.4% nationally), as is the share in the Information and Communication industry (4.4%, v. UK 8.3%).

The region has a slightly higher share of Manufacturing businesses than the national average (5.4% v. 5.1%), however this hides the large share of output and employment concentrated in this industry that is predominantly dependent on a small number of large enterprises; this is even more pronounced in certain sub-regional authorities, such as Plymouth and Somerset, where corporates in specialised areas of manufacturing (defence and aerospace) support much of the supply chain across the region.

Figure 13. Business population by industry, Heart of the South West and UK, share of all enterprises in each sector, 2019



Source: UK Business Counts – Office for National Statistics, 2019

Entrepreneurship outputs

Business start-up rate and churn

The evidence shows relatively low rates of business dynamism across the LEP area. In 2018, there were 9.9% births relative to the total business stock across Heart of the South West; this compares with 10.1% SW-wide, and 13% on average across the UK. As an alternative measure, there were 63.3 business births per 10,000 working age residents across Heart of the South West (v. 71.2 SW, and 91.4 UK-wide). Heart of the South West's business churn rate was also lower: 1.08 births for every death, compared with 1.09 and 1.13 across the SW, and UK respectively.

Business density

Reflecting the geographical characteristics of the region, business density within Heart of the South West is comparatively lower than many other parts of the country. Heart of the South West's business density varies significantly at the local authority level, with urban hotspots seeing higher concentrations of business activity, while much of the rest of the region sees rather low levels of business activity. On the whole, Heart of the South West's business density stood only slightly below the regional (South West) average in 2018, although more significantly below the UK average: Heart of the South West had 641.7 businesses per 10,000 working age residents, compared to 687.1 SW-wide, and 705.8 UK-wide.

Firm-level productivity

Little data exists about firm-level productivity at the LEP level although statistics published by the ONS shows that businesses that were larger, older and foreign-owned were more productive, on average in Great Britain, in 2017². Regression analysis suggests that a foreign-owned business is around 18 % more productive than an equivalent domestically-owned business.

Business survival rates

Further evidence of a comparatively lower business dynamism across Heart of the South West is reflected in business survival rates: short-term (1-year) survival rates were higher in Heart of the South West (90.5% of new businesses had survived in 2018, compared with 87.8% SW and 89% UK); the 3-year survival rate of Heart of the South West businesses declines to 57%, which is still considerably higher than the UK average of 55.3%, but lower than the regional average of 59.4%; the 5-year rate is in line with the UK average (42.2% v. UK 42.4%), but below the regional rate of 45.6%.

Ownership & management practices

Research shows that the foreign owned companies are more productive than domestically owned firms³ and their presence boosts domestic labour productivity. This is because foreign-owned companies: invest more in R&D; they are better managed; and they collaborate with other organisations and promote the diffusion of ideas⁴. According to the ONS, 50 % of the £22.2 billion invested in businesses in R&D in the UK was invested by foreign owned businesses in 2016⁵. A higher proportion of foreign owned firms engage in R&D activity than domestic companies and they spend more on R&D – even when controlling for size, sector and whether they export. Consistent with that spending foreign-owned firms are also more likely to introduce new products and/or processes than domestic firms. Foreign-owned firms' higher productivity is thought to reflect better management practices⁶.

Despite accounting for an equal share of R&D investment in UK businesses, foreign-owned businesses account for a very smaller proportion of VAT and/or PAYE based enterprises. LEP level statistics published by the ONS show that 240 of the 70,400 enterprises in the Heart of the South West in 2016, were foreign-owned. At 0.3 % of the total business population, the Heart of the South West has one of the lowest shares of foreign-ownership of all LEP areas. The

proportion is only lower in Cumbria and Cornwall & the Isles of Scilly. By contrast, foreign-owned firms account for a significantly higher share of enterprises in Thames Valley Berkshire (2.2 %) and London (2.1 %). However, even in these LEP areas, foreign-owned firms are in the minority. As these firms tend to be larger however than domestic firms they account for a disproportionate share of national output (28 %)⁷.

In addition to having a lower proportion of foreign-owned firms, the LEP area is also likely to have a higher share of family-owned businesses than the national average. Oxford Economics estimates that there were 4.8 million family-owned businesses in the UK in 2017, which is equivalent to 85 % of all private sector firms in the Country⁸. Nationally, the proportion is highest in the South West of England (90 percent), East of England (89.5 %) and Yorkshire and the Humber (89 %) and lowest in the North East (76 %) and Northern Ireland (78 %). The prevalence of family-owned SMEs is significant because while they remain important drivers of innovation in the UK, they are less likely than non-family firms to innovate⁹. ONS' analysis of the results of the Management Practices Survey of manufacturing enterprises in Great Britain found that management scores were lower among domestic firms than multinationals and were lowest for firms that were family owned *and* family managed. Family-owned companies run by non-family members had similar management scores to multinationals¹⁰.

Export propensity

In 2018 Heart of the South West's businesses exported £3,698m in goods to international markets - this represented 10.1% of the demand for its total output (10.1% of GVA), which is significantly lower than the regional and national averages of 15.4%, and 17.8% respectively. In addition, in 2017 it exported £2,831m in services (7.7% of its GVA, v. SW 9.7% and UK 14.6%). This shows a considerably lower propensity to export internationally, based on the total value of exports. Note that data for trade in services and trade in goods are not both available for 2018, and they come from separate data sources.

When looking at the number of exporting businesses (note that this data is only available for goods exports), 5.8% of Heart of the South West's businesses exported goods to EU markets, and 4.3% exported to non-EU markets. This is higher than the regional average rates of 4.8%, and 3.1% respectively, suggesting that the value of exports per business is lower.

Scale-up businesses

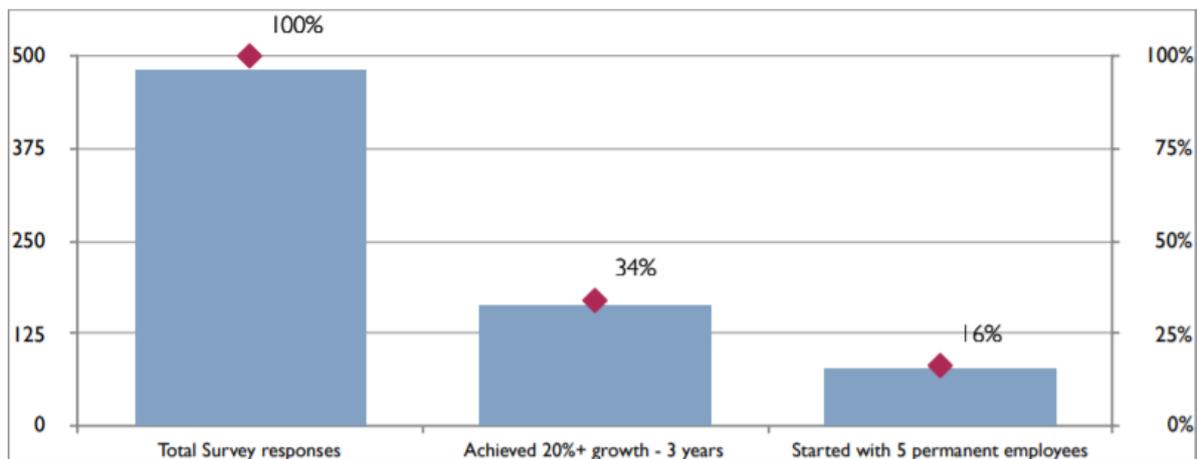
Heart of the South West firms appear to have a lower propensity to scale up, suggesting that business revenues tend to see more stable, linear growth; this is a characteristic indicative of a low incidence rate of Innovation-Driven Enterprises (IDEs) relative to the typical SME population. Statistics derived from the ESRC's UK Local Growth Dashboard reveal that only 1.5 % of Heart of the South LEP start-ups had scaled from turnovers below £500K per annum to turnovers exceeding £1m over the period 2015 to 2018, compared to the LEP average of 2 %¹¹. Furthermore, only 5.5 % of all surviving enterprises in the Heart of the South West had scaled their turnover from between £1-£2m to more than £3m over the same period. This compared to the LEP average of 7.6 %.

Moreover, while business density in Heart of the South West is more-or-less in line with the UK average, the density of high-growth enterprises is significantly below the UK average density, and has declined at a steeper rate than nationally over the recent years.

In 2018, 4.8% of Heart of the South West's business population were high-growth firms, v. UK 6.1% (based on the OECD 20% threshold); 12.6% were considered to be high-growth firms under the OECD 10% threshold. This placed Heart of the South West in the bottom quarter of LEPs on both 10% and 20% thresholds on this measure. Appendix 1 shows comparisons with other regions.

Additional research¹² surveying 483 Heart of the South West businesses found that 34% of respondents have achieved growth of over 20% over the last 3 years. It is important to note, however, that it is likely that there is a positive skew in the responses linked to self-selection of businesses that are more likely to be scale-ups, therefore the figure is likely to be higher than in reality.

Figure 14. Percentage of enterprises surveyed achieving growth of more than 20% over the last 3 years, Heart of the South West, 2017

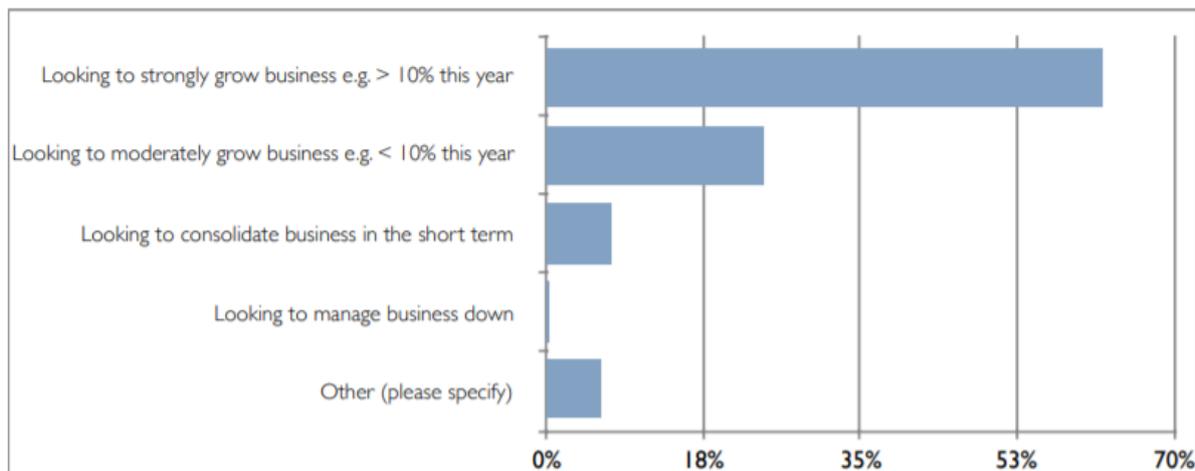


Source: Ash Futures & South West Growth Service – Going for Growth: Scale-ups Research, 2017

Firstly, in terms of identifying how many of the respondents could be classified as 'scale-up', businesses were asked whether they had achieved an average of 50% growth in turnover or employees over the last three-year period (relating to the adjusted BEIS scale-up definition). Approximately 34% (164 businesses) had achieved this level of sustained growth. Those businesses were then asked whether, at the start of that period in 2014, they had more than 5 permanent employees – 51% (79) did so.

The vast majority of businesses intended to grow their business strongly over the next 12 months. In terms of how these businesses intend to achieve their growth intentions, it appears that this could be through a variety of means, although there was some emphasis on reaching new clients in existing markets. There was also relatively strong intention (from almost half of respondents) to introduce new products and/or services to drive growth. Intentions to move into both UK and overseas markets were more muted, with only 16% of respondents having intentions to grow overseas. It is interesting to note that 34 respondents (8% of the total) intended to grow their business through mergers and/or acquisitions.

Figure 15. Business ambitions, Heart of the South West, 2017



Source: Ash Futures & South West Growth Service – Going for Growth: Scale-ups Research, 2017

Innovation outputs

The following sections explore who innovates in the Heart of the South West and the extent to which local enterprises are more or less likely to innovate than the national average.

Innovation active enterprises

In 2016-2018, almost two-fifths (38 %) of UK businesses were 'innovation active'. This is a decrease compared to the 2014-16 when almost half (49 %) were similarly described and is the lowest level since 2008-10 (37 %)13. Characteristics most commonly associated with being innovation active include:

- Size: Large businesses (with 250 or more employees) were more likely to have innovated (49 %) than SMEs¹⁴ (38 %);
- Sector: Enterprises engaged in the manufacture of electrical and optical equipment (63 %) and the manufacture of transport equipment (59 %) were the most innovative businesses. Those involved in accommodation and food services (23 %) were the least likely to have innovated.
- Region: the South West had the third highest percentage of innovation active businesses (40 %) behind the South East (42 %)

While LEP level results of the 2016-2018 UK Innovation Survey have yet to be released analysis of previous years' data suggests that firms in the Heart of the South West were among the least likely to be "innovation active" in 2015 (DBEIS, 2017). At that time, around half (51 %) of local firms indicated that they had engaged in any of the innovative activities explored in the survey (the UK average was 55 %). This percentage is significantly lower than the best performing LEP areas on this measure (Cheshire & Warrington, 73 % and Gloucestershire,

70 %). Only Leicester and Leicestershire has a lower proportion of 'innovation active' firms than the Heart of the South West at that time.

R&D is one of the main ways in which firms innovate. As the Enterprise Research Centre observes: "Not only can R&D provide the new knowledge or technological discovery which might drive innovation. There is also substantial evidence that R&D personnel are important in enabling firms to identify external knowledge or technologies which may help to develop the firm's own innovation"¹⁵. Their analysis of LEP level data from the 2017 UK Innovation Survey reveals that 21 % of firms in the Heart of the South had undertaken R&D, placing the LEP area 21st in the ranking of LEPs. The best performing LEP area on this measure was Oxfordshire, where 40 % of firms were undertaking R&D. The researchers identified a strong regional pattern on this measure with some of the highest reported figures consistent with the 'arc of innovation'¹⁶ identified in their previous analysis of earlier UK Innovation Survey data.

The UK Innovation Survey also explored innovation outcomes and sales. More specifically:

- Firms ability to successfully introduce new or improved products and services
- The proportion of firms reporting the introduction of new to the market innovations (either products or services)
- The percentage of sales which are derived from innovative products or services
- The proportion of firms introducing new or significantly improved processes

When ranked against other the LEPs on firms' performance the Heart of the South West features mid-table on most: ranking 20th for sales of innovative products and services (37 %), 23rd for process innovation (17 % of firms). Its highest ranking was for the percentage of firms introducing new to the market innovations (10 %, 13th place). However even on this measure, firms in the best performing LEP area (Oxfordshire) were twice as likely to have introduced new to the market innovations as firms in the Heart of the South West.

LEP benchmarking of earlier UK Innovation Survey data (2008-10) published by the Smart Specialisation Hub¹⁷ ranks the Heart of the South West 14th for the number of firms engaged in product or process innovation. Unsurprisingly, the LEP areas that performed best on these measures had large business populations: London (417), South East (173) and Leeds City Region (156).

Patents

Academic research has found that use of patents is associated with better use of knowledge by firms, more knowledgeable transfer between firms and universities and improved knowledge creation, enhanced prospect of company survival and growth in the case of small firms (DBIS, 2015)¹⁸.

Patents, however, only offer a partial insight into the way in which firms protect their technical innovations. Only 15 % of large firms use patents and 7.5 % of SMEs do so. Statistics collated by Eurostat¹⁹ reveal that inventors in the Heart of the South West submitted 39.45 patent applications to the European Patent Office in 2012 valued at almost

€1.9m in nominal GDP. Patenting rates are low by national and standards: Devon - the only local NUT2 area for which data is available – submitted 46.5 patent applications per million active population. This is considerably lower than the UK rate of 132 applications per million active population

Analysis of UK patents conducted by the EIU and Impact Science on behalf of the DBIS revealed that unsurprisingly, LEP areas with research intensive universities tended to have greater numbers of inventors although patterns in the distribution of patents suggests that the extent of innovation in LEP areas is not entirely dependent on the presence of publicly-funded HEIs. Overall, the Heart of the South West ranked in the upper half of the table for inventor numbers across all four patenting time periods explored in their analysis. Greater Cambridge & Greater Peterborough was the highest ranking LEP area on this measure.

Analysis of IPO data for 2015 to 2017 by the Smart Specialisation Hub 20 benchmarks LEPs according to the number of inventors on patents across various Technology Areas. While the Heart of the South has fewer inventors than the top performing LEP for each technology area, it was closest for optics (0.56) and civil engineering (0.44) and to a lesser extent: textile and paper machines (0.25), thermal processes and apparatus (0.25), electrical machinery apparatus energy (0.25), measurement (0.24) and Transport (0.23)²¹.

Interactions between HEIs and business

The research literature suggests that collaboration can deliver significant benefits for innovating firms²². According to the UK Innovation Survey, almost one-third (31 %) of innovating firms²³ in the Heart of the South West had collaborated at any point during the period 2014 to 2016. This propensity to collaborate places the LEP mid-table (20th out of 39 LEP area) when LEPs were ranked according the proportion of innovating firms who had engaged in this activity. Local firms, however, were considerably less likely than those in the highest performing LEP areas (Northamptonshire and Oxfordshire, both 48 %) to have collaborated on innovation.

Knowledge Transfer Partnership projects are an important form of employer engagement bringing employers and academics together to solve business problems. The University of Exeter has 12 active KTPs in 2018/19 and 7 new starts. Up from 7 and 4 respectively, in 2014/15.

Patents filed by or on behalf of a HEI provider

Focusing solely on disclosures and patents filed by or on behalf of a HEI provider, latest data reveals that there were 172 active and live patents (the 'cumulative patent portfolio') originating from HEIs in the Heart of the West in 2018/19²⁴. The patent portfolio has grown slowly but reasonably consistently over the last 5 years although the 'pipeline' of new patent applications filed has slowed in each of the last four years (from 52 in 2015/16 to 18 in 2018/19).

Table 1. Disclosures and patents filed by or on behalf of Heart of the South West HEI providers 2014/15 to 2018/19

	2014/15	2015/16	2016/17	2017/18	2018/19
Cumulative patent portfolio	125	134	132	150	172

Source: HE-BCI

Business and community interaction services

The Higher Education Business and Community Interaction Survey (HE-BCI) measures the volume and value of interactions between UK HEIs and business and the wider community. HEIs in the Heart of the South West generated around £30m in revenue through these activities in 2018/19 the majority of which was derived from contract research (£22.5m or 75%) with relatively smaller sums from consultancy (£4.9m) and the hire of facilities and equipment (£2.6m).

Contract research is particularly interesting in this context because it involves the generation of new knowledge – through basic or applied research or experimental development – and is therefore arguably a more sophisticated form of R&D⁵. The value of contract research projects generated locally has increased in each of the last four years but despite this steady growth remains slightly below that recorded in 2014/15. This is in contrast to growth nationally over the full five year period. It is not clear why contract research revenues fell across the Heart of the South West between 2014/15 and 2015/16. Contract research is a particularly important locally, accounting for 75% of business and community revenues compared to 65% across the UK although the average value of contract research projects locally is lower (£29,240) than the national average (£39,230).

Focusing solely on business engagement with SMEs and other commercial businesses⁶, HEIs in the Heart of the South West generated £9.69m through the provision of consultancy and contract research services through 825 projects in 2018/19. This income has been growing broadly in line with the national average since 2015/16 although the local growth rate dipped below the UK figure in the last year for which data is available⁷. As a consequence of these trends, the Heart of the South West's share of UK total commercial enterprise income has remained stable at around 1 per cent over the last five years. At £11,750, the average value of projects in the Heart of the South West is nearly 50% higher than the national average (£7,960).

Exploring the composition of this income reveals that SMEs are a particularly important source of consultancy and contract research revenues locally: in 2018/19 almost half (48 per cent) of this revenue was generated through services provided to SMEs compared to 27%, nationally. SMEs locally accounted for almost three-quarters (72%) of projects and tended to be of higher value in the Heart of the South West, on average, than the UK as a whole (£7,920 compared to £2,710).

⁵ See https://www.ed.ac.uk/files/atoms/files/consultancy_vs_research_november_2016.pdf for definition.

⁶ The figures above include consultancy and contract research provided to 'community', public or 'third' sector organisations.

⁷ Growth in the Heart of the South West was 5% compared to UK growth of 7% between 2017/18 and 2018/19.

Other enterprises (i.e. large companies) by comparison generated a significantly smaller share of consultancy and contract research revenue locally (52%) than the UK average (73%). The average value of projects with large enterprises was also lower than the UK average (£21,480 compared to £21,480).

Analysis undertaken by the Smart Specialisation Hub reveals that HEIs in the Heart of the South West performed well against other LEP areas in terms of the value of consultancy and contract research provided to SMEs and large businesses between 2014/15 and 2015/16²⁵. The average annual value of these interactions was £27.2 million (with 84 % of this derived from contract research) over the period placing the Heart of the South West 7th in the LEP hierarchy on this measure. London, Greater Cambridge & Greater Peterborough, West of England and North East LEPs topped the LEP rankings for the total value of commercial research contracts.

2.1.1.1 Income from intellectual property

Intellectual property (IP) is a useful indicator of the added value created by higher education and includes patents, copyright, design registrations and trademarks. In 2018/19 HEIs in the Heart of the South West generated £421,000 in revenue from their IP comprised of £363,000 in licenses income²⁶ and £58,000 from the sale of shares in spin-off companies. This license income was generated by 8 licenses held by the University of Exeter. Thus, only a small proportion (11 %) of the 74 licenses held by institutions in the Heart of the South West generated an income that year. Most of the license income (67 %) was generated through interactions with large companies. Revenue is set against £325,000 in costs. IP revenues (and costs) vary significantly from year-to-year with no clear trend over the last 5 years: revenues were highest in 2015/16 when they reached £1.2m but were lowest in the years before (£205,000) and after (£215,00) this.

Spins-offs and start-ups

Spin-offs are companies set up to exploit intellectual property that has originated from within Higher Education Institutions. HESA statistics differentiate between spin-offs with some HE provider owners and formal spin-offs that are not HE provider owned (but are set-up based on intellectual proportion that has originated from within the HE provider but where the provider has released ownership, usually through the sale of shares and/or intellectual property). During 2018/19, 34 active firms are known to have 'spun-out' of HEIs in the Heart of the South West, most commonly the University of Exeter (21) but also the University of Plymouth (13). Together, these firms generated almost £20.9m in turnover, supported almost 200 FTE jobs and had attracted over £1.6m in external investment in that year. The number of new spin-offs being registered each year is small – five in 2018/19 - but has increased modestly in each of the last four years.

Higher Education is also a source of new businesses started by staff, students or graduates. According to HESA, 139 firms started by either staff (19) or more commonly, graduates of HEIs in the Heart of the South West (120), were "active" in 2018/19²⁷. In that year, these firms are estimated to have generated almost £30.8 million in turnover and supported almost 500 FTE jobs. The value of external investment received by staff or graduate start-ups has risen substantially in recent years: from £10,000 in 2014/15 to more than £5.6 million in 2018/19. The number of newly registered companies peaked at 38 in 2016/17 but has fallen in each of the last two years with the number of start-ups registered in 2019/18 less than half that reported in during the peak (at 18). The University of Plymouth has generated more staff and graduate start-up than the University of Exeter in each of the last five years.

Focusing solely on graduate start-ups: 15 newly created firms were registered in 2018/19 bringing the cumulative total of active graduate starts ups to 120. Graduate start-ups generated almost £30.7 million in turnover and 482 FTE jobs in 2018/19. As such, graduate

start-up made a much more significant contribution to turnover and employment than staff start-ups²⁸. While the number of new graduate start-ups has fallen in each of the last two years (and the number of active firms has fallen in the last year), external investment, turnover and employment derived from all active graduate-starts has generally increased year-on-year.

