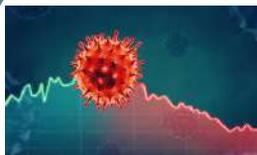


Policy Briefing Series



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Economic Recovery Post COVID-19: The MIT Regional Entrepreneurship Acceleration Programme (REAP)

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Summary

- With the current COVID-19 crisis, the MIT REAP West Midlands cohort has recognised the need to support the region in preparing for the 'recovery' stage.
- A key theme highlighted by the MIT faculty is strengthening both the innovation capacity (I-cap) and entrepreneurial capacity (E-cap) within a region.
- One of the actions of the MIT REAP West Midlands team has been to develop a set of indicators to assess the capability to support Innovation and Entrepreneurship in the region. WM-REDI have led on matching these indicators with datasets, which compare the West Midlands regional figure with the National average.
- Analysing these indicators will help to identify the 'comparative advantage' of the West Midlands and help inform decisions on local Business Support. This policy briefing highlights some initial findings from the analysis.

MIT REAP-UK Initiative

In March 2020, the Massachusetts Institute of Technology (MIT) launched a pilot in the UK of a 'lite' version of its global 'Regional Entrepreneurship Acceleration Programme' (REAP), aimed at helping UK regions with achieving greater productivity, employment and returns from research. In collaboration with the UK Department for Business, Energy & Industrial Strategy (BEIS) and Loughborough University, this programme seeks to deepen the collective efforts and community of practice of entrepreneurship and innovation. MIT's theoretical and practice-based expertise and regional leadership focused on this new initiative to support productivity growth, is a defining factor in the delivery of the UK's Local Industrial Strategies. The West Midlands Combined Authority (WMCA) is one of six regions currently part of the programme.

I-Cap and E-Cap

The goal of the MIT REAP-UK Initiative 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. The initiative draws on the frameworks founded and established through the MIT REAP global program and translates them into the UK context with a cohort composed of entirely UK-based teams.

A key theme highlighted by the MIT program is the importance of strengthening both the innovation capacity (I-cap) and entrepreneurial capacity (E-cap) within a region. Often innovators have great ideas (I-cap) but lack the entrepreneurial skills (E-cap) to develop them (Chrisholm et al., 2014). Similarly there are many talented entrepreneurs whose talents are wasted on a limited pipeline of high quality ideas.

'Innovation' and 'entrepreneurship' are popular terms used in industrial strategy policy making, but not always well-defined and even less often well measured (Murray and Budden, 2017). The MIT REAP Programme teaches innovation and entrepreneurship as two 'capacities' or twin engines that drive a regional ecosystem. They are defined as

Innovation-Capacity: Ability to develop new to the world innovations from inception through to the market. It covers not only the development of basic science and research, but also the translation of their 'solutions' into useful products, technologies and services.

Strong I-Cap: Universities, Central R&D, Network of researchers, Medical Centres.

Entrepreneurship-Capacity: Ability to start and build new to the world businesses from inception to maturity. This includes a subset of more general entrepreneurial capabilities and conditions for forming enterprises.

Strong E-Cap: Entrepreneurs, Mentors, Founding Teams, Investment.

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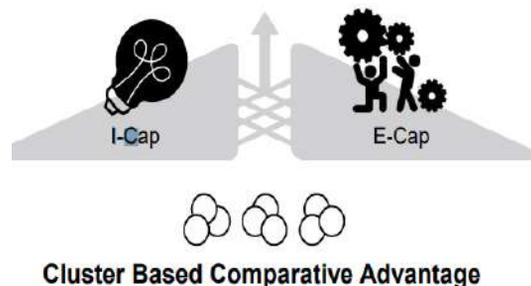
Applying the MIT REAP Framework

The 'MIT I-Cap/E-CAP framework' suggests a set of measures that captures the strengths of the I-Cap and E-Cap in a specific region. These measures are grouped into the following themes:

- **Human capital:** The workforce (from within a region, or attracted into a region) with relevant education, training and experience.
- **Funding:** The availability of public and private sector capital to support innovation and entrepreneurship.
- **Infrastructure:** The physical infrastructure (e.g. land, buildings, transport, connectivity) that is needed to support innovation and entrepreneurship at different stages.
- **Demand:** The level and nature of specialised demand for the outputs of innovation and entrepreneurial capacities supplied by different organisations in the system.
- **Culture and Incentives:** The social norms that shape acceptable career choices and the incentives that shape individual team behaviours.