While the HE-BCI data is not routinely published at the LEP level analysis of 2015/16 data published by the Smart Specialisation Hub suggests that the Heart of the South West ranked mid-table for the number of business start-ups that had survived for at least 3 years for that year. The figure has increased to 55 by 2018/19 but this cannot be benchmarked against other LEP areas.

Table 2 Number of active graduate start-ups, 2015/16

Ranking	LEP	Number	Benchmark
1	London	879	7.74
2	Lancashire	634	5.59
3	Solent	433	3.81
4	Leeds City Region	243	2.14
5	South East Midlands	218	1.92
19	Heart of the South West	44	0.39
	LEP average	114	100

Source: Smart Specialisation Hub analysis of HEBCI data

Sector Specialisations

Local intelligence reveals Heart of the South West strengths and potential in the following industries: nuclear and related (supply chain) technologies and skills, including new build, decommissioning and defence; photonics and related micro-electronics; certain marine sectors in defence, boatbuilding and renewables; other engineering (such as aerospace and agri-tech) with innovative supply chains and health and environmental technologies that support an ageing population.

Table 3. Location quotients for GVA and Employment, Heart of the South West, 2016

	Specialisation (Concentration) - LQ (GB=1), 2016	
	GVA-based	FTE-based
Advanced Manufacturing & Engineering*	1.30	1.15
Food & Drink	1.15	1.55
Digital technologies	0.52	0.56
Creative industries	0.49	0.48
Agritech industries	0.62	0.64
Marine	1.25	1.14
Defence	8.59	6.77
Medical, health & life sciences**	0.98	0.69
Environmental industries***	1.27	1.00
Photonics & electronics	0.85	0.75
Aerospace	1.07	1.15
Energy (electricity, transmission and distribution)****	1.52	1.64

Source: Advanced Modelling of Regional Economies (AMORE) Tool – Impact, 2018

There are opportunities in supply chain development, through inward and indigenous investment, and in demand creation, through export initiatives (beyond SW and UK) and broader market, skills and technical engagement. Importantly, nuclear provides opportunities in defence, medicine and domestic substitution of imports. In the longer term, there are potential advantages in involvement in fusion research and development of Advanced Modular Reactor (AMR) technologies and facilities.

Our evidence base suggests the potential for concentration on five '**golden opportunities**' for supply and demand integration. These five are:

- Advanced manufacturing (aerospace, photonics and engineering with hubs in, for example, Exeter, Yeovil, Torbay and Plymouth),
- Nuclear services (building, decommissioning and operating power stations centred on the Hinkley Point C project in West Somerset) and other applications, such as medical diagnostics,
- Marine engineering and services (including build and repair, components development and leisure/other services – both east and north of Plymouth),
- Environment (climate and other data services driven across the whole patch with concentrations in Exeter and Taunton),
- Health and social (such as care, genetics and medical trials based in and around Exeter, Plymouth and Torbay, other small towns and rural communities).

There are certain risks that may hold the Local Industrial Strategy back. These risks include: policy/exchequer uncertainty over funding and price/cost overruns from being first in the next 'new build' wave, supply chain dislocation and benefit, need to collaborate closely with other UK regions, difficult and uncertain cost-benefit assessments on a range of related environmental issues.

Despite the risks; three leading areas of local activity that are likely to be innovative, entrepreneurial and competitive and also distinct, long-term and productive are identified:

- *Digital futures*: big data, environmental and health technologies and services, with key assets,
- *High-Tech engineering*: mainly advanced marine and aerospace manufacturing, photonics and defence,
- *Clean energy*: associated with technical development for nuclear and offshore renewables, with a hub at the power station site with wider.

Marine

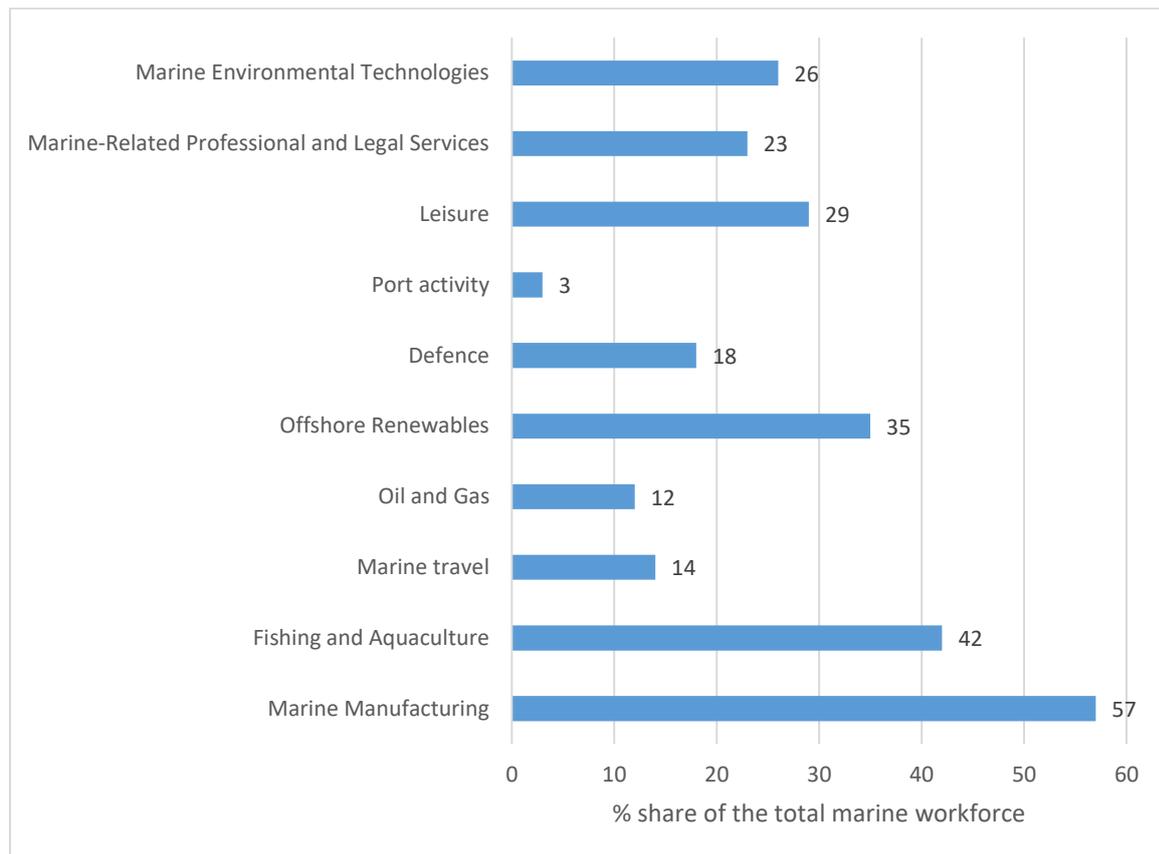
There are 2,789 identified businesses in Marine and Maritime related businesses in the Heart of the South West. The Location Quotient (LQ) of the Heart of the South West is 1.94 which reflects that the marine manufacturing sector is strong and vibrant across the whole geography. The South Coast Marine Cluster's GVA contribution (Marine and Maritime related activities) is £2.54bn, 8% of the UK total.³⁰ Within sector specialisms include marine manufacturing (5.45), fishing and aquaculture (1.82) and offshore renewables (1.36)⁸.

Figure 14 below shows the employment-based LQs for each sub-sector of marine for the South Coast LEP regions. The Heart of the South West LEP region particularly stands out with a

⁸ Source: Wavehill – Marine Inward Investment Study (2017), Employment-related LQs by LEP

high concentration of marine manufacturing employment (57% of the SCMC-wide activity in the sector is based in Heart of the South West), as well as fishing and aquaculture (42% of SCMC activity), and offshore renewables (35% of SCMC activity). Defence is also significant in the region, although this captures only the private-sector defence-related activity; in addition to this, there is significant MoD presence in the region, particularly in Plymouth and Somerset.

Figure 16. Contribution of sub-sectors to South Coast Marine Cluster wide sectoral workforce, Heart of the South West, 2016



Source: Wavehill – Marine Inward Investment Study (2017), Sub-sector employment contribution to the South Coast Marine Cluster for Heart of the South West

Opportunities for the SCMS sector mainly rely on bullish immediate market prospects and turnover projections. While challenges include: access to human resource, Brexit, energy prices, transport links, business rates, foreign competition and access to finance.

The Policy Action Areas pointed out include:

- Scope for prioritisation sub-sectors, e.g. marine manufacturing, marine transport, offshore renewables, environmental technology, fishing, and tourism,
- More targeted engagement on skills needs, develop stronger evidence base,
- Supply chain gaps – opportunities that require further exploration,
- Exhibitions and trade shows key element to promote export markets particularly in light of Brexit (cited by many of our interviewees as a potential challenge for the MMS in the region),
- Continue to expend effort in promoting knowledge transfer from strong R&D base.

Nuclear

The South West of England is home to the first planned new nuclear power station in the UK in 20 years. A great deal of activity is already taking place to ensure that local industry makes the most of this opportunity. The region is also home to other planned new builds, existing generation, and a longstanding defence sector. There are a host of academic establishments, skills and training facilities, nuclear related companies, and supporting functions such as the Office of Nuclear Regulation and UK head offices of Horizon and EDF Energy.

Nuclear technology provides the ability to generate large volumes of baseload power, with very little carbon footprint. In 2008, the UK Government invited energy companies to bring forward plans to build and operate new nuclear power stations in the UK, which heralded a new nuclear industry. This represented a huge change in UK energy policy, signifying the start of the 'nuclear renaissance' in the UK.

There are significant and ever-increasing opportunities within the nuclear sector for both nuclear and non-nuclear suppliers. A number of supplier-specific organisations exist to aid suppliers, particularly SMEs, to meet the requirements of the supply opportunities. On a regional scale, there are opportunities for greater collaboration between civil and defence sectors, especially with regard to waste disposal. This could reduce costs and help meet Government targets.

Recommendations are:

- High priority recommendations include: measuring economic value, sector deal: reuse of future nuclear sites, national supply chain programme, innovation, reducing decommissioning costs, inward investment, exporting and Sharing skills, collaboration between UK LEPs and LAs, cross sector innovation into decommissioning.
- Medium priority recommendations include: construction, generation IV Reactor support, increase high-value training and funding for it, access to finance, collaboration with Supply Chain Lab, understanding real economic benefit, standardisation, and nuclear medicine market study.
- Low priority recommendations include: industrial strategy challenge fund, support for Oldbury's opportunities/procurement/supply chain, delivering a supply chain database and welding capabilities.

Overall, to maximise economic benefit from the nuclear sector, South West companies need greater visibility of supply chain opportunities, and an increased stability in workflow would increase regional participation; as well as addressing skills' shortage. The potential to develop indigenous advanced welding capabilities could have huge benefits across all of the nuclear projects.

Photonics

The South West area has a strong and vibrant cluster in photonics and microelectronics. It's the largest employer in the UK in 'instruments', 'lighting and electrical equipment' manufacturing and in the top 20 regions by employment within these high value sectors in Europe.³¹

The underpinning nature of photonics and microelectronics means it has direct impact to all the priority sectors and society challenges identified in the latest UK Industrial Strategy.

Opportunities in this sector are seen in two folds: Intra-regional collaborations and Inter-regional collaborations:

- **Intra-regional Opportunities** for new local collaborations are most prominent where there are other strong regional sectors in areas that would benefit from greater application of photonics and microelectronic expertise such as: nuclear control and monitoring; marine electronics and aerospace photonics integration
- **Inter-regional Opportunities** are often most successful when there is a common understanding and respect between partners i.e. between regions with similar end market foci (for example the collaboration between Heart of the South West and Scotland in particular aerospace / defence applications).

However, the immediate understanding of the benefits of partnerships may be low, given that some of the most promising applications in these markets may be new to using photonics and unfamiliar with the importance of accessing the Heart of the South West skills. Therefore, additional work may be required to make the connection between the application challenges and potential solutions.

Moreover, many of the biggest challenges and thus highest impact innovations in the next 20 years will require a new level of reliability from technology: from autonomous vehicles, to remote healthcare, to defence.

A seven point Action Plan to increase partnerships and inward investment around photonics and microelectronics in the Heart of the South West was identified. These seven points are:

1. Targeted articles in marine, aerospace, nuclear publications
2. Cross-sector events in Heart of the South West with nuclear, aerospace and marine
3. Hosting national / international focused meetings in the Heart of the South West
4. Forging links & partnerships with national compound semiconductor, satellite, aerospace, health-care & photonics centres
5. Inter-LEP collaborations -SW region & South Wales; with Scotland & Solent. And / or Midlands & North East
6. Inter-regional training links to colleges focused on hi-tech manufacturing
7. Participation in European Coordination and Support actions.

It was recommended that these action priorities include forging links that put the Heart of the South West at the centre of the new vocational technical training agenda, and actively participating in the definition of what the technical training policy should be.

Defence

The defence sector is one of the Heart of the South West region's bedrock sectors, as well as one of its most productive. It has been the bedrock of many sub-Heart of the South West economies built around a unique composition of key physical assets spanning land, sea and air and a growing cyber cluster.

Recent years have seen a renewed emphasis on the localised economic impact of the defence industry with the release of the Philip Dunne report³². The report utilised existing evidence bases to, for the first time in recent years, scan the contribution of defence in its entirety (MOD, Armed Forces and industry) to the economic prosperity of the United Kingdom, this significant contribution to defence is little understood and taken for granted. The review revealed that the South West had the highest expenditure with industry and commerce, valued at £5.1b with major defence suppliers in the region including Airbus, Babcock, Boeing, Capita, Rolls Royce, Leonardo and Thales. The South West region is also home to the second largest cohort of regular military personnel at 36,240, with 11,700 of these located in the Heart of the South West. However, being constrained by only using existing evidence, the Dunne review does not capture the wider impacts of defence, beyond those affected.

There is currently an estimated **£2.6bn GVA in defence-related activity** across Heart of the South West. Through the development of this bedrock capability and encouraging innovation within the sector, this **value could rise to £6.9bn GVA by 2040**, more than meeting the defence sector contribution to Heart of the South West's overall ambition of doubling the size of the economy over 20 years. In addition, with a scenario that considers dual use from non-defence sectors, the potential could rise to a **value of £11bn by 2040**.

Whilst the defence sector remains demanding in terms of understanding and engagement, and is always vulnerable to national policy and international pressure, the right approach to enhancing cultural alignment between the customer and supplier base can present the best opportunity to address the structural vulnerabilities and **seek advantage through new entrants, innovative capabilities, export potential and developing high value engineering skills capacity**.

The report ran various scenarios, each assuming some level of intervention from the LEP in line with the recommendations made. These scenarios should not be viewed as mutually exclusive.

The first scenario, **the bedrock estimation**, assumed that through LEP intervention 25% of current bedrock capability would increase their market opportunities by 25%. This would result in a £210m uplift to the local defence sector, representing an average annual growth of 5% from current valuation baseline. The second scenario, **innovation**, forecasted productivity-led improvements. The results of this scenario can be viewed in the chart below.

The third, and final scenario, the **dual-use scenario**, is based on the notion of accessing capabilities from non-established defence suppliers. When set against the baseline valuation, this would be equivalent to a 2.7% uplift, adding an additional £207m in market activity p.a.

Strength	Weakness
<p>The region has distinguishing defence capability and an associated skills base;</p> <p>Existing defence bedrock business has a current footprint and significant economic value in key prime relationships with Leonardo, Babcock and Thales;</p> <p>Complementary clusters have well established expertise that can be applied more widely to defence;</p> <p>Key physical assets and research organisations can be the catalyst for future growth.</p>	<p>The ability to drive defence sector growth will require funding and a strategic approach that is not currently committed;</p> <p>Pressure on competition from overseas at a political level could impact current bedrock capability;</p> <p>Current defence supply chain readiness and an SME awareness and culture to engage may be limited in the wider industry sectors;</p> <p>Current limitations on capacity and skills to achieve substantial growth</p>

Opportunity	Threat
High potential and scope with growth through innovation;	Inability to shift the culture to fully embrace defence opportunity and for it to be sustained through to revenue;
Innovative capabilities can readily flow into bedrock capability through Prime supply chains;	Time taken to establish a defence-ready supply chain is too long;
Dual use capabilities can be positioned for export through established channels;	Leadership skills are not robust enough to deliver the new capabilities required;
New defence opportunities once identified can be leveraged through established clusters within the region;	Reliance on a narrow route to defence innovation could limit the ability to identify and commercialise new capabilities across the businesses;
Establish an effective defence cluster supported by an integrated and visible framework linking primes, small businesses, research organisations, academia with business support providers and government stakeholders.	Funding is not made available to support the growth agenda.

Recommendations include:

1. Proactive use of the DSM to identify new defence market programme opportunity.
2. Leverage HPC supply chain for advanced skills and supporting services
3. Address UKHO strategic opportunity for MOD Information Advantage
4. Enhance the quality of business management to meet the defence market demands
5. Increase defence exports for the region
6. Enabling SME defence innovation through improved insight and access for business into MOD
7. Identify defence dual use innovation activity within the LIS
8. Exploit UKMO intellectual opportunity for defence innovation
9. Pull-through research for enhanced commercialisation of innovation for defence

Aerospace

Prior to COVID 19 there was significant global demand for new aircraft. The UK has the second largest Aerospace sector in the world, with 17% of the global market. 80% of the jobs in the sector are outside London and the South East.

The South West Aerospace cluster is the second largest in Europe³³. All 15 of the global leading Aerospace companies in the world have bases in the South West. Aerospace in Somerset is part of this globally significant South West cluster. Somerset has a unique UK specialism in rotorcraft, particularly helicopters, with Leonardo as the only industry prime in this country with a complete end-to-end capability, although there are businesses involved in fixed-wing supply chains too.

Other leading Aerospace businesses in Somerset include Honeywell, Thales, Tods Aerospace, BAE Systems and Taunton Aerospace. This is particularly valuable to the Somerset economy. Some 4,300 people are employed in Aerospace in Somerset, with around 2,800 of these employed by Leonardo. This does not represent the full impact of the sector, as many more people are employed in precision engineering companies that supply to the Aerospace sector and other sectors.

Advanced Manufacturing employs around another 6,000 people in Somerset. South Somerset has 21 times the concentration of employment in Aerospace than in the national economy. The aerospace sector as a whole generated around £300 million of GVA to the Somerset economy in 2015.

Productivity in Aerospace in Somerset is nearly 30% higher than productivity across the whole economy. Aerospace in Somerset is valuable to the UK economy, including exports, with over 50% of sales from the Somerset Aerospace sector being made overseas. The helicopter industrial capability in Somerset is the only end-to-end original equipment manufacturing (OEM) process in the UK, from research to design, development, manufacture, support, training and servicing.

Whilst aerospace is recognised for its importance to the UK economy generally, in Somerset it is a critical strength. For Somerset, neighbouring Dorset, and the wider region, maintaining this strength and capitalising on significant future growth opportunities will be absolutely vital to increasing productivity and meeting the ambitions of the UK Government's Industrial Strategy.

There are significant opportunities for future growth, and significant challenges to be overcome. The Aerospace sector is buoyant and the South West is an attractive location for businesses. Although global growth is forecasted in Aerospace, the rotorcraft market has suffered as a direct result of low oil prices. Drivers of future growth are likely to include: future advanced helicopter designs; increased demand for the civilian market and diversification away from military; increased use of composite materials; increased sustainability and reduced environmental impact; increased use of digital technology; demand for unmanned aerial vehicles (UAVs); further development of tilt rotor technology. Given the increasing reliance on new technologies and approaches, the sector is likely to become more reliant on networks of SMEs to drive its innovation. Therefore, investment in developing high-value design capabilities, as well as networking and collaboration, will be important to the future success of the sector.

Airports

- Exeter – 1m passengers per year, challenges from the collapse of Flybe (other airlines have replaced some routes), major implications of coronavirus pandemic. Current focus on likely survival.
- Plymouth – potential to bring back to use or innovative future flight purposes (test, demonstration, proving ground for hybrid-electric / electric aircraft; also unmanned ground vehicles, future ATM/UTM and other airport innovations. FlyPlymouth group of investors already in place seeking to do this. Will be complex but worth considering.

Potential for airports to be utilised to support flight testing of hybrid-electric and electric fixed wing and VTOL (vertical take-off and landing), as well as electric ground vehicles, robotic passenger assistants, biometrics and a wide range of digital systems to support processes such as check-in, immigration, baggage handling etc.

Air Traffic Control/ Management (ATC/ATM)

- Technology capability (Thales, Babcock and Leonardo)
- Centres of Excellence – both the Met Office and Satellite Applications Catapult South West Centre of Excellence have highly relevant expertise.
- All expertise in autonomy, big data and communications both within industry and academia is also of relevance.

Aircraft Maintenance

Flybe have been the regional leaders in this, supporting Flybe fleet and others. Some of the capability (staff, resources, and hangars) can be salvaged. The type of aircraft supported are those that are ideal for conversion to hybrid-electric, so there might be opportunities to explore future requirements of hybrid-electric etc. and demonstrate the applicability of disruptive technologies for MRO purposes.

Also in close proximity to Bournemouth Airport and Cornwall Airport Newquay.

Aerospace Manufacturing

Significant manufacturing capability in Heart of the South West which has big role to play in future flight concepts – particularly in relation to Clean Growth and environmental impact of aviation. Capability comprises large and small companies which are heavily inter-connected with the wider Heart of the South West Aerospace cluster.

Observations

- Main opportunities in manufacturing and the future of aviation relate to Leonardo, Eaton, TT Electronics and possibly Collins Aerospace; also, Thales (transfer of marine expertise to aviation) and Babcock (access via Plymouth to wider company expertise in aviation)
- Innovation and disruptive technologies within both established firms (e.g. Leonardo, Thales) and start-ups (Astigan, Windhorse Aerospace)
- Number of suppliers in Heart of the South West who serve Rolls-Royce and Leonardo; several quite old-fashioned and would ideally need to adopt more innovative technologies and processes in order to benefit (e.g. MB Aerospace)
- Would also be worth exploring if there are companies beyond Aerospace with expertise in VR/AR, Artificial Intelligence, Composites (other than Tods which may not be able to be saved), additive manufacturing or digital technologies.

Labour market

Employment

There were 766,500 people in employment across Heart of the South West in 2018. According to this count of workplace-based employment, 715,500 of these were employees, whilst the rest were working owners/ self-employed. Only 62.3% of all employees were employed on a full-time basis (>30 hrs per week), compared to 67.7% nationally, and 63.8% across the South West. Moreover, 82.8% of employees worked in the private sector - in line with the national average, but below the regional average of 83.5%; this suggests a private-to-public sector ratio of 4.8, ranking Heart of the South West 26th out of 38 England LEPs on this measure.

Looking at historic trends, the number of Heart of the South West employees had grown 9.5% since 2011 (1.5% between 2017-18); this compares with 11.9% (0.7% 2017-18) nationally, and 10.3% (1.3% 2017-18) regionally. This has been driven predominantly by growth in the number of full-time employees in Heart of the South West (+10.7%), though full-time employee numbers also increased (+7.8%).

The total number in employment across Heart of the South West has risen faster over the same period (+10.7%) than the number of employees, suggesting more significant growth in the number of working owners. This has been more in line with the national average (+10.9%), and significantly higher than the growth experienced across the South West region (+8.5%).

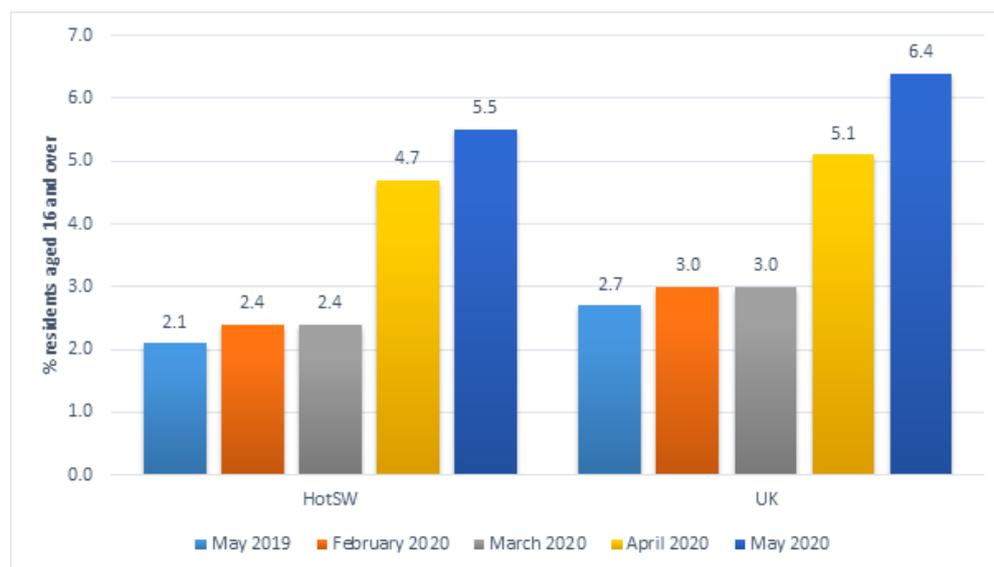
In the 12 months to December 2019, 82% of Heart of the South West's working age population were economically active, and 79.3% were in employment, in line with the regional average, and comfortably above the national rates (78.8% economically active, and 75.6% employed)³⁴. Heart of the South West's self-employment rate in 2019 was significantly higher than nationally (12.6% of the working age population, v. UK 10.9%), though in line with the regional rate.

Unemployment

Unemployment (claimants of unemployment benefits and non-claimants) as a proportion of the working age population stood at 3.3% in the year to December 2019, compared to 4% UK-wide, and 3.2% across the South West. Moreover, Heart of the South West's economic inactivity rate was 18%, below both the regional and national rates (18.2%, and 21.2% respectively). This suggests that Heart of the South West may have been approaching its full functional employment rate before the start of 2020.

However, more recent administrative figures on unemployment suggest that the virus outbreak have certainly thrown the region onto a different trajectory. Heart of the South West's claimant count (Job Seekers' Allowance and Universal Credit) has historically been lower than nationally, and in line with the regional average, although at a local and district authority level, the picture is rather mixed. April 2020 has been the first month to reflect the job losses caused by the virus outbreak. The claimant unemployment rate as a proportion of the working age population stood at 4.7% in April 2020, rising further to 5.5% in May 2020; this is a 17.4% rise between April and May, and a 165% increase on May 2019. Prior to the outbreak, Heart of the South West's claimant rate in February 2020 stood at 2.4%, comfortably below the UK rate of 3%.

Figure 17. Percentage of residents aged 16 and over claiming unemployment-related benefits ('the Claimant Rate'), Heart of the South West and UK, selected dates

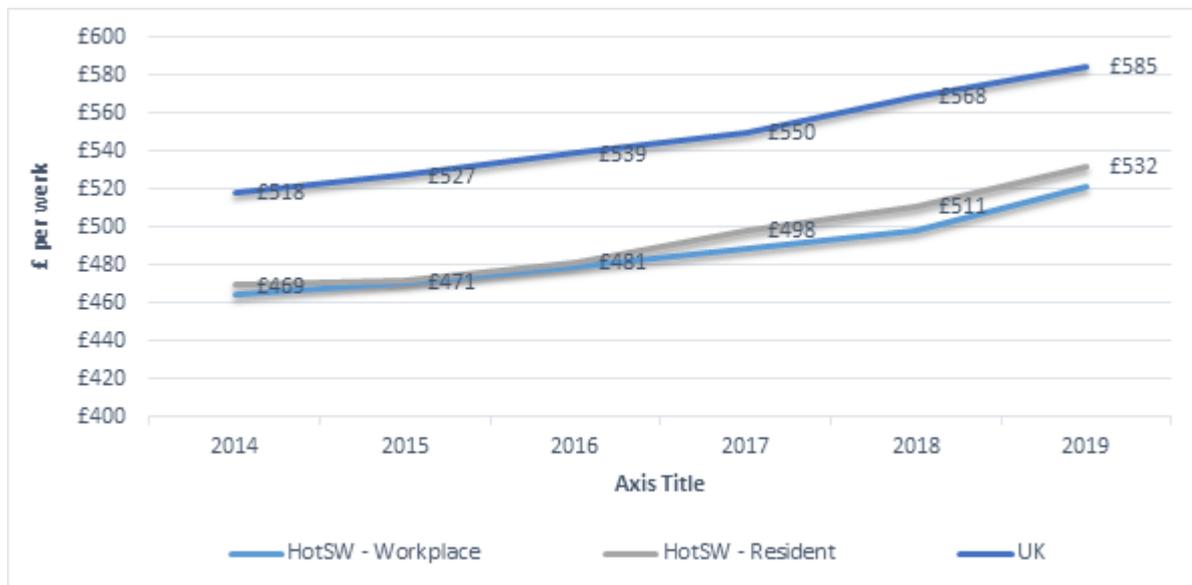


Source: Claimant Count, ONS

Earnings

Heart of the South West's median weekly full-time earnings stood (in 2019) at £521.3 for Heart of the South West workers, and £531.8 for Heart of the South West residents - the difference lying in commuting patterns to from rural Heart of the South West districts to other urban centres outside of Heart of the South West³⁵. Both average earnings, however, lie below the UK average of £584.9 per week.

Figure 18. Median gross full time weekly pay, Heart of the South West and UK, 2019



Source: Annual Survey of Hours and Earnings via NOMIS

Workplace earnings were up 4.8% on 2018, and resident earnings grew 4.1% over the 12 months; this compares positively against a 2.9% national average growth, and a 1.4% inflation rate - meaning that Heart of the South West workers and residents saw a real increase in their incomes over the period. On the other hand, Gross Disposable Household Incomes (GDHI) per head stood at 92.6% of the UK average in 2017, and average full-time weekly wages in 2019 were 89.1% of the UK average for Heart of the South West workers, and 90.9% for Heart of the South West residents - all suggesting that Heart of the South West incomes continue to fall short.

This is also evident looking at different quartiles on the earnings distribution scale, as the bottom 25% of Heart of the South West residents earned an average of £400 per week in 2019 (93.3% of the UK average), and the bottom 80% earned an average of £761 per week, 84.9% of the UK average. This suggests that the wage gap rises with the income scale, with the highest-skilled of Heart of the South West residents seeing the largest gap.

Heart of the South West's wage gap with the national average is also particularly experienced in full-time jobs. Heart of the South West's residents in part-time employment earn 1% above the UK average (males earning 6.2% more than the UK average part-time pay), whereas those in full-time employment earn 90.9% of the national weekly pay. Furthermore, the gender pay gap appears to be more significant for residents in full-time work: female residents earn the same in an average part-time job as a male counterpart, but only 84.2% of a male's average pay in a full-time job.

5. I-Cap

The sub-region's innovation performance is driven in part by the availability of innovation capacity or "I-CAP". This can be described in terms of:

- Innovative capacity and capability of the people who live and work in the area;
- The level and nature of investments made in R&D; and
- The underpinning Infrastructure than supports this activity.

Human capital

Employment in STEM occupations

While it is impossible to know exactly how many people who live and/or work the Heart of the South are engaged in innovative economic activity, employment in STEM-related occupations provides a useful proxy. Estimates from the Annual Population Survey suggest that fewer than 50,000 people who live in the LEP area work in professional or associate professional occupations in science, research, engineering or technology. This is likely to be a conservative estimate since it does not include people who work in other occupational categories – for example, managers & senior officials and those working as skilled trades' people who also contribute to these endeavours.

This narrowly defined STEM workforce is relatively small by national benchmarks comprising 6 % of residents in employment compared to the England average of 8 %. This is less than half that in Oxfordshire (15 %) and Thames Valley Berkshire (14 %) LEP areas and when ranked against all other LEP areas is placed 32nd out of 38 areas⁹. The proportion of the residents working in these occupations has remained broadly stable over the last 10 years.

An assessment of the employment specialisms of different LEPs published by the Smart Specialisation Hub¹⁰ suggests that the Heart of the South West ranks 9th among all LEPs for the share of the workplace employment in industries classified as "other scientific and technological manufacture" and 11th for employment in "life sciences and healthcare". The Heart of the South West also ranks 20th for both "other scientific and technology services" and "publishing and broadcasting" and 22nd for "digital technologies".

Higher education's contribution to building innovative capacity

HEIs play a critical role in creating human innovation capacity through their teaching, research and employer engagement (i.e. knowledge transfer) activity.

STEM students

Focusing first on teaching, around 49,000¹¹ students are attending HEIs in the Heart of the South West at any one time. Undergraduate students account for 81% of this total, with the remainder on postgraduate courses (19 %).

⁹ Annual Population Survey, April 2019 to March 2020 accessed via NOMIS on 18th August 2020.

¹⁰ Source: Table B3, Smart Specialisation Hub - LEP data framework

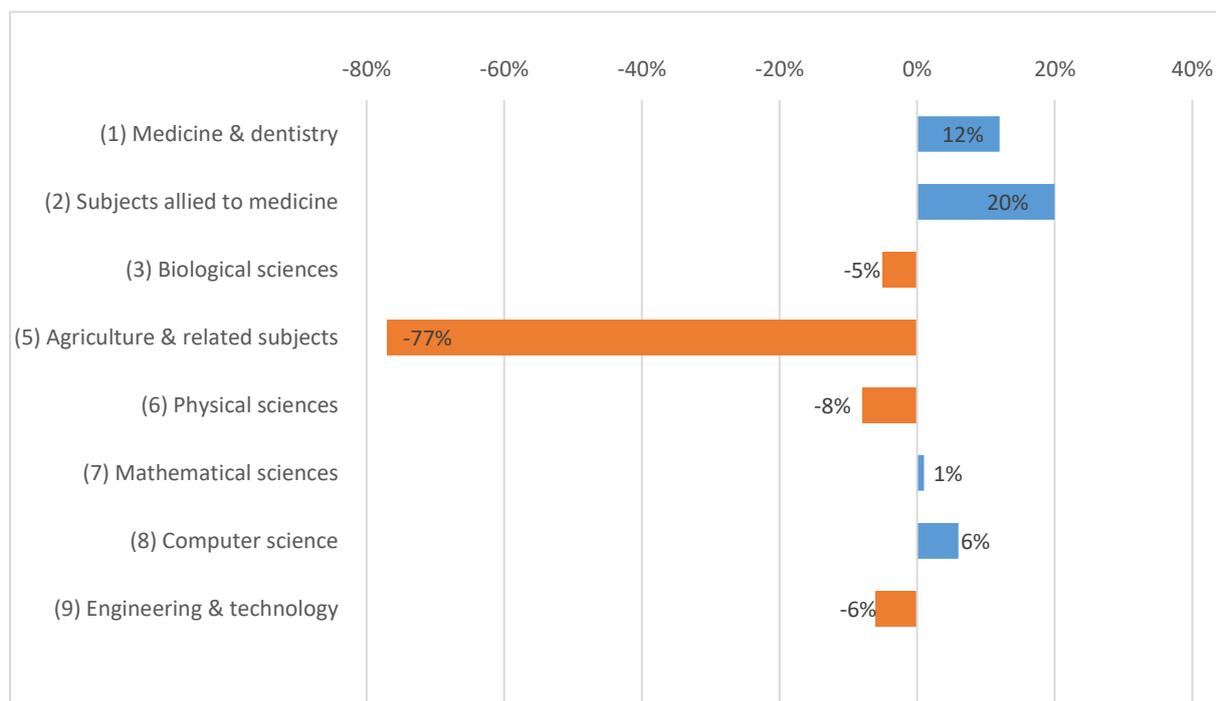
¹¹ The total FPE of students at Heart of the South West HEIs in 2018/19 was 48,805

Analysis of the student population using full time equivalents reveals that 44% % (19,565 FTE) of those attending HEIs in the Heart of the South West in 2018/19 were on STEM-related courses, distributed as follows:

- Biological sciences, 14% of all FTE (6,020 FTE)
- Subject allied to medicine, 10% (4,395 FTE)
- Physical Sciences, 6% (2,555 FTE)
- Engineering & technology, 5% (2,405 FTE)
- Medicine & dentistry, 4% (1,570 FTE)
- Mathematical sciences 3% (1,395 FTE)
- Computer science, 3% (1,175 FTE)
- Agriculture & related subjects, < 1% (50 FTE)

While enrolments on STEM-related courses have remained broadly stable over time overall, this hides significant variation between disciplines with medicine & dentistry and subject allied to medicine, and to a lesser extent, computer science and mathematical sciences experiencing growth in enrolments and all other STEM disciplines but most notably agriculture and related subjects experiencing a decline.

Figure 19. Change in student FTE 2014/15 to 2018/19 across Heart of the South West HEIs



Source: HESA Student Full Time Equivalent (FTE) v1 accessed through Heidi Plus 2014/15; 2018/19

Research and academic staff

Academic staff employed in HEIs represent significant innovative human capital through their research, teaching and employer engagement activities. In 2018/19, almost 4,300

academics were employed across the LEPs four HEIs the majority of whom were employed by the University of Exeter (2,810) and the University of Plymouth (1,250)¹².

The allocation of around £2bn UK higher education research funding to UK universities between dates was determined by an assessment exercise called “Research Excellent Framework”. This process sought to distribute funds selectively on the basis of quality and impact and involved an expert review of case studies of previous research carried out across 36 subject-based units of assessment. The last REF process was completed 2014 with submissions for the latest cycle due later this year.

Two HEIs within the Heart of the South West LEP area submitted case studies for REF2014: the University of Exeter and the University of Plymouth. Together they submitted over 1 100 FTE of academic staff, 3909 research outputs and 134 case studies. Analysis of data compiled by the Smart Specialisation Hub benchmarking LEPs according the number of staff submitted to REF by STEM discipline reveals that the Heart of the South West ranked 18th in terms of the total number of staff submitted for STEM disciplines. Compared to other areas, the Heart of the South West had a relatively high number of staff making submissions for subjects related to veterinary science, agriculture & related subjects, physical sciences and mathematical sciences although in absolute terms, the largest numbers of staff submitted case studies for medicine & dentistry, physical sciences and engineering & technology.

In the overall ranking of institutions (based on GPA) the University of Exeter ranked 30th (of how many) and the University of Plymouth ranked 66th. The institutional rankings for both institutions by unit of assessment are presented in Table 4. Highlights in terms of local strengths (positions within the Top 20) include:

- Within the University of Exeter: Area studies (3rd), Education (8th), Politics and International Studies (9th), History (9th) Sport and exercise sciences, Leisure & Tourism (10th), Sociology (11th), Classics (11th), Clinical Medicine (joint 12th), Theology and religious Studies (joint 13th), Earth systems and Environmental sciences (14th), Physics (16th), General engineering (17th), Biological sciences (18th), Economics and Econometrics (joint 19th), Law (19th)
- For the University of Plymouth: Clinical medicine (joint 13th).

Table 4. Overall REF 2014 ranking for the University of Exeter and University of Plymouth by Unit of Assessment

Unit of Assessment	Overall Ranking	
	Exeter	Plymouth
Clinical medicine	=13 th	=13 th
Public health, Health services and Primary care	21 st	
Allied health professions, Dentistry, Nursing and Pharmacy		78 th
Psychology, Psychiatry and Neuroscience	21 st	=34 th
Biological sciences	18 th	
Agriculture, Veterinary and Food science		25 th
Earth systems and Environmental sciences	14 th	=26 th
Physics	16 th	
Mathematics	=23 rd	50 th
Computer science and Informatics	=28 th	32 nd

¹² <https://www.hesa.ac.uk/data-and-analysis/staff/working-in-he> Table 1

Electrical and Electronic engineering, Metallurgy and Materials		27th
General engineering	17th	35th
Architecture, Built environment and Planning		33rd
Geography, Environmental studies and Archaeology		42nd
Economics and Econometrics	=19th	
Business and Management studies	=39th	70th
Law	19th	
Politics and International studies	9th	
Social work and Social policy		36th
Sociology	11th	
Education	8th	45th
Sport and exercise sciences, Leisure and Tourism	10th	
Area studies	3rd	
Modern languages and Linguistics	36th	
English Language and Literature	=30th	62nd
History	9th	62nd
Classics	11th	
Theology and Religious studies	=13th	
Art and Design: History, practice and theory		=42nd
Music, Drama, Dance and Performing arts	=32nd	54th

The Times Higher Education Research Intensity ranking – which adjusts the overall ranking of institutions for differences in the proportion of eligible staff submitted places the University of Exeter 16th¹³.

Analysis published in July 2015 as part of the Mapping Comparative Advantage in Innovation report¹⁴ ranks LEP areas in terms of composite indicators comprising metrics based on the volume and impact of the academic output of their HEIs. The results reveal that the Heart of the South West LEP ranks:

- 12th overall for the academic output across all subject areas;
- 15th for the 'Great 7 Technologies'¹⁵;
- 12th for the Innovative Priority Areas; and
- 10th for the Industrial Strategy Sectors.

The Smart Specialisation Hub benchmarked LEP areas according to the publication output of HEIs across each of the eight 'Great Technologies'¹⁶ and Innovate UK priorities. In terms of overall volume the Heart of the South West ranked 23rd for the former and 22nd for the latter with both lists unsurprisingly topped by Oxfordshire and Greater Cambridgeshire & Greater Peterborough reflecting the larger academic output of the Universities of Oxford and Cambridge respectively. While the HEIs in the Heart of the South did not generate greater volumes of output across any of the disciplines explored publication output was highest for

¹³ https://en.wikipedia.org/wiki/Research_Excellence_Framework

¹⁴

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/547000/bis-15-345-mapping-local-comparative-advantages-in-innovation-framework-and-indicators-appendices.pdf

¹⁵ Regenerative medicine was excluded due to the low number of publications.

¹⁶ advanced materials; agri-science; big data; energy storage, regenerative medicine, robotics and autonomous systems, satellites and synthetic biology

health & care and built environment (both Innovate UK priorities) and regenerative medicine and energy storage (both Great Technologies).

Continuing Professional Development and Continuing Education

Universities also support the creation of human capital through the provision of Continuing Professional Development (CPD) or Continuing Education (CE) opportunities. During, 2018/19, HEIs in the Heart of the South West generated £3.2m in revenue¹⁷. The provision of CPD and CE is a growing market locally with the value of training offered locally increasing by 66% between 2014/15 and 2018/19. This is compared to a far more modest 4% across all HEIs nationally.

Employer investment in training

Employer investment in training is an indicator of the innovative capacity within the firm. As the predominant form of innovation in firms is incremental, the skills of the broader workforce are central in sporting the generation, adaptation and diffusion of technical and organisational change in the workplace¹⁸. According to the UK Employer Skills Survey employers nationally spent around £44.2 billion training and developing their staff during 2017¹⁹. As well as such elements as fees to external providers and expenditure on equipment or materials (which comprised a relatively small proportion of overall employer investment in training), a substantial proportion of this expenditure covered the wages of staff while being trained, and of staff delivering training. Employer investment in training has increased in real terms since 2011 but the proportion of staff trained has remained stable at just over three-fifths of the workforce since 2013.

¹⁷Source: HEBCIS

<https://www.hesa.ac.uk/data-and-analysis/business-community/services>

¹⁸ <https://www.oecd.org/innovation/inno/46970941.pdf>

¹⁹ Employers' total investment in training over the previous 12 months was equivalent to around £2,470 per person trained and £1,530 per employee.

Table 5 presents a selection of metrics describing employers' investment in training in the Heart of the South West LEP area compared to the England average. The LEP area performs well on most measures – the percentage of employers offering training is higher than the national average as is the percentage of employers providing on-the-job training. Furthermore the percentage of local employers providing off-the-job training and the share of employees engaging in training is broadly in line with the national average. Less positively, however, the LEP area performs less well on measures that describe the intensity of training – with fewer days provided per trainees and member of staff.

Table 5. Employer investment in training summary measures, Heart of the South West LEP and England, 2017

Training Measure	Heart of the South West	England
% of establishments training staff	70%	66%
% of establishments providing off-the-job training	49%	48%
% of establishments providing on-the-job training	56%	53%
% of training establishments providing online training or e-learning	50%	52%
Total number trained (including modelled data)	442,917	15,232,729
Total number of staff	708,281	24,452,030
Number trained as % of total staff	62.5	62.3
Total Days Training	2,615,488	97,581,459
Training days per trainee	5.9	6.4
Training days per staff	3.7	4.0

Source: ESS, 2017

Employers have been fairly consistent in the type of training offer over time. Within the South West LEP area, the most common training is job-specific training (87%) followed by health and safety and/or first aid training (75%), basic induction training (62%). Interestingly, almost half (46%) of employers who had provided training had provided training in new technology and almost a third had provide supervisory (31%) or management (30%) training. These proportions were, however, marginally lower than the England average.

As nationally, the percentage of employers providing training within the LEP area varies considerably by sector and size. Unsurprisingly, larger employers are more likely to have trained their staff with the 'step change' tending to occur as employers reach the 5+ employee size bracket. Local or Central government funded establishments (92%) and those from the charity or voluntary sector (89%) are more likely to train staff than profit-seeking enterprises (67%). It follows therefore, that training is almost ubiquitous within the health and social work (93%), education (93%) and public administration & defence sectors (92%). However, training is also commonly offered within financial services (89%) and business services (78%). Establishments in the primary and utilities sector (54%) and manufacturing sector (56%) are the least likely to have trained staff in the last 12 months.

Establishments that have relatively few highly qualified²⁰ employees (i.e. where these employees account for less than one-fifth of the workforce) are less likely than those with higher shares of highly-qualified staff to train their employees (63% compared to 78% of established with between 20 to 80% of highly skilled staff).

Three in ten (30%) establishments operating in the Heart of the South West LEP area had not trained any staff during the 12 months preceding their participation in the UK Employer Skills Survey. This is slightly lower than the English figure of 34%.

²⁰ Staff with qualification at Level 4 or above.

Additionally, the UK Employer Skill Survey explored whether employers who did train would have provided more training for staff than they were able to over the last 12 months, if they could have done so. Within the South West LEP area, 46% of establishments who had trained would have provided more training for staff if they had been able to. The main barriers that had prevented them doing so were: lack of funds for training or training too expensive (56%) and can't spare more staff time (having them away on training) (52%).

Funding

R&D Gross expenditure on Research and Development

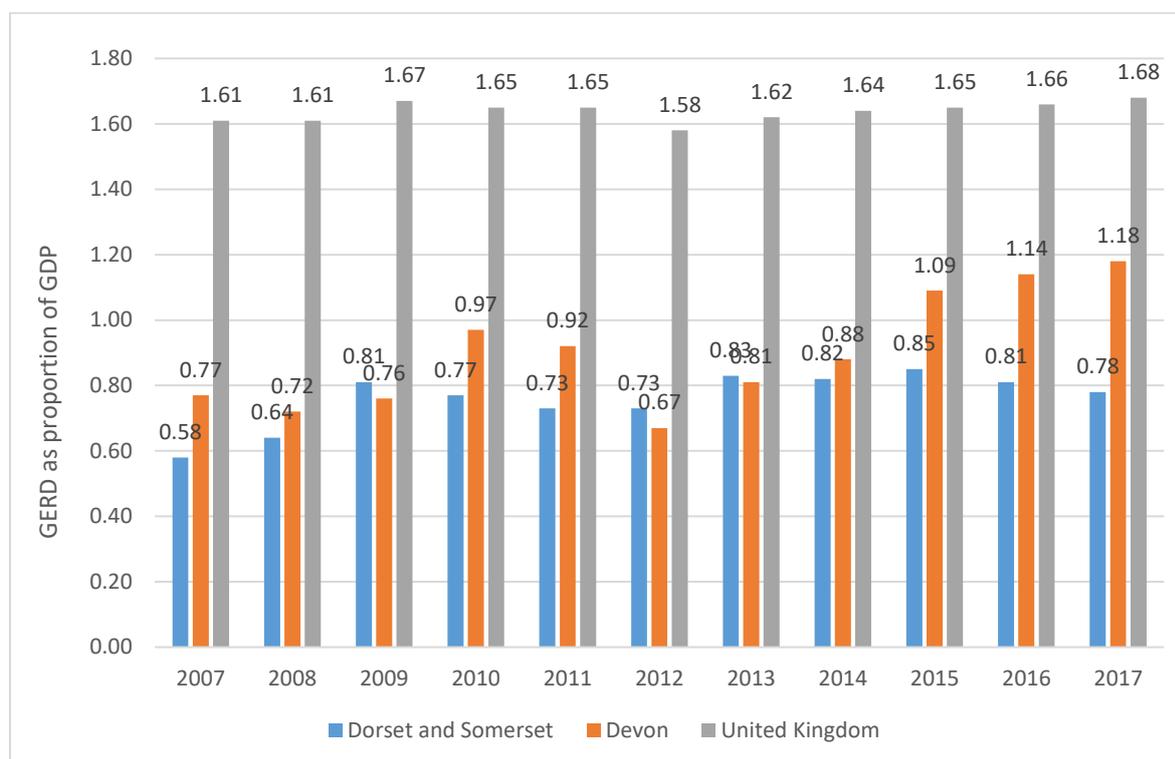
While gross expenditure on Research and Development (GERD) has increased by more than 100 % in real terms across the UK over the last 40 years, investment has fallen as a proportion of GDP²¹. The current rate of 1.7 % of GDP recorded in 2019 is lower than the equivalent of 2 % of GDP recorded in 1981 and lower still than the Government target for total R&D investment to reach 2.4% of GDP by 2027.

There is a clear southeast and eastern bias in GERD: analysis of Eurostat's estimated 2017 figures for NUTS2 regions reveals that almost a third of UK GERD in that year was taken up in three areas: Berkshire, Buckinghamshire and Oxfordshire (11 %), Inner London – West (10 %) and East Anglia (9 %). In 2017, around £325.6m was invested in R&D in Devon with a further £256.6m investment in Dorset and Somerset²². Investment locally, however, is low by national standards when expressed as a proportion of GDP although the performance in Devon has improved over the last five years, rising from 0.67 % in 2012 to reach 1.18 % in 2017. By contrast, the proportion in Dorset & Somerset has fallen in each of the last 3 years.

²¹ <https://commonslibrary.parliament.uk/research-briefings/sn04223/>

²² Note that the data is available within the NUTS 2 level only and data for Somerset cannot be separated from Dorset.

Figure 20. Intramural R&D expenditure (GERD) as a proportion of GDP: Dorset & Somerset, Devon and UK: 2007 to 2017



Source: Eurostat

R&D investment per head of population is also lower than the national average. At €314.6 per inhabitant, investment was 52 % of the UK average (€603 per inhabitant) in Devon and 37 % of the UK average in Dorset & Somerset (€221.4 per inhabitant)²³.

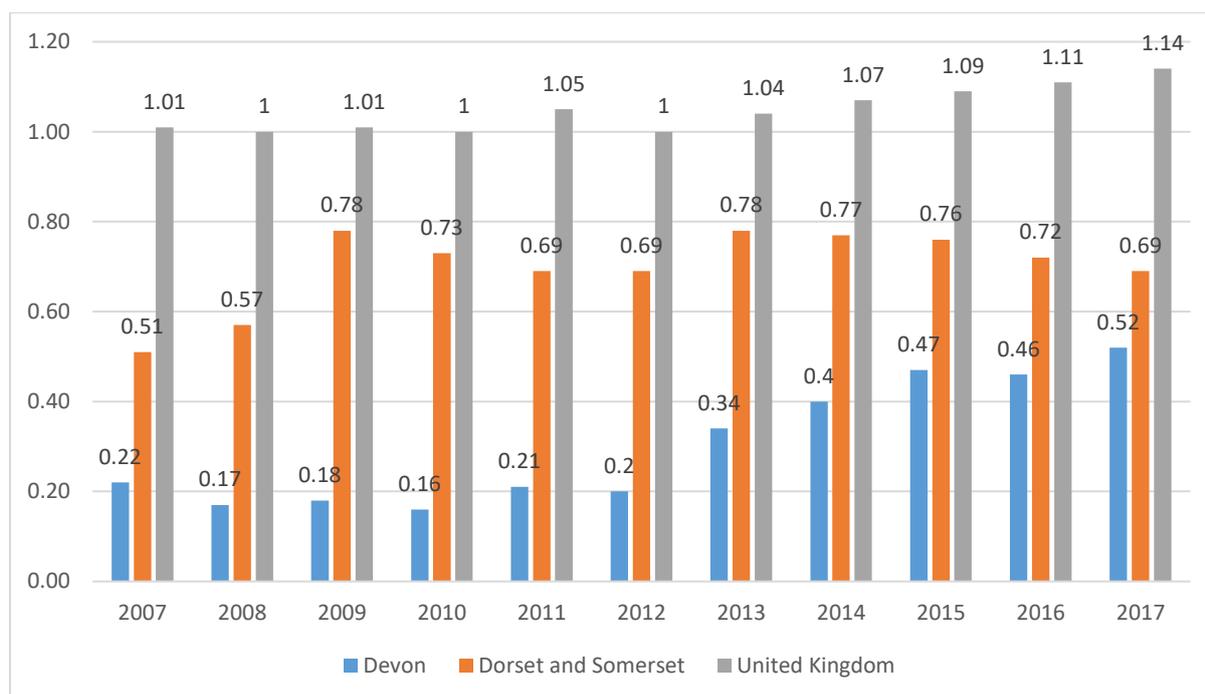
Business Investment in R&D

Most of the UK R&D expenditure described above is spent by businesses (68 %). In 2018, businesses enterprises undertook £25 billion worth of R&D with most of this (79 %) funded by the sector itself. Most of the remainder was funded from overseas sources (13 %) with Government (5 %), UK Research & Innovation (2 %) and Higher Education (1 %) contributing minor shares to total R&D spend in this sector.

Across the UK as a whole, business enterprises invested the equivalent of 1.14 % of GDP in R&D. Benchmarked in this way, investment locally is significantly lower than the national average in both Devon (0.52 %) and Dorset & Somerset (0.69 %). While business investment in R&D as a proportion of GDP has fallen in each of the last 5 years in Dorset & Somerset, the statistic has improved somewhat in Devon (Figure 21).

²³ <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

Figure 21. Business investment as percentage of GDP: 2007 to 2017



Source: EUROSTAT downloaded 20th August 2020.

When expressed on a per capita basis, business investment on R&D is again higher in Dorset & Somerset (€194.6 per inhabitant) than in Devon (€139.7 per inhabitant) although both are considerably lower than the UK average (€410.3)²⁴.

Analysis at the LEP level is problematic as the data is not routinely published at this level although estimates²⁵ published by the Smart Specialisation Hub based on 2014 data for Eurostat suggests that business enterprise spending per FTE across the Heart of the South West ranked 32nd among 38 LEP areas in 2014 (Table 6). At £263 per FTE the local figure was just one third of the national average (£811).

Table 6 Business Enterprise spending on R&D (BERD) per FTE, 2014

Ranking	LEP	£/FTE	Benchmark
1	Gloucestershire	2183	2.69
2	Buckinghamshire Thames Valley	1991	2.46
3	Cheshire and Warrington	1987	2.45
4	New Anglia	1907	2.35
5	Hertfordshire	1816	2.24
32	Heart of the South West	263	0.32

Source: Table B1, [Smart Specialisation Hub - LEP data framework](#)

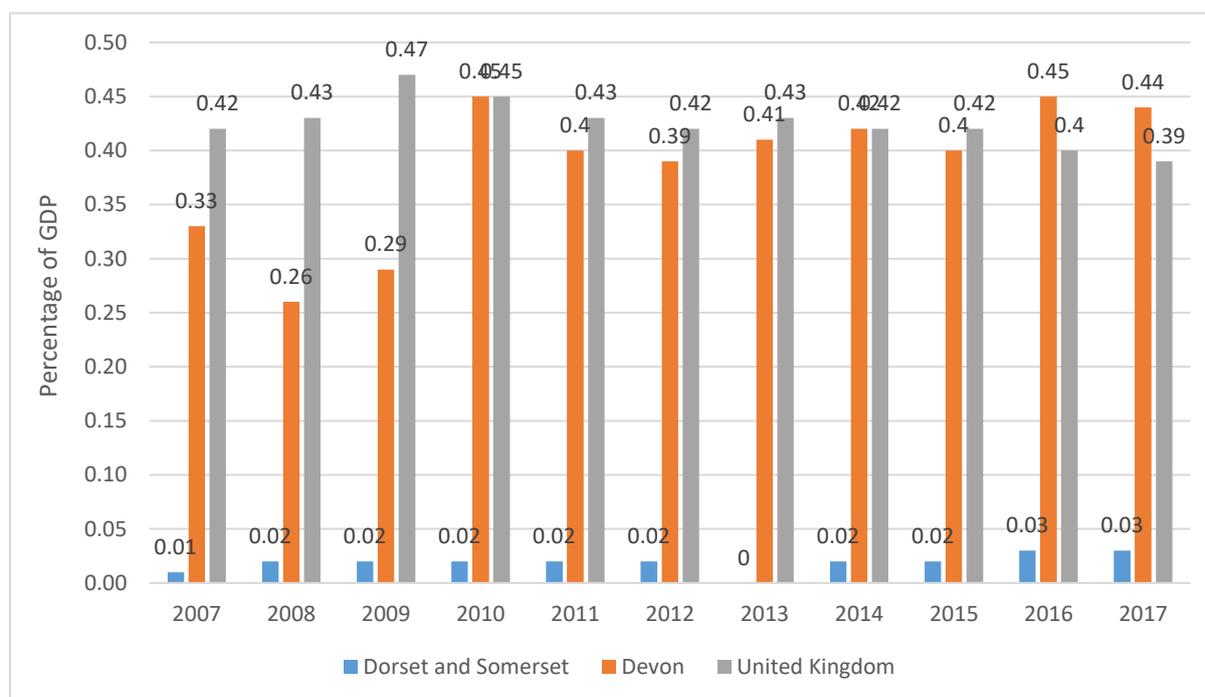
²⁴ Eurostat, 2017 data.

²⁵ NUTS 2 regions are adapted to LEPs by weighted averages based on the number of local authorities in each region. Figures are relative to employment using employment (FTE) from the ONS Business Register and Employment Survey 2015).

Higher Education investment in R&D

The higher education sector, which comprises universities and higher education institutes, had the second highest R&D expenditure of £8.7 billion in 2018²⁶. Around half this expenditure was funded by UK Research & Innovation²⁷ (30 %) and Higher Education Funding Councils (29 %) with the remainder originating from: overseas (18 %), private non-profit (15 %), business enterprise (4 %) and government (4 %). The value of R&D performed by the Higher Education sector has risen consistently over the last decade in real terms (18 % between 2008 and 2018)²⁸. Data downloaded from Eurostat reveals that Higher Education spending on R&D was £120.6m in Devon and £9.6m and Dorset & Somerset in 2017²⁹. While expenditure on R&D within this sector is higher than the national average when expressed as a percentage of GDP in Devon, it is substantially lower in Dorset & Somerset (Figure 22). The figure for Somerset is likely to be close to zero due to the absence of a HEIs in the County. When ranked against the other 27 NUTS2 areas for which data is available, Devon ranks 7th on this measure – well behind Berkshire, Buckinghamshire & Oxfordshire (0.85 %), South Yorkshire (0.82 percent) and Inner London – West (0.81 %) but well above most other areas.

Figure 22. Higher education expenditure on R&D as a percentage of GDP; Devon, Dorset & Somerset and UK; 2007 to 2017



Source: Eurostat <https://appsso.eurostat.ec.europa.eu/nui/show.do>

The Smart Specialisation Hub produced estimates of higher education spending per FTE by LEP area using 2014 'HERD' data published by Eurostat. Their analysis puts higher educating

²⁶

<https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/ukgrossdomesticexpenditureonresearchanddevelopment/2018>

²⁷ UK Research and Innovation (UKRI) was created to bring together the UK's Research Councils, Innovate UK

²⁸

<https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/datasets/ukgrossdomesticexpenditureonresearchanddevelopment>

²⁹ <https://appsso.eurostat.ec.europa.eu/nui/show.do>

spending at £152 per FTE considerably below the England average of £210 per FTE (Table 7). Overall, this result places the Heart of the South West, 17th in the LEP rankings. This lower ranking reflects the likely low level of higher education R&D spending in Somerset.

Table 7. Higher Education spending on R&D (HERD)

Ranking	LEP	£/FTE	Benchmark
1	Buckinghamshire Thames Valley	821	3.91
2	Oxfordshire	659	3.14
3	New Anglia	579	2.76
4	Thames Valley Berkshire	573	2.73
5	Black Country	450	2.14
17	Heart of the South West	152	0.72

Source: Table A1, Smart Specialisation Hub - LEP data framework

Innovate UK

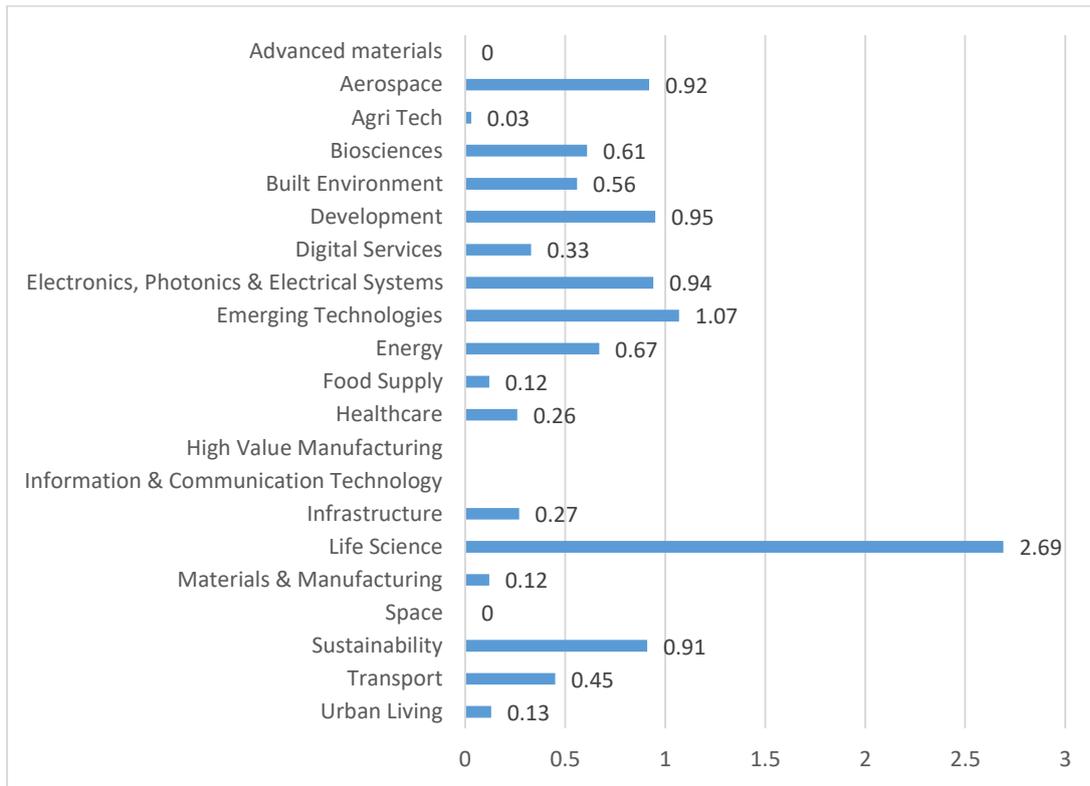
Innovate UK awarded £50.6million of funding to the Heart of the South West between 2012 and 2021³⁰.

The success rate of Innovate UK funding in the Heart of the South West LEP is lower than the national average. Heart of the South West businesses are less likely than those in other areas to be successful in securing first Innovate UK funding and then going on to second projects having completed a first³¹. Figure 23 is reproduced from the Smart Specialisation Hub LEP profile for the Heart of the South West. It shows the value of Innovate UK grants awarded to companies in the Heart of the South West by sector indexed against the average value of grants for that sector across the UK. Clearly, the only sector that the Heart of the South West received grants greatly in excess of the national average were for Life Sciences, with emerging technologies the only other sector to receive a greater sum than average. A small other sectors came close, principally: development; electronics, photonics and electrical systems, aerospace and sustainability. Most other sectors however received considerably smaller grant awards than the UK average.

³⁰ <https://www.birmingham.ac.uk/Documents/college-social-sciences/business/research/city-redi/Projects-Docs/EXTERNAL-FUNDING-ENVIRONMENT-FINAL-REPORT-c.pdf>

³¹ <https://heartofswlep.co.uk/wp-content/uploads/2019/02/Assessing-Innovation-Support-in-Cornwall-the-Isles-of-Scilly-and-Heart-of-the-SW.pdf>

Figure 23 Grants offered by Innovate UK (Average =1), Heart of the South West, March 2014 to March 2018



Source: <https://smartspecialisationhub.org/wp-content/uploads/2018/02/HEARTOFSW-SSH-PROFILE-Dec-2018.pdf>

Further analysis of Innovate UK funding in Heart of the South West³² found:

- innovation clusters in urban areas such as Exeter and Plymouth, particularly with innovative businesses clustering around Universities
- The corridor that joins the two centres of Exeter and Plymouth also highlighted as innovation area - A38 and roads off this have several patent-owning businesses, indicating R&D activity.
- On the north coast of Devon, there is a cluster of funding recipients.
- Geographical isolation may limit networking and the benefits from clustering. This may then cause a lack of peer-to-peer innovation, and lack of understanding of the background to Innovate UK competitions.

Innovation Infrastructure

The Heart of the South West has a significant level of infrastructure assets to support business growth. It has world-leading strengths in Life and Earth Sciences, Physical Sciences and Engineering and Health. These strengths, stemming from the presence of the universities of Exeter and Plymouth in Devon have in turn led to the development of associated research institutes. Funding has been levered in to strengthen these assets through for instance, the

³² <https://heartofswlep.co.uk/wp-content/uploads/2019/02/Assessing-Innovation-Support-in-Cornwall-the-Isles-of-Scilly-and-Heart-of-the-SW.pdf>

successful application for an Institute of Technology; a University Enterprise Zone and major investments such as the Environmental Futures and Big Data Impact Lab.

A feature of these assets, however, is that they are very much focused around Exeter and to a lesser extent Plymouth which means that Somerset is relatively under-provided for. With most of the two counties classed as 'mainly' or 'largely' rural it is difficult for the smaller towns to offer the critical mass needed to provide local support infrastructure at scale, although the development of the Institute of Technology Centres in Taunton and Barnstaple will help address this issue. Both counties have outstanding Colleges of Further Education, which include a higher education offer. FE specialisms in engineering, nuclear and digital have been the focus of investment in state of the art facilities such as that at the National College for Nuclear. Growth Deal and ERDF funds have been used to lever in investment in co-working and incubator space and the Heart of the South West has been successful in being awarded Enterprise Zone status across Devon and Somerset.

Overview

An internet and documentation search shows that Heart of the South West has a total of 330 R&D infrastructure assets (Table 8). These assets include universities and colleges, research institutes, science parks and enterprise zones, business networks and research and technology organisations.

50% of the assets are associated with the Higher and Further Education sector, which includes innovation-related research centres or groups located within institutions as well as the institutions themselves. Similarly whilst the hospital and medical research centres account for a further 17% of the assets, this sub-sector comprises mainly hospitals.

Table 8. Innovation infrastructure assets by type, Heart of the South by type, 2020

Type of infrastructure asset	Nos	%
University & FE	166	50
Hospitals & medical	55	17
Corporate	30	9
Co-working/incubation and ideation space	23	7
Other	16	5
Research organisations/Institutes	16	5
Business Networks	12	4
Government	7	2
Business support	5	2
Total	330	100

Source: R&D Assets Database, University of Exeter

Excluding those assets which are non-specialist such as co-working space, there are clear strengths in infrastructure support for health; advanced engineering, environment, marine and agriculture/food and drink (Table 9):

Table 9. Innovation infrastructure assets by sector, Heart of the South West, 2020

Specialism	Nos.	%
Health	126	51
Advanced Engineering	31	12
Environmental Intelligence	22	9
Marine	18	7
Agri/Food and Drink	17	7
Digital/Cyber	16	6
Nuclear & energy	11	4
Photonics	3	1
Aerospace	2	1
Aviation	1	0
Defence	1	0
Nuclear	1	0
Total	249	100.0

Source: R&D Assets Database, University of Exeter

Some of the main types of support are explored in more detail below.

Higher education

The Higher Education Sector comprises:

- **The University of Exeter:** UoE is a member of the Russell Group of leading research-intensive universities. Formed in 1955, the University has 25,263 students from more than 130 different countries and a turnover of £449m. It has campuses in Exeter and Cornwall.
- **The University of Plymouth:** Has 19,000 students and an annual turnover of £249m. It features in the Times Top Ten HE Young University rankings
- **Plymouth Marjon University³³:** Was awarded university status in 2013. It has two faculties – the Faculty of Education, Enterprise & Culture and the Faculty of Sport, Health & Wellbeing. It has campuses in Plymouth and Cornwall. MARJON has 2,770 students (2018/19) and generated more than £27m in 2017/18³⁴.
- **Plymouth College of Art:** is an independent art school offering higher education courses in art, design and digital subjects. It is also home to “Fab Lab Plymouth” a digital fabrication laboratory equipped with the latest in digital design technology³⁵. Plymouth College of Art has 1,380 students (2018/19).

Previous sections highlight the research strengths of the local HE sector in relation to the “Research Excellence Framework” which involves an expert review of case studies of

³³ University of St Mark and St John.

³⁴ <https://www.marjon.ac.uk/media/old-2015-website-images/governance-documents/Financial-Statements---July-2018---signed.pdf>

³⁵ <https://www.plymouthart.ac.uk/about/fablab-plymouth/>

research across 36 subject based units of assessment. The assessments show that Exeter and Plymouth Universities are in the top 20 for:

- University of Exeter: Area studies (3rd), Education (8th), Politics and International Studies (9th), History (9th) Sport and exercise sciences, Leisure & Tourism (10th), Sociology (11th), Classics (11th), Clinical Medicine (joint 12th), Theology and religious Studies (joint 13th), Earth systems and Environmental sciences (14th), Physics (16th), General engineering (17th), Biological sciences (18th), Economics and Econometrics (joint 19th), Law (19th)
- University of Plymouth: Clinical medicine (joint 13th).

Another perspective on Heart of the South West HEI performance is via the Leiden rankings, which measure scientific impact, Exeter is in the top 30 for proportion of publications belonging to the top 10% of their field for all sciences (Leiden Ranking 2015-18). One particular strength amongst the fields is Life and Earth Sciences, where Exeter is placed 11th in the world. Plymouth has strength in Physical Sciences and Engineering, placing 13th in the world.

Table 10. Leiden Rankings for Heart of the South West HEIs 2020

Field	Ranking for Proportion of publications belonging to top 10% of field (size adjusted)	
	Exeter	Plymouth
All Sciences	29 th	178 th
Biomedical and Health Sciences	31 st	542 nd
Life and Earth Sciences	11 th	129 th
Mathematics and Computer Science	270 th	N/A
Physical Sciences and Engineering	197 th	13 th
Social Sciences and Humanities	49 th	327 th

Source: CWTS Leiden Ranking 2020

Research institutions within the HE sector reflect these particular strengths, for example in Health/Life Sciences and Advanced Engineering there are:

- **The Exeter Clinical Trials Unit (ExeCTU):** This is a University of Exeter supported facility. The CTU works in collaboration with researchers and clinicians in the design and delivery of high quality and efficient controlled trials and other well-designed studies, addressing important health questions.
- **The Institute of Translational and Stratified Medicine (ITSMED)** at Plymouth University: A state-of-the-art biomedical research building incorporating cutting edge laboratory facilities including: high-level containment facilities, light microscopy / bioimaging service, genomics, mass spectrometry, proteomics and biobanking facilities.
- **The Brain Research Imaging Centre (BRIC)** at Plymouth University offers an Advanced, multi-modal brain imaging facility comprising seven human research laboratories, including an MRI suite, BRIC aims to enable advanced, interdisciplinary brain research leading to improved diagnostics and patient care.
- **The Living Systems Institute (LSI)** at Exeter University pioneers transformative science to engineer control of complex biological systems. LSI merges research in biology and medicine with ground breaking physical sciences technologies and powerful

mathematical modelling capabilities. The cross-fertilisation between disciplines enables LSI investigators to decode biological complexity on all scales, from the molecular to the whole organism and populations. This integrated approach is aimed both at fundamental knowledge and at generating new tools for improving health and treating disease.

- **The Centre for Graphene Science** at the University of Exeter conducts internationally-leading research into graphene. Its work bridges the gap between scientific development and industrial applications of graphene.

As well as their research strengths, the universities are also active in relation to knowledge transfer. At the University of Exeter there are 12 active KTP projects, as well as the R, D and I projects such as the £6.4m of ERDF funding which has been invested in The Impact Lab. This is a partnership project designed to support business growth in Devon, comprising the University of Exeter, Exeter City Futures, the Met Office, the University of Plymouth, Plymouth College of Art, Plymouth Marine Laboratory, and Rothamsted Research.

At Plymouth, the Advanced Composites Manufacturing Centre (ACMC) is another example of Knowledge Exchange facility - it is a leading composites facility based in the School of Engineering. Launched in 1987, it is engaged across a wide range of projects, bridging the traditional gap between academic research and development and the needs of industry.

Further education

There is a significant Further Education sector comprising of 7 colleges in Devon and 4 in Somerset. Four of the colleges are rated by Ofsted as having outstanding provision:

Table 11 Further education colleges and their Ofsted rating, 2020

Devon	Ofsted rating	Somerset	Ofsted rating
Bicton College	Good	Richard Huish College	Outstanding
City College Plymouth	Good	Strode College	Outstanding
Exeter College	Outstanding	Bridgwater and Taunton College	Good
Exeter Mathematics School	Outstanding	Yeovil College	Good
PETROC	Good		
Plymouth College of Art			
South Devon College	Good		

Recent investments include:

- **Bridgwater & Taunton College Advanced Centre for Engineering (ACE):** ACE supports the growth of the advanced electrical engineering industries through: High level facilities for level 2 and BSc Hons learners and the rapidly growing SME sector locator along the M5 and A38.
- **The National College for Nuclear:** This project, forms part of the Nuclear South West Strategy, and creates facilities to meet the training needs of Hinkley Point C through redeveloping and extending existing facilities, demolition and new build, and investment in equipment, plant and machinery. Bridgwater & Taunton College is the principal delivery arm of the Southern Hub, supported by its Energy Skills and Advanced Engineering Centres, the Construction Skills and Innovation Centre at Cannington, University Centre Somerset in Taunton, the South West Nuclear Hub for

research and innovation at Bristol University, Nuclear South West in Bristol, and Campus – EDF's unique national training centre at Cannington.

- **Hi Tech and Digital Centre, South Devon College:** The Centre will provide individuals with the skills that employers need to support their growth in a range of important local Hi-Tech businesses such as; electronics, lasers, fibre, satellite and communications, aerospace, marine, medical and data analysis 'Big Data'. The offer will also extend to creative industries including gaming, app design, digital design, film and digital media, smart clothing and textiles and many others.

Collaborative working in the form of a new **South West Institute of Technology** involves leading employers working together with Exeter University; University of Plymouth; Bridgwater & Taunton College; City College Plymouth; Exeter College; Petroc and Truro & Penwith College. This successful multi-million pound bid by HE and FE is designed to revolutionise digital, engineering and manufacturing technology education across the South West. It will have centres located across Devon, Cornwall and Somerset, with state-of-the-art facilities proposed for Exeter, Truro, Plymouth, Barnstaple and Taunton. Catering for up to 2,500 students from post-16 level to Masters Degree level, the Institute will help put the region at the forefront of digital and engineering education across the UK.

Co-working and incubation space

The 23 sites of co-working/incubation space tend to be heavily focused around Exeter and Plymouth, particularly at Exeter and Plymouth Science Parks, but more recent developments are expanding the available facilities in some of the more rural parts of Devon and Somerset. For instance:

- In **Torbay** the EPIC centre has successfully drawn in European Regional Development Funding (ERDF), Coastal Communities Funding and Growth Deal monies to create a centre of excellence in supporting technological innovation in enabling technologies.
- In **Yeovil**, the iAero (Yeovil) Centre Project funded by Council, LEP and ERDF funds will deliver a purpose-built 2,398 m² research, design and innovation facility in Yeovil to support the competitiveness and growth of the aerospace and associated high-value design and engineering technology supply chains. The Centre will offer high-quality office, light industrial and collaboration space as well as innovation support services and is expected to open in late 2020. It will drive research, development and innovation through the supply chain. Dedicated to rotorcraft technologies, it will enhance design and manufacturing capability across SW, supporting the development and introduction of new innovative processes to the market. Strongly encourage SME facilitation and knowledge transfer.
- At **Bridgwater**, the LEP has secured Growth Deal funding for the Gravity Enterprise Zone which is currently being constructed off the M5 on 635 acres of brownfield land.

Enterprise Zones

Gravity Park is on one of 6 Enterprise Zones in Heart of the South West, others with incubation/co-working space include Airpark, Cranbrook Town Centre, Skypark Exeter, the Science Park Exeter, and Oceansgate, Plymouth. The latter is the country's first exclusively Marine Enterprise Zone.

These will be joined by one of 20 new University Enterprise Zones across the UK which has recently been awarded £800,000 funding designed to stimulate local and regional economic growth. Based at Exeter Science Park, the University of Exeter Enterprise Zone (UEEZ) will build upon an active community of entrepreneurs, innovators, start-ups and early-stage growth enterprises. It will focus on generating and commercialising innovation and

delivering skills that best serve the key sectors in the Exeter and South West economies. For Exeter, these key sectors include environmental data and digital science. The funding will leverage the technical support existing at the Environmental Futures Big Data Impact Lab and strengthen existing business support offered by SETSquared Exeter.

Research organisations and institutes

Heart of the South West has 16 research organisations and institutes. As with the universities, they are focused on Health (6) and Marine (4) but also represent Agriculture (2); Digital (1) and the Environment (1). They include:

Agri-EPI Centre	The Agri-EPI Centre is one of four national Government-led agri-tech centres.
Dartington Service Design Lab+B17:C23	A research and design charity dedicated to improving outcomes for children and young people
Marine Biological Association (MBA)	The Marine Biological Association (MBA) is one of the world's longest-running societies dedicated to promoting research into oceans and the life they support. They run a leading marine biological research laboratory where many eminent scientists - including 7 Nobel prize winners - have carried out their research.
Met Office Hadley Centre for Climate Science and Services	The Met Office Hadley Centre (MOHC) provides climate science and services to help people and organisations stay safe, well and prosperous.
NIHR Exeter Clinical Research Facility	Supports and conducts clinical research studies and is based in a purpose-built unit within the Research Innovation Learning & Development (RILD) Building at the Royal Devon and Exeter NHS Foundation Trust.
Peninsula Clinical Trials Unit (PenCTU)	Conducts single and multi-centre trials and other studies from early human drug trials to public health and health services complex interventions across the University's health and medical research and with external HEI, NHS and business partners.
Plymouth Health Innovation Alliance	Aims to stimulate greater health research, innovation and economic growth within Plymouth and the wider South West
Plymouth Marine Laboratory (PML)	PML develops and applies innovative marine science to ensure a sustainable future for our ocean. It provides evidence-based environmental solutions to societal challenges by applying cutting-edge, interdisciplinary research that benefits society and promotes stewardship of marine ecosystems.
PML Applications (United Kingdom)	A subsidiary of Plymouth Marine Laboratory to facilitate the application of research from PML
QUEX Institute	The University of Exeter and The University of Queensland have partnered to establish the QUEX Institute, a new multi-million pound partnership designed to bolster their joint global research impact. The partnership will strengthen a joint commitment to co-produce research of the highest quality, boost industry and business collaboration, and publish high-level policy reports

	designed to inform and shape key government initiatives across the globe.
Rothamsted Research	Rothamsted Research is a world-leading, non-profit research centre that focuses on strategic agricultural science to the benefit of farmers and society worldwide.
Sir Alister Hardy Foundation for Ocean Science	SAHFOS aims to become a globally recognised leader on the impacts of environmental change on the health of the oceans.
Society for Longitudinal and Lifecourse Studies	Research into the advancement of education through the promotion of interdisciplinary and cross-national understanding and collaboration in longitudinal and life course studies.
South West Academic Health Science Network	The South West Academic Health Science Network (SW AHSN) works to transform the health and patient experience of people in South West England by accelerating the spread and adoption of innovation and quality improvement.
Wild Planet Trust	Wild Planet Trust, formerly Whitley Wildlife Conservation Trust, is a registered education, scientific and conservation charity established in 1957 and based in Devon, UK.
Wolfson Nanomaterials and Devices Laboratory	The Wolfson Nanomaterials and Devices Laboratory works with private and public sector organisations by offering access to expertise and state-of-the art laboratories. It's a clean room based laboratory for leading edge research in nano-spintronics, computer memory and data storage technology, nano-functional materials and biosensors. The laboratory is fully equipped for the exploration of leading edge science and technology, with a wide range of applications in sectors such as communications, defence, aerospace, security and photonic surgery to medical and analytical instrumentation.

Government innovation assets

Although few in number, Government supported infrastructure include 3 world class organisations:

- **The Met Office** is the national meteorological service for the UK. It provides critical weather services and world-leading climate science. It has a supercomputer and expert analysts advise airlines, airports, air traffic control etc.
- **Plymouth Marine Laboratory (PML)** develops and applies innovative marine science to ensure a sustainable future for our ocean. It provides evidence-based environmental solutions to societal challenges by applying cutting-edge, interdisciplinary research that benefits society and promotes stewardship of marine ecosystems.
- **The UK Hydrographic Office (UKHO)** is a world-leading centre for hydrography, specialising in marine geospatial data that helps others to unlock a deeper understanding of the world's oceans.

In addition to this infrastructure within the Heart of the South West there are a number of relevant assets in close Proximity. These include the **SW Aerospace Cluster** which has significant aviation related assets (Bournemouth, Newquay and Bristol), research centres (NCC, CFMS, BRL, IAAPS, DETI), maintenance capability (Bournemouth, Newquay, Gloucestershire), other key universities (Bristol, Bath etc.), electric flight and urban mobility (UAM) expertise.

The University of Bristol is working with Leonardo with respect to electric propulsion. The Catapult Centre for Composites is based in Bristol and is another key area where Heart of the South West would benefit from wider collaboration.

Satellite Applications Catapult South West Centre of Excellence is located at the University of Exeter (Cornwall) and delivered by University of Exeter. European Space Agency (ESA) has a Business Applications Regional Ambassador for the SW and Wales based at University of Exeter (recruitment currently underway for 2020-21).

Culture & Incentives

Both the in-depth interviews and online survey explore employers' perception of the innovation ecosystem locally: in terms of its maturity and their interaction with elements of it. Overall, there appears to be a disconnect between the high quality support available to companies and awareness and knowledge about it amongst SMEs. There is recognition that the ecosystem is beginning to change for the better but is characterised by silo working and limited outreach. There is a perception that Exeter is the home of most support. Nevertheless, the in-depth interviews demonstrated that employers are willing to seek out the best specialist support available regardless of location.

The innovation ecosystem

Just over half of employers considered that the innovation ecosystem was 'emerging' (24%) or at an early stage (29%); 17% that it was 'dormant' and 17% were unsure. Of the key players, employers were most likely to be engaged with other entrepreneurs and engagement with all other groups was reported to be 'low' or 'very low'. Only minorities considered the support they received from any of the groups (entrepreneurs/government/universities/ corporate and risk capital) as effective.

Employers were more likely to be negative than positive when asked to agree or disagree with a number of statements, in particular in relation to HE and entrepreneurial skills and in terms of the availability, timeliness and ease of data - the latter reflecting an earlier point about a lack of awareness of what support there is.

- Regional government's business programmes are effective in assisting businesses (-32%)
- Regional universities are effective in supporting businesses to innovate (-7%)
- Data available for helping businesses is timely and easy to understand (-42%)
- Regional HE is effective in developing entrepreneurial skills (-42%)
- Regional HE is effective in developing people with the right technical skills (-30%)

The in-depth discussions illuminated these survey findings. The overwhelming view was that there is **no such ecosystem** in the Heart of the South West, or if there is it is disjointed, with Business South West bringing people together informally: "No – there might be an ecosystem that could support us but it is not visible to me." The point was made by a number of interviewees about a lack of collaboration and silo working. There is a lot going on but "I'm

not convinced that there is a coherent network that enables people to have conversations and collaborate across the silos they're in"

Asked who they would consider the main players in the system locally, interviewees mainly identified the universities and businesses: *"Universities are key to the system"*. It was variously said that they have the knowhow, are not expensive and help support recruitment. One interviewee identified a broader range of:

- Academics
- SMEs and corporates
- Government
- Local networks
- Finance

Several mentioned the lack of big business in the region (a) to bring the recognition and (b) to lead any system, *"We need to bring in large organisations like Babcock to capitalise on the marine aspirations in Plymouth... There are huge opportunities there."* However, whilst business leadership is seen as crucial, for smaller companies there is a dilemma in that they do not want large companies to be the only business representatives, but the time commitment is a big ask, so whereas there was a desire that smaller businesses should have a role, there is little time for them at their stage of development/size to take on this role. One interviewee noted that Digital Taunton had been set up by businesses to fill a gap because there is an absence of government bodies promoting engagement and collaboration so that companies have taken on the role themselves.

The main view from the in-depth interviews was that the ecosystem was at an 'emerging' stage with activity starting up which is in the process of developing the support needed. Only one interviewee thought that the ecosystem was 'established' but he thought it had plateaued and was not growing as much as it could, mainly because of image and a lack of recognition for hi tech clusters in the sub-region. But a number mentioned that rurality poses its own issues: *"Unlike Silicon Valley where universities/innovation centres and investors feed off each other due to their proximity, in a rural area such as this it is more effort to gain exposure to those innovation networks."*

Use of support infrastructure

Against this backdrop, employers were contacted for an Innovation Employer Survey 2020 conducted online during July 2020 and were asked about their engagement with and views on the support ecosystem. The results should be treated with some caution as they rely on a small sample (41) which is unlikely to have had any significant contact with the wide ranging support available. Key points made were:

- 59% felt part of the innovation ecosystem.
- 58% had participated in events in the region, primarily innovation and entrepreneurship education (1 in 3) and Innovate UK events (1 in 5). Use of local resources such as SETSquared and Business Bootcamp was low at 2%, although of course many of the respondents were from the more rural parts of Devon and Somerset where access/distance would be more of an issue.
- Of those who had not participated in any activity to support innovation and entrepreneurship the main reason was that they were unaware of them (85%); the events are not of interest (20%) or they 'Aren't for people like me.' (20%).

To a certain extent these findings chime with employers' views expressed in the in-depth interviews, with the key difference being that online survey respondents tended to be from micro businesses and the in-depth business interviews were from a wider range of small, medium and large enterprises. As a result, all those interviewed by telephone had

benefitted from support in growing their businesses – with universities most likely to be mentioned (not necessarily in the region) followed by Innovate UK, Business West and other businesses/entrepreneurs in the sector or supply chain. It was interesting to note that around half of the support accessed was from national sources (and international in respect of ARPA) rather than local support.

Interviewees were very positive about the help they had had from these sources. In particular, the national funders and catapults, such as Innovate UK, SBRI and DASA were highlighted. The DTI Export for Growth programme was said to be very useful in developing an export strategy. One business cited the BBSRC programme of supporting PIPS internships (Professional Internships for PhD Students) as good practice. Another considered that the 'Tech Nation Rising Stars Programme' provided a good model of infrastructure support. Business West was said to be very effective with highly professional and knowledgeable staff.

Engagement with universities largely depended on the specialisms of the company. Exeter and Plymouth Universities were mentioned but also Oxford, Cambridge, UCL, Southampton, Manchester and Cardiff. One company had a lab at Stanford University and another at Singapore University.

These areas of support accessed highlighted a number of factors:

- Companies want the best support there is and are prepared to seek it from national (and international) players rather than necessarily depending on local sources. The disadvantages of distance can be overcome.
- The universities are instrumental in providing the high level interns/recruits needed either through BBSRC, CASE or Aimhigher. Further, it was said that having a relationship with the universities helped plug entrepreneurs into other initiatives.
- Businesses have very specific specialisms and are seeking out specialist support for particular issues such as exporting or product development and testing.

Several entrepreneurs made the point that their time is precious and although there are good support agencies it takes some legwork to find them: *"Time is a huge challenge."* In turn this means there has to be a balance between costs and benefits of engagement with the support network. This underlines the point made in the online survey about a lack of awareness of the offer; there is a huge range of support available but a lack of a clear pathway as to who is best placed to provide the support needed.

What could be better?

Companies thought that there was a need for balance between requiring businesses to seek out support (a passive ecosystem) and support organisations approaching businesses (a proactive ecosystem) and that currently the balance is tipped too far towards the businesses with insufficient pro-activity of the part of the support organisations and too much effort required to get connected. *"No-one has held our hand and said, 'welcome' come and meet these companies, these are the venture capitalists and these are the university people you need to be talking to and here are the other corporates who will be useful. That doesn't happen."* Most of them thought that what was available was good quality but not joined up, *"so much is word of mouth – we need to know where to go for IP advice or export advice etc."* Allied to this is a lack of awareness of the role of the council and confusion as to the difference between council support services and Business South West.

It was further suggested that more help could be directed at scale up rather than start up in terms of support and training. Some interviewees suggested that there was not enough linkages at a strategic level between Plymouth and Exeter Universities; and that too much effort is focused on Exeter rather than the rural parts of the rest of the sub-region.

Regeneration and development

The LEP area has attracted significant funds for regeneration and economic development. In total, the Heart of the South West has received £239.1m in "Growth Deals" awarded by the UK Government through the Single Local Growth Fund, created in the 2013 Spending Review. The LEP estimates that up to 22,000 jobs could be created, 11,000 homes built and up to £260 million of public and private investment generated as a result of this funding³⁶. Specific projects being funded by the Growth Deal include³⁷:

- Projects supporting Hinkley Point C nuclear power station – this major development presents enormous opportunities to local people who can train to work there, and to companies in the supply chain.
- Projects to maximise employment, productivity and innovation – the development of the Growth Hub, a source of specialist advice on all aspects of business development and a route to finding business investment and reaching new markets.
- The deal will create new 'Mobile 4G Connectivity', a scheme to improve access to mobile internet in parts of the South West which currently have poor coverage.
- Investment in skills and science parks in places like Exeter, Plymouth and Bridgwater will help start and grow dynamic businesses in sectors likely to see the biggest growth in the next ten years, areas like environmental science, marine renewables and nuclear energy.

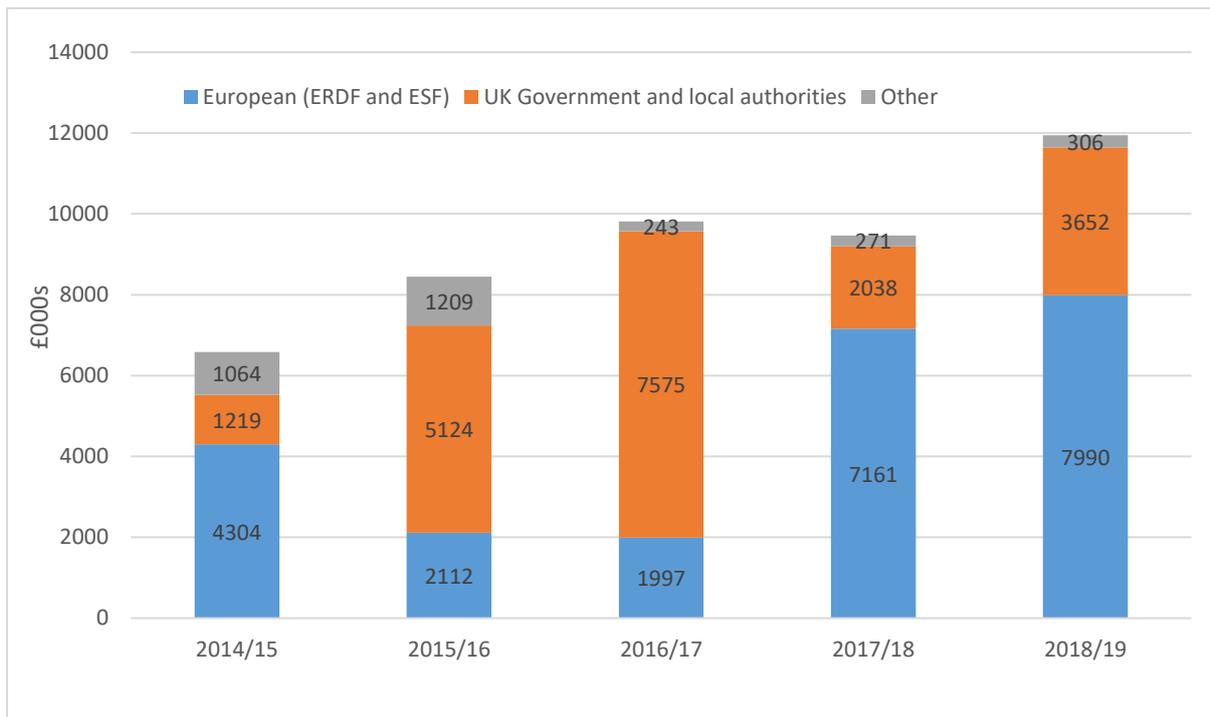
The LEP area has also received £21.5million from the UK Government's Growing Places Fund. The fund is designed to support infrastructure projects that might not otherwise. Examples include Matford Green Business Park, Exeter Science Park and Federal Mogul.

The HE Provider Business and Community Interaction survey also collects information about the income HEIs receive from regeneration and development programmes. Figure 24 shows the HEIs in the Heart of the South West received almost £12m in income from these sources in 2018/19 with the total value rising most years since 2014/15. The composition of this income between European and UK sources varies from year to year – but over the period European funding accounted for around half (51%) of all regeneration and development funding received by HEIs.

³⁶ <https://commonslibrary.parliament.uk/research-briefings/sn07120/>

³⁷ <https://news.cision.com/heart-of-the-south-west-local-enterprise-partnership/r/minister-to-sign--270-million-heart-of-the-south-west-growth-deal,c9657409>

Figure 24. Income from regeneration and development programmes, HEIs in the Heart of the South West, 2014/15 to 2018/19.



Source: <https://www.hesa.ac.uk/data-and-analysis/business-community/regeneration>

This European Funding has funded innovation and technology transfer projects such as the Impact Lab in Exeter.

6. E-CAP

This chapter explores the characteristics of the Heart of the South West's entrepreneurial capacity or "E-CAP". In doing so, it explores similar capital dimensions to the previous chapter, namely:

- Human capital
- Funding
- Infrastructure
- Demand

Human Capital

According to *The Well-being of Nations: The Role of Human and Social Capital*, human capital is a measure of the "knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being"³⁸. The ONS has published estimates of the UK's stock of human capital through people's expected lifetime earnings, one of the recommended international methods³⁹ and has recently consulted on a proposed indicator approach to measuring different components of human capital. In the absence of expected lifetime earnings data for entrepreneurs, this report draws on a number of proxy indicators to describe the characteristics of the Heart of the South West's human capital from an entrepreneurship perspective. More specifically, the section explores:

- Self-employment and employment in managerial and business-related occupations
- Highest qualifications of employed residents
- Proxies measuring the availability of entrepreneurship skills
- The skills pipeline
- Employer demand for specialist skills
- Graduate retention and employment
- Access to leadership and management training
- Future of work trends

Self-employment and managerial occupations

One way that the human capital can be understood through an entrepreneurship prism, is through levels of self-employment and employment in occupations that are likely to require entrepreneurial skills. Around 162,000 Heart of the South West residents described themselves as self-employed when responding to the Labour Force Survey during April 2019 to March 2020. This is equivalent to almost one-fifth (19%) of the employed population aged 16 and over – one of the highest proportions of all LEP areas and statistically higher than the England average (15.5%).

Entrepreneurial skills, however, are also demanded in a range of occupations held by the self-employed *and* employees. For example, the Heart of the West has almost 100,000 residents working as corporate managers and directors and other managers and proprietors (12% of all in employment) - many of whom are working in roles that require entrepreneurial

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<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/humancapital/estimates/2004to2018>

³⁹ Ibid.

skills. A further 88,200 work in professional or associate professional occupations within business, media and public services (10 per cent of all in employment).

Highest qualifications within the workforce

Research shows a positive relationship between qualification levels and earnings: for example in 2018 the average premium in lifetime earnings for those with an undergraduate degree or equivalent, compared to people with A levels or equivalent, was 34%⁴⁰ (although this premium has declined steadily in recent years, from 45% in 2004). Those LEP areas with higher proportions of graduates in their population are therefore likely to have higher levels of human capital than those areas with lower shares of graduates. While more than a quarter of million Heart of the South West residents who are either in work or are looking for work hold a degree level qualification or above, the proportion that does so, at 31%, is lower than the England average (37%) and is significantly below the proportions observed in the Country's most innovate LEP area such as London (55%), Oxfordshire (47%) and Enterprise M3 (45%)⁴¹. Rather, local residents are more likely than the national average to hold qualifications at Level 2 or 3 (42% compared to 35%); and are less likely than the England average to hold no qualifications at all (6% compared to 7.5%).

Entrepreneurship skills

Entrepreneurial skills take many forms: although they combine a variety of technical, management and personal skills, there is no clear established definition, and as such they can be difficult to measure. Entrepreneurial skillsets need to be at once balanced and diverse⁴². This is an area that has had decades of study, as Forbes notes that suggested key traits include risk-taking propensity, locus of control, energy level, and need for achievement, as well as alternative interpretations involving particular profiles based on the so-called "Big Five" personality traits, openness, conscientiousness, extraversion, agreeableness, and neuroticism⁴³. The OECD, meanwhile, have identified three main categories: technical, business management, and personal entrepreneurial⁴⁴. Entrepreneurialism is also linked to leadership and management: while many studies have shown that access to a highly skilled workforce is linked to higher productivity, it is the way in which or the extent to which skills are deployed that ultimately determines how much value they generate for the business. The quality of the leadership and management is central to the effective skills utilisation

Given the lack of data on the prevalence of these skills in the labour market proxies are used to provide an indication of their existence (or otherwise):

- Highest qualifications held by managers, directors and senior officials; and
- The likelihood of an enterprise to have formal business plan, training plan or training budget.

The proportion of managers who have a degree level qualification or above is frequently used as a proxy indicator for leadership and management quality. Fewer than two-fifths (37%) of manager, directors and senior officials working in the Heart of England LEP area

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<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/humancapital/estimates/2004to2018#human-capital-of-people-with-a-masters-or-phd-degree>

⁴¹ Annual Population Survey, January to December 2019 accessed via NOMIS on 18th August 2020.

⁴² <https://www.forbes.com/sites/jordandaykin/2018/09/25/key-skills-of-an-entrepreneur/>

⁴³ <https://www.forbes.com/sites/ryanwestwood/2017/01/09/the-traits-entrepreneurs-need-to-succeed/>

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https://skillspanorama.cedefop.europa.eu/sites/default/files/EUSP_AH_Entrepreneurial_0.pdf

were qualified to Level 4 or above in 2011, a figure well below both the England average (44%) and that of the most productive LEP areas such as Thames Valley Berkshire (51%). Furthermore, while the UK Employer Survey 2015 found that while employers were more likely to say that they offered training to managers than other occupational groups, the proportion of managers who had trained was lower, possibly due to managers being (or considering themselves) less likely to have a need for training. Where skills deficiencies were identified in the survey these were more likely to be due to their not having received the appropriate training (affecting 36% of managers not deemed to be appropriately skilled).

The UK Employer Skills Survey also explored the extent to which enterprises adopted formal business planning practices. It found that three-fifths (60%) of enterprises within the Heart of the South West LEP area have a formal business plan - slightly below the national average of 62% and five percentage points lower than the proportion found in leading LEP areas, such as Coast to Capital. Over half (53%) of employers in the Heart of the South West have neither have a formal training plan or budget, indicative of a serious lack of ability to plan or develop human resources within their business.

The UK Innovation Survey also provides useful proxy indicators exploring the extent to which firms' had adopted a range of organisational and marketing innovations. Arguably, firms managed by people with strong entrepreneurial capabilities will be more likely to adopt organisational and marketing innovations. More specifically, the survey explores the adoption of:

- New business practices (e.g. supply chain management, business re-engineering, knowledge management, lean production and quality management)
- New methods of work organisation; and
- Marketing innovations.

LEP level analysis of the 2017 UK Innovation results published by the Enterprise Research Centre⁴⁵ suggests that that the Heart of the South West ranks:

- 33rd for the adoption of new business practices (21% of firms)
- 14th for the introduction of new methods of work organisation (21% of firms)
- 17th for implementation of new marketing concepts and strategies (14% of firms)

Skills pipeline

Apprenticeships

In the Summer Budget of 2015, the then Cameron-led Conservative Government announced an ambition to improve the quality of apprenticeships and for an additional 3 million apprenticeship starts in England by 2020 to be funded by an Apprenticeship Levy on UK employers with annual paybills of more than £3 million⁴⁶. The policy however has failed to have the desired impact with the number of starts nationally⁴⁷ and locally has fallen in recent years (Figure 25).

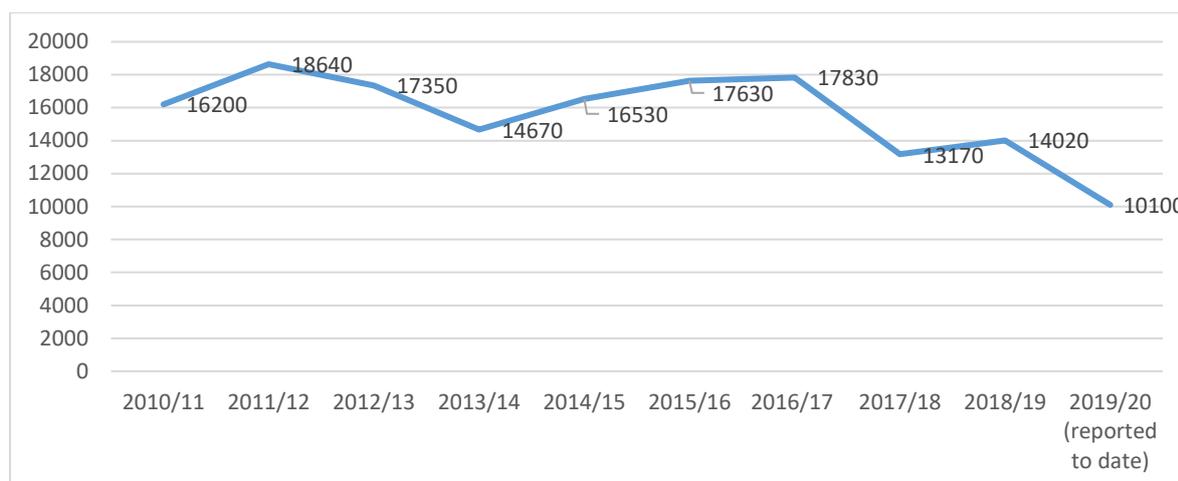
⁴⁵ <https://www.enterpriseresearch.ac.uk/wp-content/uploads/2019/06/ERC-ResReport-Benchmarking-local-innovation.pdf>

⁴⁶ <https://www.gov.uk/government/publications/apprenticeship-levy/apprenticeship-levy>

⁴⁷

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/900237/Further-education-and-skills-July-2020-main-tables.xlsx

Figure 25. Number of Apprenticeship starts by year, Heart of the South West LEP



Source: Gov.uk - Apprenticeship starts since May 2010 and May 2015 by region, local authority and parliamentary constituency as of Q3 2019/20

Focusing on the 10,100 starts reported to date across the Heart of the South West in the current year:

- most (59%) were aged under 24 with the remainder (41%) aged 25 and over.
- the distribution by level was such that the largest share of starts was at advanced⁴⁸ level (42%), followed by Intermediate⁴⁹ (37%) and then Higher⁵⁰ and degree⁵¹ (21%).
- More than one-fifth (21%) were in STEM related frameworks (i.e. manufacturing technologies, information and communication technology, or science and mathematics). This is broadly comparable to the England average (22%). STEM-related apprenticeships tended to be more popular at advanced (Figure 26) than other levels.

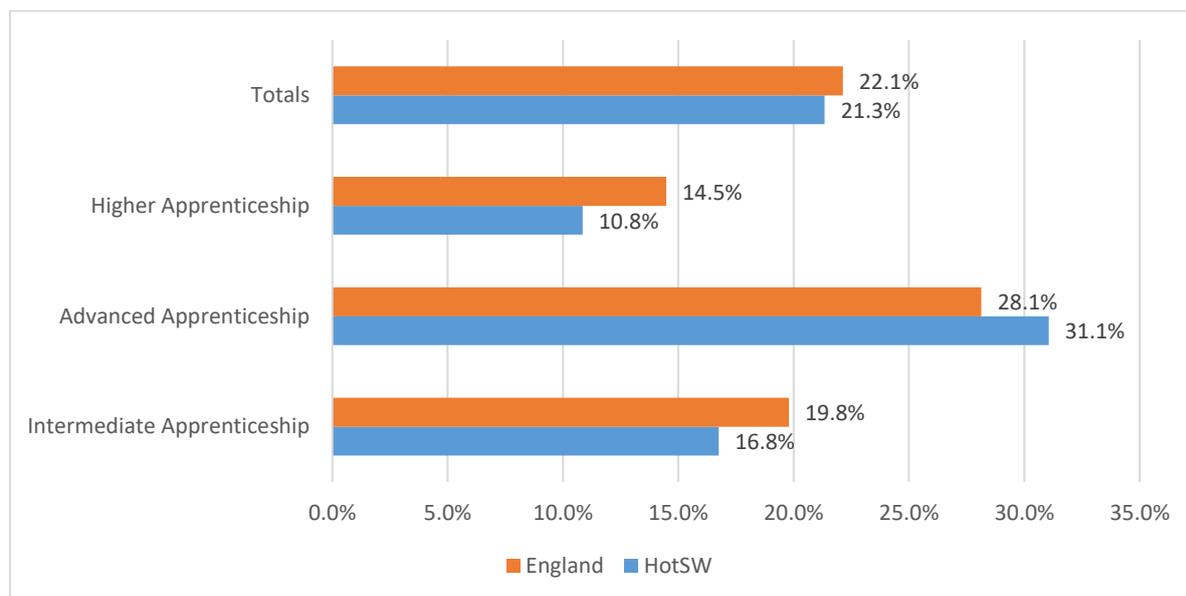
⁴⁸ Advanced apprenticeships are level 3 qualifications and are equivalent to A level passes.

⁴⁹ Intermediate apprenticeships are level 2 qualifications and are equivalent to GCSE passes at grades A*–C (4–9 on the new system).

⁵⁰ Higher apprenticeships lead to qualifications at level 4 and above.

⁵¹ A degree apprenticeship involves gaining a university degree while you work (level 6 or above).

Figure 26. Percentage of Apprenticeship Starts in STEM Frameworks, England and Heart of the South West, Q3 2019/20



Source: Gov.uk - Apprenticeship demographic, sector subject area and local authority district PivotTable tool: starts and achievements Q3 2019 to 2020

While still representing a relatively small share of overall starts, degree apprenticeships have become more common in recent years.

Apprenticeships are less popular among young people than full time education although they are more popular locally than the national average. For example, 4% of young people across England who left school during the summer of 2017, were reported to be in a 'sustained apprenticeship' between October 2017 and March 2018. The comparable percentages for local authority areas in the Heart of the South West were 8% in Plymouth, 7% in Devon and 6% in Somerset. Apprenticeships were only a less popular destination among school leavers than the England average in Torbay (3%)⁵².

It is a similar picture among older students (leaving Key Stage 5). Data for the same year, suggests that one in ten (10%) students aged 16 to 18 nationally entered a sustained apprenticeship. The proportion was again higher than the national average in all local authority areas in the Heart of the South West but Torbay (8%) and was highest in Plymouth (16%). The figures for other areas were closer to the national average: Devon (11%) and Somerset (12%).

GCSE & A level attainment

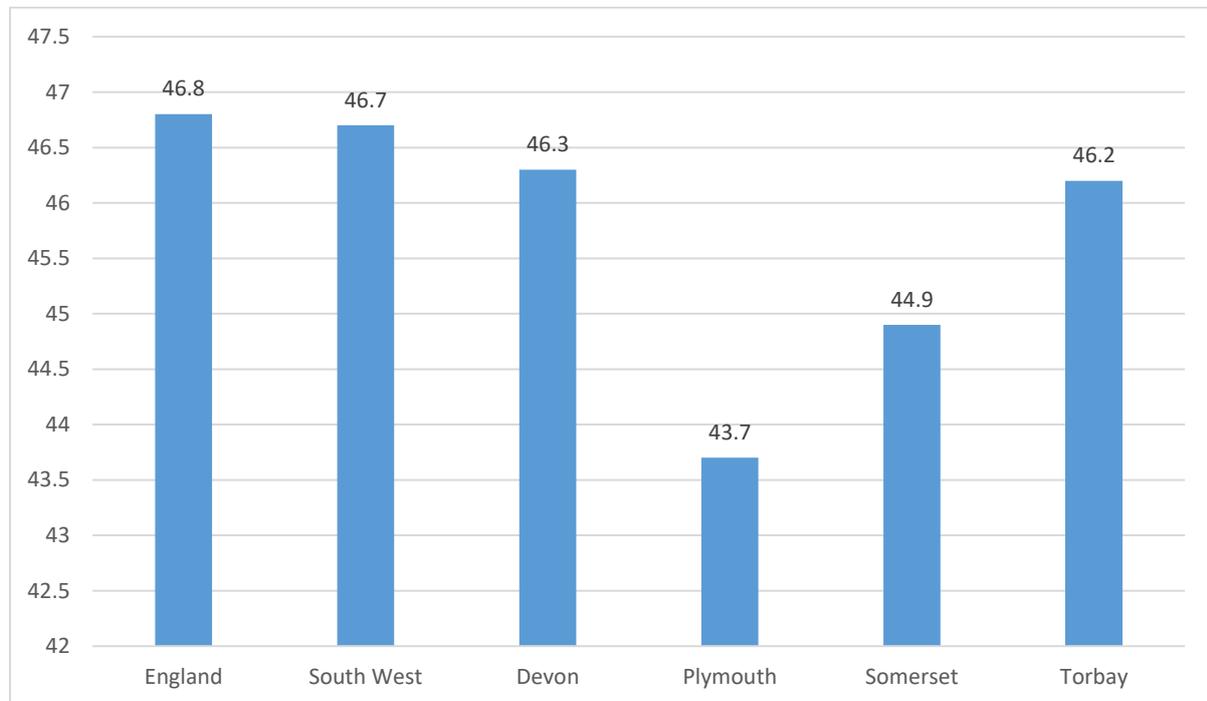
Destinations are in part driven by attainment with the most able students tending to opt for full time further and higher education although degree apprenticeships are an attractive proposition for young people looking to obtain a degree while working (and avoid the associated costs).

⁵²

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/840016/Destinations_of_KS4_and_16_to_18_students_2018_-_key_stage_4_local_authority_and_parliamentary_constituency_tables.ods

For GCSE attainment, the new standard measure of attainment is the Attainment 8⁵³ score. Results for last years' school leavers (those leaving education in 2019) suggests that average levels of attainment are marginally below the national benchmark (46.8) in Devon (46.3) and Torbay (46.2) but notably lower in Somerset (44.9) and Plymouth (43.7)(Figure 27).

Figure 27. Average Attainment 8 score by Pupil, England, South West and Heart of the South West LEP area, 2018/19

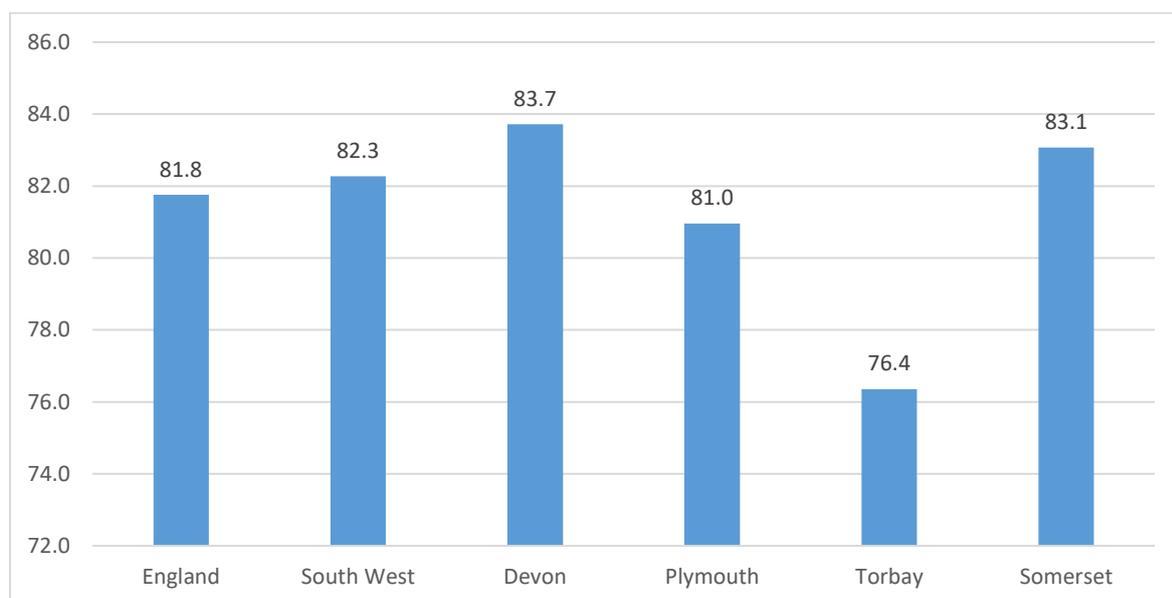


Source: Gov.uk - Key stage 4 performance 2019 (revised)

Level 2 is the minimum standard of education required in order to provide a foundation for sustained employability. The proportion of young people achieving this level of qualification by age 19 is therefore another useful barometer of human capital. Performance on this measure across the LEP area is mixed with young people in this cohort educated in Devon (83.7%) and Somerset (83.1%) being more likely than average (81.8%) to achieve this standard and those educated in Plymouth (81%) and Torbay (76.4%) less likely than average. As nationally, the proportion of 19 year olds gaining (at least a) Level 2 qualification has fallen consistently in each of the last 5 years, reversing an earlier 10 year trend of year-on-year improvements.

⁵³ This is calculated from a student's highest grades in English and Maths (weighted double), three Ebacc subjects (sciences, computer science, geography, history and languages) and an open group of three that can be any remaining GCSEs, and other approved qualifications.

Figure 28. Percentage of Young People Aged 19 in 2019 Achieving at least Level 2 Qualifications, England, South West and Heart of the South West upper tier Local Authorities



Source: Gov.uk - Level 2 and 3 attainment by young people aged 19 in 2019

The percentage of 19 years olds achieving a Level 3 qualification across the Heart of the South West is lower than the England average (56.9%) in all local authority areas⁵⁴: Torbay (56.6%), Somerset (55%), Devon (53.5%) and Plymouth (47.1%). Progression into higher education is much less common locally than the England average – even in local authorities that have similar levels of attainment at age 19. For example, in Torbay where the proportion achieving Level 3 qualifications is only marginally lower than the England average, only 21% enter higher education to study qualifications at Level 4 or above compared to 35% across England as a whole⁵⁵. The proportions progressing into higher education is also low in Devon (27%), Plymouth (27%) and Somerset (27%).

Employer demand for specialist skills

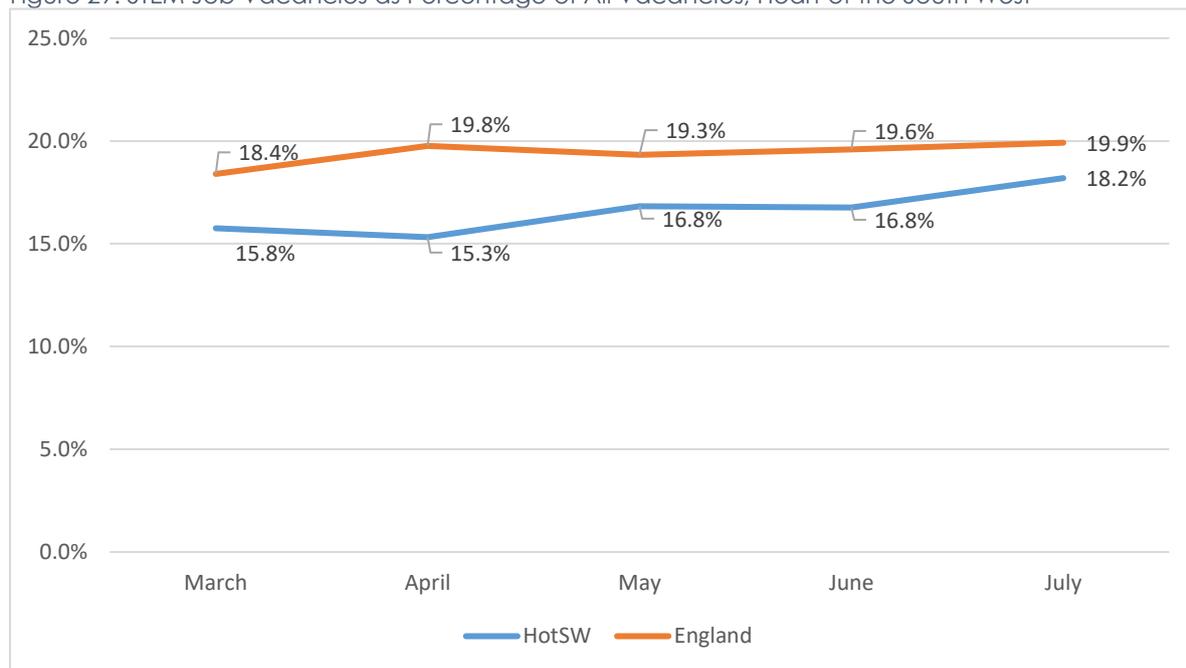
Vacancies

A relatively new innovation in labour market information is the availability of live vacancy statistics. These sources use web-scraping technologies to collect information about job postings on company and recruitment agency websites and make this available to subscribers. According to Labour Insights a web-scraping tool designed by Burning Glass Technologies. The number of vacancies listed in July 2020 was one-fifth (20%) lower than in March 2020 when the lockdown was introduced. The number of postings for STEM-related vacancies also fell over this period but by not as much as all vacancies (7%). Nonetheless, demand for STEM jobs as a percentage of all vacancies is increasing on both a national and a local level.

⁵⁴ Source: Gov.uk - Level 2 and 3 attainment by young people aged 19 in 2019

⁵⁵ Source: Gov.uk - Destinations of KS4 and 16 to 18 (KS5) students: 2018

Figure 29. STEM Job Vacancies as Percentage of All Vacancies, Heart of the South West



Source: Burning Glass – Labour Insights

In terms of specific STEM occupations that were in most demand in July 2020: the largest numbers of vacancies were posted for programmers and software development professionals, which had more than twice as many vacancies as the next most in-demand occupation, engineering professionals.

Graduate retention

Graduate retention – the proportion of graduates who secure employment in the same area where they studied – varies considerably by region and subject studied. Many graduates are attracted to London rather than entering employment in the region of their higher education provider. The capital accounts for 22 % of the graduate workforce, including 38 % of those who gained a first or upper second from a Russell Group university. The so-called 'graduate brain drain' is particularly true of graduates who moved to a region in order to attend university⁵⁶. Region data shows that of those graduating from HEIs in the South West, 47 % (7,420 graduates) of UK domiciled leavers stayed in the South West for employment in 2016/17. The other most popular destinations for South West graduates to work are London (21 %) and the South East (15 %). 50% of South West domiciled students who moved away to study, returned to SW to work in the region⁵⁷

Each year around 17,300 students graduate from HEIs in the LEP area⁵⁸ with undergraduates accounting for the majority of this total (72 %). The remainder are students completing postgraduate study either at masters (25 %) or doctorate research level (3 %). Around 41 %

⁵⁶ <https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2017/graduate-retention-meeting-local-skills-needs.pdf>

⁵⁷ <https://www.hesa.ac.uk/news/29-06-2017/sfr245-destinations-of-leavers>

⁵⁸ In 2018/19, there were 17,310 qualifiers across all levels of study at Heart of the South West HEIs

of all graduates leaving HEIs in the Heart of the South West (7,050 students) attained qualifications in STEM-related subjects.

Analysis of 2016/17 data reveals that Plymouth College of Art retained the highest share of its graduates (52 % particularly within Plymouth) followed by MARJON (34 %), the University of Plymouth (32 %) and the University of Exeter (15 %). These rates are driven in part by subjects chosen - with retention rates nationally in 2015/16 highest among students achieving qualifications in education (75 %) or subjects allied to medicine (71 %) - but also the degree classification achieved and the share of locally domiciled students with the student population.

Graduate employment

Analysis of the distribution of employed first degree graduates across industries published by the Smart Specialisation Hub⁵⁹ reveals a broadly consistent pattern across 'home' LEP areas. Of the fourteen industrial categories, health and social work accounts for the largest share of graduates (19 % in the Heart of the South West in 2013/14) followed by: education (14 %) wholesale & retail trade (12 %); professional, scientific & technical activities (12 %). Mining & manufacturing accounts for a relatively small share (5 %).

Access to leadership and management training

Section 2.7.4 presents key indicators on employer investment in training derived from the UK Employer Skills Survey. The section concludes that whilst local employers compare favourable against the England average for the percentages of employers offering and employees engaging in training, it performs less well on measures that describe the intensity of training. It also reported that less than one-third of companies that had trained staff had provided supervisory (31%) or management (30%) training. There is little evidence to suggest that lack of training opportunities local in a relevant subject area is a barrier to training for more than a minority (5%) of companies who do not train their staff.

The University of Exeter's Centre for Entrepreneurship as provides a variety of options for encouraging entrepreneurship and developing relevant skills. This includes modules that can be taken as part of an undergraduate degree, with the "With Proficiency in Entrepreneurship" addition to the degree title available to those taking sufficient credits; postgraduate and MBA modules in entrepreneurship and the entrepreneurial mindset; and the Student Startup team to support student ambitions, based in a specialist area of the Innovation Centre. SETsquared Exeter also provides support for students, university researchers and new business founders, helping to develop new businesses and enable regional innovation⁶⁰. Eurobarometer surveys showed that only 17% of respondents in the UK agreed that their school education made them interested in becoming an entrepreneur, compared to an average of 28% and a peak of 65% in Portugal⁶¹, suggesting a need for this sort of support at the tertiary and earlier education levels.

Future of work trends

The University of Exeter recently published a research brief summarising the literature on the future of work and in particular how demand for occupations and skills is likely to change in future⁶². Whilst this work - and the literature on which it is based - pre-dates Covid-19, the

⁵⁹ [http://smartspecialisationhub.org/lep-profile/heart-of-the-south-west-Heart of the South West-lep/](http://smartspecialisationhub.org/lep-profile/heart-of-the-south-west-Heart-of-the-South-West-lep/). Table C2.

⁶⁰ <https://setsquared.exeter.ac.uk/about>

⁶¹ https://skillspanorama.cedefop.europa.eu/sites/default/files/EUSP_AH_Entrepreneurial_0.pdf

⁶²

https://www.exeter.ac.uk/media/universityofexeter/iib/marchmontskillsandemploymentobservatory/FoW_research_brief_FINAL.pdf

principal drivers for change (i.e. technological change, globalisation etc.) are likely to continue suggesting that the main trends (at least) seem likely to prevail even though the aggregate level of demand for labour is impossible to predict in the context of Covid-19 and uncertainties around the UK's ongoing trading relationship with the European Union.

Over the longer-term, it seems likely that structural trends will continue, with marketed services, and financial and business services in particular, accounting for a greater share of employment, while production sectors accounts for a diminishing share. However, the rate of growth and decline may be different from that projected before Covid-19.

Several researchers have explored which occupations, industries and localities are most 'at risk' from automation. Clearly, the risk and opportunities are not equally distributed across the economy. Some estimates suggest that around 30% of jobs in the UK are at high risk of automation with the distribution of these jobs in the Heart of the South West such that almost two-fifths (39%) of these potential jobs losses are in two key industry sectors: wholesale & retail trade and manufacturing. Jobs most at risk from automation contain a high degree of work involving physical activities in highly structured and predictable environments (such as data collection and processing). These tasks tend to be most prevalent in manufacturing, retail trade and middle-skill jobs.

At the same time, the key drivers of occupational change over the decade 2017-2027 are expected to be related to changing ways of working within industries and the way in which technological change, especially IT, impacts on the need for different skills. Among those occupations that have a 'high probability' of increasing their total share of employment are: chief executive's and senior officials, natural and social science professionals, engineering professionals, research & development managers and information technology and telecommunications professionals.

Across Western Europe demand is expected to grow for:

- Technological skills: mainly advanced IT skills and programming and basic digital skills but also scientific research and development advanced data analysis and mathematical skills and technology design, engineering, and maintenance.
- Social and emotional skills: including entrepreneurship and initiative taking; leadership and managing others, advanced communication and negotiation skills, adaptability and continuous learning, interpersonal skills and teaching and training others.
- Higher cognitive skills: including creativity, complex information processing and interpretation, critical thinking and decision making, project management and quantitative and statistical skills.

The organisation of work is also likely to change with improved digital capabilities leading to new ways of working (i.e. remote working) a trend that is likely to continue in a post Covid-19 world.

Funding

The Heart of the South West (Heart of the South West) is generally characterised by relatively low levels of innovation within the business base, which is predominantly SMEs, and especially small and micro businesses. Lower levels of innovation are considered to in turn contribute to the LEP area lagging other parts of the UK in terms of productivity.

As part of addressing this, the LEP has signed a Memorandum of Understanding with Innovate UK (IUK), part of UK Research & Innovation, agreeing to work together to increase

take-up of Innovate UK funding amongst SMEs across the area. A recent study⁶³ provides evidence and recommendations in order to support this joint ambition.

Whilst the south west as a whole has a relatively proportionate 'share' of Innovate UK funding, the majority of this – around 80% - is concentrated around the West of England/Gloucestershire area. The Heart of the South West (Heart of the South West) LEP secures a smaller share of the Innovate UK award value than would be expected given their share of the national business population. In comparison, West of England LEP punches above its weight in terms of accessing Innovate UK funding with a greater share of funding secured than its share of the UK's business base.

The relative performance of the LEP in terms of accessing IUK funding can be measured by the 'IUK funding gap', representing the discrepancy between IUK funding secured by organisations within the LEP area and what would have been expected should they have performed in line with the national average. The Innovate UK funding gap observed across the LEP area includes both discrepancies between the level of funding awarded to the LEPs enterprises (i.e. a 'private sector funding gap') and research organisations (i.e. an 'academic beneficiary funding gap').

In Heart of the South West LEP, whilst the private sector funding gap represents a larger volume of Innovate UK funding, proportionally the gap is significantly smaller than in neighbouring CIOS LEP, with Innovate UK grants secured by businesses in Heart of the South West LEP having been £63m and the gap estimated to be £85m, suggesting that Heart of the South West LEP's businesses are relatively more successful in accessing IUK grants than CIOS' enterprises but with a 57% funding gap.

Where IUK awards funding to academic bodies within the two LEP areas, had these been proportionate with the national average a further £47m of R&D could have been expected to have been awarded - £11m in CIOS and £36m in Heart of the South West. This academic IUK funding gap is considered likely to be largely due to the relatively low presence of research organisations within the two LEPs rather than reflecting on the performance of individual research institutions within the two LEP areas themselves. Factors contributing to the relatively low uptake of Innovate UK funding.

A range of interrelated factors have been identified as contributing to the IUK funding gap observed in the two LEP areas including the impact of the:

- LEP areas' economic geography, business and research bases
- a relatively low density of population, businesses and economic activity compared to the UK as a whole
- relatively few large businesses

The LEP has a higher number of businesses in knowledge intensive manufacturing sectors than the national average. This has not however translated into Innovate UK funding awards as expected. Knowledge intensive manufacturers ordinarily have a high propensity to receive Innovate UK funding, higher than service sector businesses, where the LEP has a lower share of businesses than is the case nationally. The reduced chance of knowledge intensive manufacturers in the LEP being Innovate UK beneficiaries is due to there being few large manufacturing enterprises in the LEP, with a concentration of knowledge intensive manufacturing SMEs.

⁶³ <https://heartofswlep.co.uk/wp-content/uploads/2019/02/Accessing-Innovation-Support-in-Cornwall-the-Isles-of-Scilly-and-Heart-of-the-SW.pdf>

Businesses are less likely to transition beyond Innovate UK 'starter products' (defined as Vouchers, SBRI, Smart and KTPs predominantly) to the larger funding products, primarily collaborative R&D and large project investments.

Businesses are less likely to lead Innovate UK collaborative R&D (CR&D) projects or other high value products. Business characteristics that could help targeting and increase the uptake of Innovate UK funding were identified. There are two profiles of businesses which have many businesses that could be targeted to increase the take up of Innovate UK funding are:

- Patent holding business that have not yet secured IUK funding
- Businesses reporting export sales that also hold one or more patents

The mapping conducted indicates that there is clustering of businesses having been identified as innovative around:

- University centres where there are also a limited number of large beneficiaries of Innovate UK funding.
- Localities where there are bases of operation for large multinational companies, which themselves tend to be significant beneficiaries of Innovate UK funding.

Outside these clusters, there is a spread of innovative businesses, especially near major roads and around urban areas.

A report on *SME Access to Finance for Innovation in the Heart of the South West, Cornwall and the Isles of Scilly, 2019* identified a number of factors impacting on the relatively low amounts of IUK funding awarded. These included:

The dominance of **small and micro** enterprises and the limited number of large multinationals and anchor businesses in the two LEPs. Larger enterprises were considered as drivers of innovation through collaboration with SMEs and spinning out SMEs either as employees take opportunities outside the large business or as associated researchers and academics capitalise on working with large businesses.

The high number of businesses where the owners have **low growth ambitions** due to lifestyle decisions.

Small teams in SMEs **lacked the breadth of skills** to cover all they must do – beyond winning funding – to successfully innovate (such as developing strategy, understanding customers, partnering to access skills and facilities etc.). Stakeholders considered that SMEs have shortages in specific key skills, particularly those needed to write the bid. Many SMEs had difficulties accessing bid writers and proposal-writing was being undertaken by managers in their private time because of this.

The Employer Innovation Survey 2020 and in-depth interviews confirmed this analysis. 56% of employers expect to invest in R&D in the next 12 months but the main obstacle to start up and/or growth identified in the survey was 'lack of access to funds/capital' cited by 59% of respondents. The in-depth interviews explored this in more depth and showed that the start-ups had struggled with finance. Their experience of banks and borrowing was that:

"Investment has been very difficult, without the commitment from the market it makes it difficult to get finance. There is an aversion to innovation and R&D across the board."

"It's too painful to work with the banks, we have used angel investors and family and friends."

We've not accessed capital, "There is no venture capital, especially here in the South West. We wanted to buy the building next door but couldn't get a loan because we are a

defence company and banks are 'morally opposed' to lending us money....We can't really grow. There is no venture capital. Everything is short-term."

Interviews with 3 investors/financiers whilst not statistically representative provided a useful alternative perspective on this issue. They suggested that there is a rich supply of investors but a lack of demand for equity funding largely because of an owner/manager ethos and a desire amongst entrepreneurs to manage their own destiny. Local entrepreneurs were said to be 'bank reliant'. There is a perceived reluctance to bring in external expertise and a lack of ambition for growth and international sales. Entrepreneurs tend to lack a particular skillset such as a finance function or a sales function.

Where funding is refused it was said that local companies are not "investor ready". They need support to present proposals in the right way which takes time and money with third parties to create investible propositions. The real gap is in demand stimulation.

Two of the investors considered that start ups tended to rely on friends and family for finance and that funding was not an issue at that level but that there is a need for an ecosystem of alternative providers at the £50k+ scale up range. Another felt that the local market for funding around £100k to £1m was challenging and that local companies are not known to London investors.

Employers and investors in the in-depth interviews considered that the South West lacks a presence or national profile unlike the Northern Powerhouse or Midlands Engine. There is a need to change the narrative of the Heart of the South West from an economy based on tourism to one which supports hi tech innovation whilst offering a high quality of life. There are businesses worthy of the world stage that are hidden from view. In turn this means it is difficult to engage London-based investors in the region. Additionally the sub-region lacks the presence of sizeable business support functions in terms of accountancy and solicitors, i.e. it lacks the 'big four'. The Heart of the South West sub-region was considered to be too small to attract investors from outside the area and a larger south west area is needed to generate the demand for bigger loans at scale.

Infrastructure

Since 2014, government has invested £240 million in Growth Deal projects in the Heart of the South West LEP area. The first two rounds of Growth Deals (£130.3 million in July 2014, and £65.2 million in January 2015) led to investment in strategic and local transport infrastructure, including enterprise and innovation centres and new buildings or facilities for colleges. The most recent Growth Deal (£43.57 million in November 2016) is funding ten projects designed to deliver "higher value careers, better infrastructure and improved productivity".

Transport and broadband

Transport and digital connectivity is one of four key priority areas identified in the Heart of the South West LEP area 2018 Productivity Strategy⁶⁴. Poor transport links to education and work opportunities are a barrier to social mobility, with West Somerset identified as the worst performing area for social mobility in the whole of England⁶⁵. Key infrastructure – such as broadband, employment land, transport, intercity connectivity and connectivity with the rest of the region, the rest of the country and internationally – has historically been a significant barrier to productive business.

⁶⁴ Stepping up to the Challenge. Productivity Strategy, Heart of the South West LEP area Partnership 2018

⁶⁵ State of the Nation_2017 – Social Mobility in Great Britain, Social Mobility Commission, November 2017

The Heart of the South West LEP area Partnership Productivity Strategy pledged to secure a bigger proportion of national investment in transport infrastructure and will work more cohesively as an area to agree priorities that will unlock growth and to look to exploit opportunities in electric and autonomous vehicles, whilst also encouraging existing sustainable modes of transport (such as cycling).

Inter-area and international transport routes are vital to the region's success, as well as secondary corridors and the broader arterial road network and rail network. A key issue for road and rail is resilience, with the region's strategic transport infrastructure vulnerable to flooding. Capacity and journey times are also considerations for meeting the transport needs of people and businesses. There are two main routes from London into Heart of the South West: the M4/M5 and the A30/ A303. These are prone to disruption, coupled with a lack of resilience in the rail network, largely due to flooding. There are additional difficulties due to the highly rural nature of much of the LEP area: the most recent statistics on rural accessibility suggest that access to key services took twice as long compared to urban areas, with particularly heavy impact on hospitals and centres of employment with at least 5,000 jobs⁶⁶

88.6% of the area has Superfast or Ultrafast broadband coverage (31.1% Ultrafast, although up to 85.2% in Plymouth); 88.5% has 4G coverage; and 8.4% of premises have full fibre coverage (up to 17.9% in Torbay). However, this varies significantly across the region.

⁶⁶https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/862322/Rural_accessibility_2017.pdf

Table 12. Broadband speeds and coverage, Heart of the South West, 2020

Geography	SFBB/UFBB availability (% premises, >30Mbps)	UFBB availability (% premises, >300Mbps)	Full Fibre availability (% premises)
DEVON	85.5	22	11.2
PLYMOUTH	96.6	85.2	1.3
SOMERSET	87.9	11.8	3.4
TORBAY	94.1	58.1	17.9
HEART OF THE SOUTH WEST	88.6	31.1	8.4

Source: Ofcom Connected Nations – Spring 2020 Report

Employment land

A recent study by Hardisty Jones Associates⁶⁷ at the end of 2019 looking at the demand for, and availability of employment land across Heart of the South West points to a much stronger industrial market than office market in terms of both current and future demand. This is indicative of the nature of business sought in the area, which is consistent with the current industrial structure dominated by production, rather service activity.

The study has also identified a currently allocated employment land supply totalling 848 ha. This includes significant concentrations in Sedgemoor and East Devon including Enterprise Zone sites, accounting for almost 50% of total supply. Both of these districts are identified growth locations for the LEP. Categorisation by public or private ownership is available for 93% of this total. On this subset of the data, 16% (124.3ha) is in public ownership with 84% (667.8ha) in private ownership.

A total of 228.4 ha of employment land is recorded as currently 'available'. This equates to around 27%¹ of total supply. However, the percentage varies significantly across local authority areas, from just 15% in Exeter to 78% in Torridge. Data was also collected on a site by site basis, with information provided on site constraints. Based on the eight local authorities that provided a site-by-site schedule for their area², only 67.6ha of allocated supply is reported as 'unconstrained' i.e. no constraint reported³. This is less than 9% of the total supply figure (by land area) for the eight authority areas that reported.

Nine of 13 local authorities provided responses that allowed comparison of supply and demand. Five of the nine reported that current office demand could be met through current allocated sites. This reduced to only two of nine for industrial supply. There were constraints on meeting demand for seven of the nine authorities that responded. Four authorities reported not being able to meet either current office or industrial demand.

Commercial agents indicated a slightly different picture. They reported that, for the most part, the currently available supply of good quality office premises is insufficient to meet demand. It was noted that demand for new office premises is concentrated in and around urban conurbations, for a variety of reasons such as access to labour and availability of amenities. However, there have been very few new speculative office developments in Exeter, Plymouth, Taunton, and Bridgwater during the last decade or more. This has negatively impacted the Heart of the South West market's ability to satisfy any demand for

⁶⁷ Heart of the South West Employment Land Study – Dec 2019

Grade A or B+ office premises. It was noted that the market is able to satisfy demand for lower grade office premises in towns and rural locations in most cases.

Commercial agents reported that the currently available supply of industrial premises is also insufficient to meet demand, in keeping with local authority responses. Overall there are reported to be fewer constraints on commercial development of industrial premises, however there is not enough floor-space being delivered to satisfy demand. Sites are regularly being developed in some areas, particularly those adjacent to strategic transport nodes where demand is strong.

The responses suggest that the lack of suitable and available supply has had both negative effects on the Heart of the South West economy in the past, and that it is continuing. It is notable that East Devon, which has the greatest concentration of available supply is reporting frequent failure to fulfil enquiries.

Market Failure: the study identifies three primary areas of concern:

- Infrastructure challenges and other physical constraints;
- Viability, as a result of either specific costs or a simple lack of return relative to costs; and
- Unwilling landowner and other land ownership issues.

Issues of viability and infrastructure affect more than 50% of employment land by area. These are therefore widespread issues. Land ownership issues are affecting 35% of employment land by area.

More than 40% of sites are facing a major constraint. Analysis has identified that most (85%) sites over 10ha are subject to at least a minor constraint. The issue of constraints is widespread and distributed across the entire Heart of the South West area, it is not a localised issue nor limited to a particular site typology. This has implications in terms of the potential scale of response that may be required. It is a fundamental issue facing the issue of employment sites and premises delivery.

166ha of allocated land is reported as having major infrastructure constraints and 284ha has minor constraints. These constraints are faced across the Heart of the South West area. Infrastructure constraints are most prevalent on sites of 10-50ha in size, however, the issue is not limited to this market sector. The one market segment that is facing the least pressure of this constraint is very small sites (less than 1ha), however, these will not be sufficient to deliver strategic employment land requirements across the Heart of the South West area.

113ha is reported to suffer from major viability constraints, with a further 293ha suffering from a minor constraint. Again, this issue impacts upon sites of all sizes, although there is an increasing incidence of this market failure as site size increases. In terms of major viability constraints these appear to be particularly acute in the Devon, Plymouth and Torbay part of the Heart of the South West. Almost 90ha is reported to have major land ownership constraints, with a further 186ha suffering from a minor constraint. Land ownership issues are the least prevalent of the three core market failures, however, they do have impact across the size spectrum. They affect half of all sites in the 10-50ha category. There appears to be a greater concentration of issues across the Devon, Plymouth and Torbay part of the Heart of the South West, although there are also clear issues in South Somerset.

More than a third of all sites reviewed face multiple constraints, totalling some 393ha. 85% of sites larger than 10ha have been identified as facing multiple barriers. Less than a third of the sites reviewed are facing no constraints at all. Half of the sites that are facing no constraint at all are within the smallest (less than 1ha) category. It is clear from the incidence of multiple constraints that a single, narrow intervention to tackle only one constraint is unlikely to

overcome the issues facing many sites. Even with support to tackle one constraint, some sites are not coming forward.

Although based on a very small sub-sample, the in depth interviews with entrepreneurs conducted for this study gives weight to the above analysis. 1 in 3 employers mentioned the difficulty in securing premises for growth. It was suggested that there is no ready pipeline of premises, with start-ups catered for but not scale ups. There are inconsistent planning policies across the counties and limited understanding on the part of councils as to the cost of relocating for growth. This may mean companies will have to move outside the sub-region in order to grow.

Business support provision

A recent business support mapping study for the Heart of the South West region identifies and lists national, area-wide and local schemes to support business growth and for those looking to start-up a new enterprise. The national resources include extensive online resources and business guidance backed-up with a national Business Support Helpline service. The next tier are Government funded programmes such as the Start Up Loans scheme or export advice through the Department of International Trade that are available countrywide. The European Structural Funds remain a key funding source for many programmes with part funding from the European Regional Development Fund (ERDF) featuring in mainstream area-wide schemes such as the Growth Support Programme, High Value Manufacturing Advisory Programme and Export for Growth.

Many of the business support schemes, particularly those that could be considered the mainstream business support schemes, offer a combination of advice, guidance, workshops and information covering a range of business issues. Supplementing this scheme provision are initiatives, funding or finance support options and extensive sources of information and guidance. Broadening the business support definition further, there are skills related support schemes and initiatives both for those in work and for those seeking employment. The provision of schemes and support is ever changing as new funded services are launched and others come to their end.

The following table gives a useful overview of the mainstream business support schemes and sources of funded support for businesses and for those looking to start-up. It does not list all 75+ schemes and 300+ sources of support and guidance to which the Heart of the South West Growth Hub team have signposted businesses but does give a picture of the business support schemes and funded support available across the Heart of the South West LEP area.

National Resources	Business Support Helpline Gov.uk - online resources Business is Great – online resource (renamed businesssupport.gov.uk)
HotSW LEP area wide business support	Heart of the South West Growth Hub (ERDF) HotSW Growth Support Programme (ERDF) Start Up & Grow Programme (ERDF) Enhance Social Enterprise Department for International Trade / (ERDF) Export for Growth Innovate UK / Innovate2Succeed / Enterprise Europe Network Mentoring – Business Mentors SW / Cornerstone Hinkley Supply Chain Start Up Loans High Value Manufacturing Advisory Programme Inspire / Scale-up support Chambers of Commerce / FSB / NFU Better Business for All (BBfA) Skills Support for the Workplace & various skills related programmes EU Space Agency Ambassador Programme Grants such as RDPE Growth Grants Funding competitions / Investment calls (typically short-term windows)
Local business support	Local Authority business support & guidance (occasionally grants) Local Authority funded Adviser support Managed workspace / Enterprise Centres Local Action Group / LEADER funding (fully allocated in most areas) Targeted programmes (often linked to ERDF in Devon / Transition area) Local initiatives or support (typically available in application windows)

Source: Heart of the South West Growth Hub – Business Support Mapping Report, 2020

Short-term initiatives, including several offering grants or funding competitions, continue to be a common feature of the business support ‘map’. These initiatives would not typically be categorised as a mainstream business support scheme option due to the short-term and often sporadic nature of the funding or support on offer. The Growth Hub team seek out such initiatives. There is a dedicated section of the Growth Hub website for any initiative offering funding, thus bringing together all similar initiatives in one place.

Deeper analysis is required to fully understand the gaps in business support provision and how well the provision that is available meets the needs and demands of business owners and managers. As an example, whilst there are several schemes offering finance related support there is not a dedicated finance advice scheme available to businesses. Similarly, there are limited grant options available and indications remain that accessing finance is an issue for many businesses.

Feedback from the in-depth consultations indicates that the range of support might by its very nature cause an issue for employers as they are unsure who to turn to. Employers thought that there was a need for balance between them seeking support (a passive ecosystem) and support organisations approaching them (a proactive ecosystem) and that currently the balance is tipped too far towards the businesses with insufficient pro-activity of the part of the support organisations and too much effort required to get connected. *“No-one has held our hand and said, ‘welcome’ come and meet these companies, these are the venture capitalists and these are the university people you need to be talking to and here are the other corporates who will be useful. That doesn’t happen.”* Most of them

thought that what was available was good quality but not joined up, “so much is word of mouth – we need to know where to go for IP advice or export advice etc.”

These views were echoed in the investor interviews who considered that the support is dispersed, there is a need for more outreach. Both the horizontal linkages between support agencies are lacking as are the vertical linkages between the executive and operational staff.

Demand:

Key markets of opportunity for Heart of the South West

A recent nuclear mapping study⁶⁸ has identified significant and ever-increasing opportunities within the nuclear sector for both nuclear and non-nuclear suppliers in the region. A number of supplier-specific organisations exist to aid suppliers, particularly SMEs, to meet the requirements of the supply opportunities. On a regional scale, the study points out to opportunities for greater collaboration between civil and defence sectors, especially with regard to waste disposal. This could reduce costs and help meet Government targets.

Furthermore, defence is a significant and growing area of demand for Heart of the South West businesses. Nationwide, the Ministry of Defence (MOD) spends approximately £18.7 billion with UK industry and commerce, about £290 for every person living in the UK. The MOD estimates that it spends £5.1 billion in the South East and £4.4 billion in the South West with industry and commerce, which is 50.8% of the UK total. Of the £18.7 billion defence spend that goes to UK industry and commerce, the second largest beneficiary sector is shipbuilding and repairing. The two regions with the highest per capita defence spending are the South West (£810 per capita) and the South East (£570 per capita). According to the same set of estimates, the defence sector support 121,150 jobs nationwide. The MOD estimates that it supports 33,900 jobs in the South East and 30,000 jobs in the South West; the South West has the highest defence sector to total employment ratio, 1 in 70 jobs is supported by defence spending with industry and commerce.⁶⁹

The Government is a key supporter of the defence sector (including the promotion of defence exports) through initiatives such as the Defence Growth Partnership, which encourages a more competitive and internationally focused defence sector. This is set against the renewed UK imperative to operate globally with a forward presence and against a new operating concept that recognises the need for ‘sub-threshold’ persistent operations that offset the need to fight. Cyber and Space are recognised as the domains that add to the traditional environments of land, sea and air.

The MOD has called upon industry nationally to meet the operational requirements of their Integrated Operating Concept 2025 through a future procurement process that integrates key capabilities across the five operational domains of Sea, Land, Air, Cyber and Space; **the Heart of the South West distinguishing capabilities evident in the region in maritime, aerospace, land vehicle and intelligence related systems support this approach but are not the entirety of the solution.** These are well represented by current prime contractor capability leadership, research support and clustered businesses engagement and provide the key assets around which a coherent and well-developed growth strategy can be effectively implemented to realise the growth potential.

⁶⁸ <https://heartofswlep.co.uk/wp-content/uploads/2018/11/The-Nuclear-Opportunity.pdf>

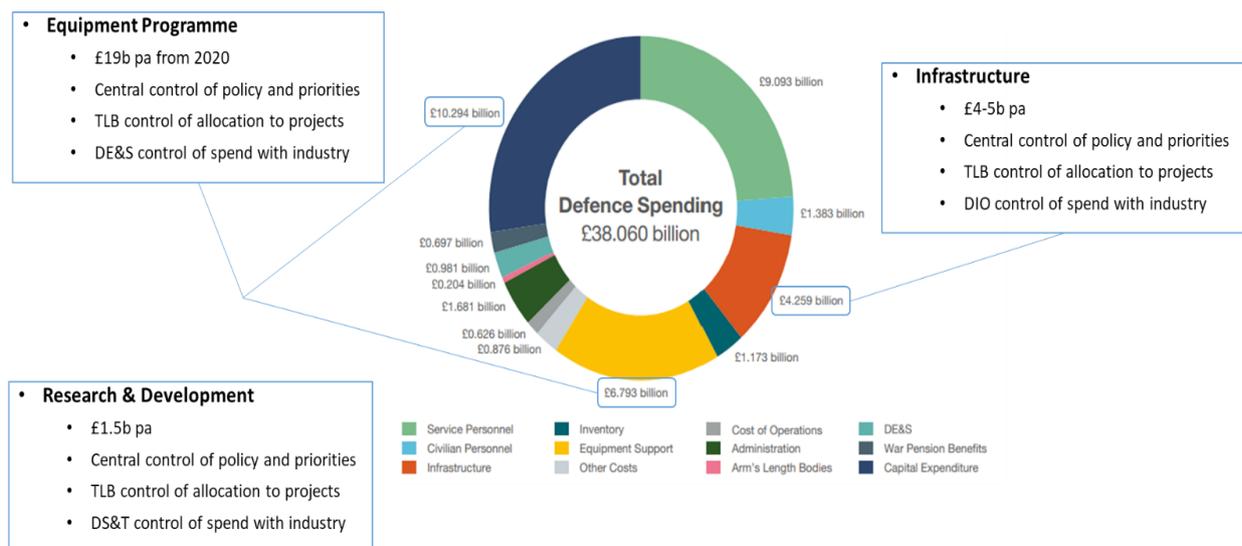
⁶⁹ <https://heartofswlep.co.uk/wp-content/uploads/2018/11/South-Coast-Marine-Cluster-Final-Report.pdf>

The MOD are looking to work with Industry Partners, across Government and with Allies to validate and implement the Integrated Operating Concept 2025 (IOpC25) through an experimentation plan and process that integrates information across the 5 domains of Sea, Land, Air, Cyber and Space. Heart of the South West Business Support Services will need to offer appropriate domain consultancy to share the emergent awareness of the concept and its validation with supply chains.

In accordance with North Atlantic Treaty Organisation (NATO) guidelines, the UK's defence spending amounts to at least 2 percent of its gross domestic product. In the Strategic Defence and Security Review 2015 (SDSR), the government committed to spending £186 billion on equipment and equipment support in the ten years from SDSR 2015.⁷⁰ At a national level, 2017 saw spend achieve closer to 2.1% so it remains encouraging that the level is sustained. For Heart of the South West this means that the key capabilities for which it has prominence (distinguishing capabilities) in the delivery of major programmes, funding is likely to be maintained and the opportunity for longer-term growth can be considered as positive rather than negative.

The potential of the defence market nationally is illustrated below. The figure shows a breakdown of the balance of the UK Defence annual budget, which many regional prime companies already play into.

Figure 30 Defence spending in the Heart of the South West, 2020



Source: Heart of the South West Defence Mapping Study, 2020 – MoD Spend Breakdown

There is significant regional employment with defence suppliers spread across the UK. These include shipbuilding and maritime services in the South West and Scotland, combat aircraft in the North West, submarines in Cumbria and aerospace in the Midlands. For Heart of the South West this implies an imperative for action in addressing the skills gap to sustain and deliver growth. Leveraging the training capabilities within the region that are associated with

⁷⁰ HM Government (2015). National Security Strategy and Strategic Defence and Security Review 2015 A Secure and Prosperous United Kingdom. HM Government; London.

Defence, through academic training programmes and those of the Primes, will be key to addressing the skills gap to meet sector demand and opportunity. This is a broad range that covers engineering, digital, cyber security and can be directly addressed in conjunction with the skills initiatives directed by and conjunction with the partner authorities.

It is worth noting from a MOD strategic concept perspective it is entering a new phase that places it on the cusp of a significant change driven from geopolitical and technological roots. It is confronted by new threats that foresee the 'Information Age' whereby it is transitioning through technological, economic and political inflection points that challenge the defence enterprise as existing and new adversaries have the potential to wipe out any advantages that the West have accrued during the 'Industrial Age'. The Information Age demands a new approach to warfare where ubiquitous data, cloud connectivity, artificial intelligence, autonomy and genetic enhancement are allied to advances in traditional technologies with the promise of revolutionising warfare. This in turn drives a new operating concept for defence, Integrated Operating Concept 25 (IOpC25) that cuts across all elements of its enterprise in the way it conducts its operations and integrates more seamlessly with wider Government, Allies and industry partners and across all of the domains in which it operates.

Cyber security is seen as a Tier 1 threat to the UK and attracts ministerial oversight, delivered through solid funding of the National Cyber Security Centre. MOD have specifically, and uniquely within Government taken advanced steps to increase its resilience from the impact of cyber compromise through the DCPD initiative and compliance regime.

Given the commonality for many of the capabilities (cyber) that see utility across sectors and the procurement opportunity arising from the other larger Government Departments (e.g. Home Office and Foreign and Commonwealth Office) we can foresee wider potential for growth by extending the reach from defence more widely.

Heart of the South West LEP is well-positioned to consider the opportunities for collaboration with other LEPs to maximise procurement opportunities, develop supply chains, enhance cluster engagement and leverage Centres of Excellence and share learning.

Alignment of Heart of the South West businesses to the market in order to maximise the potential for strategic value and future productivity will address the ambitions of the UK Prosperity Agenda; Heart of the South West businesses will need to show an organisational maturity level that is "defence ready" across the dimensions of business, products, services and supply chain.

[New areas of investment and factors that attract investment](#)

The most recent Ernst & Young UK Attractiveness Survey⁷¹ from May 2020 gives an indication of areas of investment demand that are currently found attractive in UK markets. The UK was found to have performed well in attracting FDI in 2019. Project numbers were up 5% in a relatively flat European market and the UK surged ahead in digital tech, attracting 30% of the European market. A 38% increase in research and development (R&D) projects and a rise to first place in Europe for the number of new projects secured were further signs of a transforming economy.

Additional evidence of change comes from the shift in the geographic balance, as the US and new origins of FDI help to compensate for a slowing of European investment. However, while London's stellar year is to be celebrated, the 2019 results (analysed in more detail in

⁷¹ https://www.ey.com/en_uk/attractiveness/20/uk-attractiveness-survey

their supplementary research with Centre for Towns) demonstrate very clearly that more needs to be done to rebalance the UK economy geographically. A nationwide approach to ensuring everyone can benefit from the potential of digital tech is the number one priority suggested by EY.

Investors were planning significant investment in the UK in 2020 before the pandemic struck and they remain relatively optimistic about the UK's resilience and future potential. Digital tech, climate change and health were cited as high potential opportunity sectors over the long term. Investors also provided a clear steer on what future policy should focus on. The availability of finance and government support and the quality of infrastructure and skills were identified as key factors to driving future investment.

Turning to the FDI performance by the various regions of the UK in 2019, the UK's performance was more mixed than in the areas discussed above. The most striking feature is a surge in projects secured in London, which leaped by 17.5% to a decade-high of 538. This sharp increase ended a period of three years in which London's complement of projects had remained relatively steady around the mid-400s. The strength of London and its standout success in Europe are to be celebrated — it continues to be identified by investors as the leading European city for technology and innovation.

However, in stark contrast to London's success, the rest of the UK suffered a decline in projects of 4.2% to 571 projects announced. These shifts in performance resulted in London securing 48.5% of all UK project investments — the highest proportion recorded in the two decades we have been tracking the data. London aside, flows into most of the UK's other historically strong FDI cities were reasonably stable. Manchester retained its status as the leading city outside of the capital in 2019 despite an 8% drop in project numbers. Birmingham strengthened its hold on second place, with its project count rising by 36% to 30, only three behind Manchester.

There were strong performances not only from Birmingham, but also from Bristol (up from 10 projects to 15) and Aberdeen (almost doubling from 8 to 15), but overall the relative performance of cities was largely unchanged with minor shifts in rankings.

While the UK's leading cities were generally thriving in terms of FDI in 2019, the performance of the UK's regions and devolved administrations was more mixed. Scotland had a strong year, partially reversing the decline seen in 2018 with a 7.4% rise in projects to 101. However, the picture across the other UK regions outside London was patchy.

There were strong showings from Yorkshire and the Humber and the East of England, while the North West registered a more modest increase. Meanwhile, the most severe decline in absolute and percentage terms was in the West Midlands, where projects declined by 19 or 22.9% from 2018. Project numbers were also down sharply in Wales, the North East and Northern Ireland, while the South East and East Midlands suffered smaller declines.

Research undertaken by Ernst & Young LLP (UK) and the Centre For Towns (presented in more detail in a companion report to this one¹) clearly demonstrates how skewed the UK's FDI projects have become toward London and the other major cities and hence that the smaller places in the UK have received significantly less investment. In 1997, 31% of FDI went to London, Edinburgh and the 10 members of the Core Cities Group excluding Belfast. In 2019, the equivalent figure was 67%, around a third larger share than the portion of GDP accounted for by this group.

The share of UK FDI was lower in 2019 for every type of place identified by the Centre for Towns in its proprietary terminology compared to 2017, except for the group of cities mentioned above. The declines were most severe in medium-sized towns, down from a 20%

share to 6%, and coastal towns where the share in 2019 was just 0.9% of total UK flows compared to 8% in 1997. These shifts pose real challenges for economic policy and all the signs are that without concerted action, the divide will widen.

We have seen how important digital tech is to the UK's FDI and in 2019, 83% of digital tech investments were in the major cities identified above and a further 10% in large towns. As a result, most places in the UK received no investment in the UK's fastest-growing and most successful sector for FDI. The message from the geographic analysis of FDI in 2019 is clear: more needs to be done to ensure the benefits of FDI extend beyond London in particular, but also from all the UK's cities to the UK's towns and smaller settlements. Achieving a greater participation in the digital economy is a priority if the UK is to deliver on its ambition to rebalance economic activity geographically and to level up the country.

Investors' evolving views are really brought into focus when we consider the criteria they use to define an attractive FDI location. Asked to rank the factors influencing their decision to select a particular country, investors' responses clearly reflect the reality of the pandemic — not only in focusing on a destination's level of success in addressing the crisis itself, but also in stressing the importance of the availability of finance and government support and stimulus.

More long-standing priorities such as skills and infrastructure still rank highly, and new themes such as climate change policy and technology adoption now also feature strongly. What is most striking is the relatively small gap between criteria. In previous surveys, skills and infrastructure have stood out as the key criteria, but we now have a much broader set of factors influencing investors.

We have seen the trend toward more purposeful business gather momentum in recent times, and climate change and the growth of geographic inequalities had already become priorities for the UK Government. The advent of COVID-19 appears to have accelerated these shifts as the drivers of the balance between economic growth, the environment and lifestyle have been brought into sharper focus.

While the broad shape of the results is similar between investors asked about the UK and those questioned about Europe — technology adoption and skills are equally important to both groups of investors surveyed — the differences do provide a steer on the priorities for the UK going forward. Investors are keener to understand the availability of private finance in the UK than across Europe, and the role the government is likely to play in the economy both through the response to COVID-19 and the provision of infrastructure — both are higher priority issues for investors considering the UK than those considering Europe.

With the risk of a trend away from globalization, the UK must move quickly to create the most attractive environment possible to maintain its appeal to foreign investors. As our survey clearly demonstrates, this requires an integrated set of solutions that will require collaboration across multiple domains.

[Public Sector Procurement](#)

Public procurement is a key driver for innovation in the local economy. Innovation and public procurement has the potential to drive forward innovation in the local economy - particularly in the manufacturing and construction industries - and more generally in relation to sustainable development.

7. Appendix 1 – UK Regional Performance on High-Growth Enterprises (ESRC UK Local Growth Dashboard, 2019)

Figure 1: Start-ups per 10,000 Population in the UK (2018): Quartiles

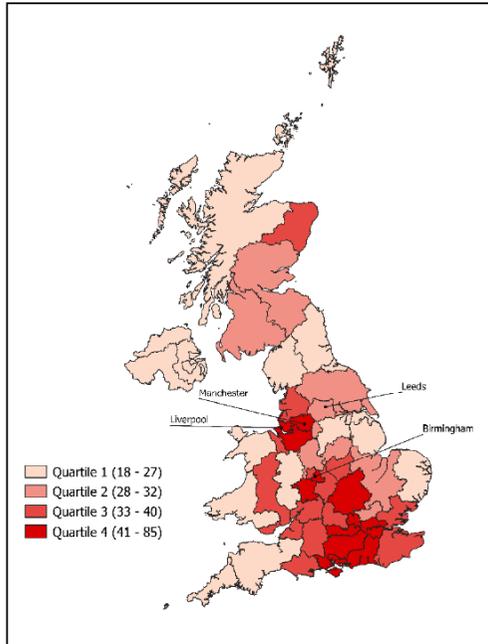
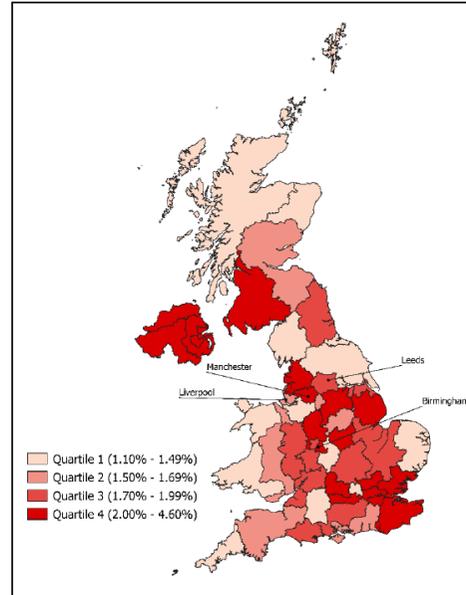
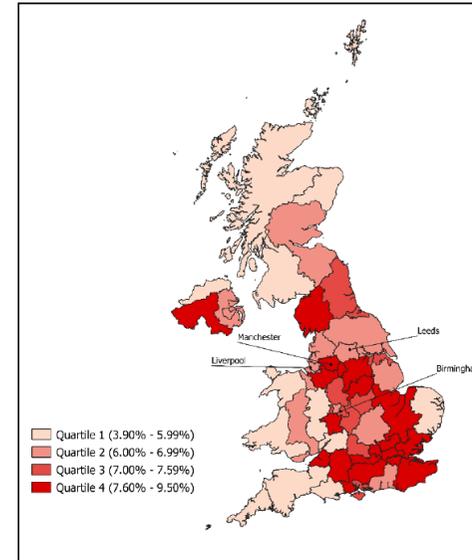


Figure 2: Proportion of Start-ups Generating £1m+ Revenues after 3 Years in the UK (2018): Quartiles



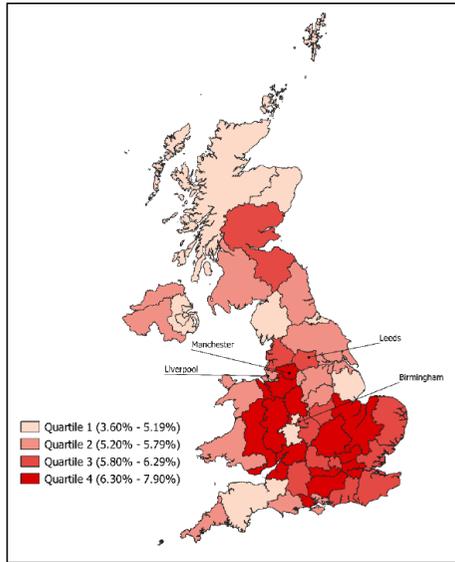
Source: ONS Business Structure Database (BSD)

Figure 3: Firms (born < 2014) turnover £1-2m in 2015 and reaching £3m+ in 2018 in the UK: Quartiles



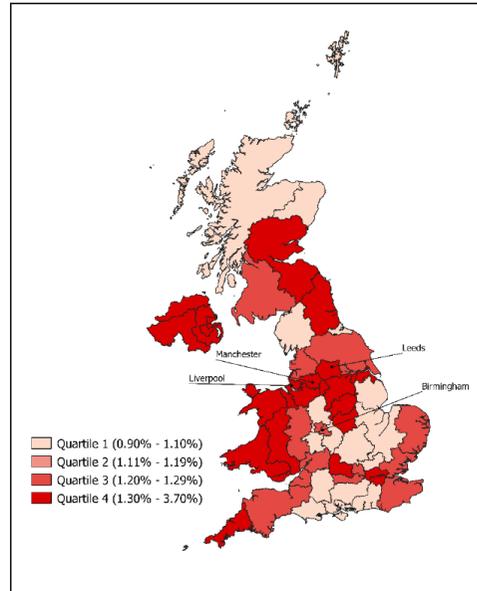
Source: ONS Business Structure Database (BSD)

Figure 4: High-Growth Firm Incidence Rate (20% threshold) in England (2015-18): Quartiles



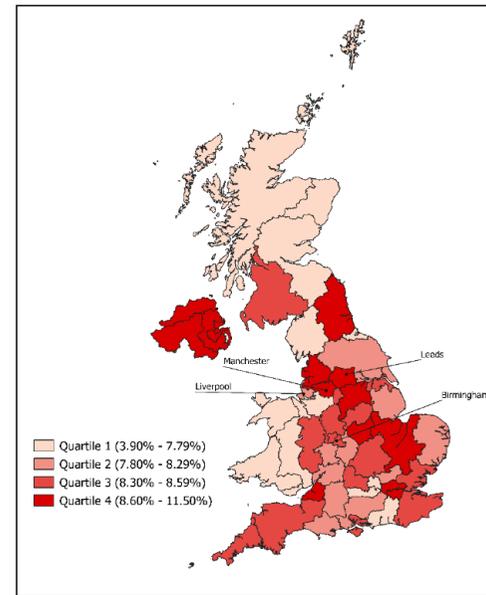
Source: ONS Business Structure Database (BSD)

Figure 6: Small High-growth Firm Incidence Rate in England (2015-18): Quartiles



Source: ONS Business Structure Database (BSD)

Figure 7: Proportion of firms with positive productivity growth 2015-18 (where turnover and employment both increased but turnover grew at a faster rate)



Source: ONS Business Structure Database (BSD)