The MIT-REAP West Midlands team is currently focussed on delivering a series of actions focussed on regional economic recovery post COVID-19. One of these actions has been to develop a simple set of metrics to evaluate the current state of the West Midlands ecosystem, to assess its innovation and entrepreneurship performance relative to other benchmark locations. WM-REDI have led on developing these metrics and pairing them with datasets, which compare the West Midlands regional figure with the National average.

Analysing these indicators will help to identify the 'comparative advantage' of the West Midlands and help inform decisions on local Business Support. A comparative advantages of any region's economy is based on specific areas of strength that differentiate it from others around it (Murray and Budden, 2017).



Source: Stern, 2016.

Human Capital

Strengths:

- The West Midlands has the largest University sector outside London, including nine universities and four higher education colleges. There are an additional 41 further education colleges with students taking higher education courses. Higher education institutions are critical sites for innovations, they educate prospective workers and produce technological and scientific results that can be turned into patents and product. Therefore, are an important part of the region's I-Cap.
- The eight Midlands Innovation (MI) alliance universities (Aston, Birmingham, Cranfield, Keele, Leicester, Loughborough, Nottingham and Warwick) currently generate more patents per unit of research income than any other major UK university grouping (MICRA, 2020).
- Graduate retention is an important contributing factor to ensure there are enough trained graduates to sustain innovative work. In total, 40.4% of graduates from a Birmingham institution work in the West Midlands six months after graduation. In addition, 23% of Warwick University graduates take up professional jobs in the West Midlands in the six months following graduation.
- The percentage of engineering / scientist graduates in the region is 22.1%, which is higher than the UK average of 19.5%. This is important since a higher quality of STEM education leads to a higher rate of more advanced technological breakthroughs made.
- For the 'average progress 8' score Birmingham is rated as 'Above Average'; both Solihull and Wolverhampton as 'Average'; while Coventry, Dudley, Sandwell and Walsall were deemed 'Below Average'. A school's 'average progress 8' score is the average of all of its students' scores and reflective of the quality of secondary school education.

Weaknesses:

- Only 33.5% of the region's population (861,700 people) have a degree level qualification (NVQ4+). To reach the UK average of 40.2%, an additional 173,249 need to be upskilled. This translates that there are not enough graduates trained to sustain the innovative and analytical work behind R&D.
- There is a high proportion of the West Midland's working-age population with no formal qualifications (11.3%). To reach the UK average of 7.9%, an additional 87,115 need to gain one qualification. This alongside the above average unemployment rate raises concerns of a regional skills gap, which does not meet the 'I-cap demands' for a supply of skilled people, technicians, researchers and support staff
- To increase the entrepreneurial capacity in the region, a greater proportion of the working-age population is needed with the required skills and knowledge to start a business.

Strengths:

- The West Midlands is identified as a ‘business-led innovation region’. This reflects the above-average levels of private sector investment in R&D in the region (Forth and Jones, 2020).
- Research funding awarded to local universities acts as a catalyst for other investments in city-regions. The presence of research-intensive universities in Birmingham is a central factor in the success of the Greater Birmingham and Solihull LEP and its ability to attract funding awards. The GBSLEP has received significant levels of funding from Horizon2020 (53,590,192 euros for 2014-2018) and research council/Innovate UK (£997,002,402 for 2012-2021) (Taylor, 2019).
- When we account for the unequal LEP geographies, by standardising funding data per head of population in each LEP, we find that the GBSLEP sits in the top ten LEP areas outside of London, in terms of its success at winning both European and UK research funding. The Midlands Engine receives the highest level of InnovateUK Funding awards, reflecting its strong history of manufacturing.

Weaknesses:

- The UK’s R&D spending, both public and private, is highly regionally imbalanced, which disadvantages the West Midlands region (Forth and Jones, 2020).
- Research published by UKRI in 2020 shows that the so-called ‘Golden Triangle’ benefits disproportionately from public investment, compared with other regions of the UK. The headline stat is that 52% of gross domestic expenditure on R&D (GERD) goes to London, the South East, and East of England regions (ONS, 2020). In 2018-19, the West Midlands received only 9%. (ONS, 2020).
- The regional investment available to take these to market is dwarfed by that available to university spinouts and affiliated businesses in London, Oxford and Cambridge. Indicatively, the South-East and East of England recorded 63% of all investment deals (of all types) in the UK in 2019. The East and West Midlands combined had just 4.4% (Beauhurst, 2019).
- If public sector investment in the West Midlands is not increased, the danger is that the private sector will respond to the better availability of innovation resources and skills elsewhere by relocating their own investment.
- Access to Finance and Cash flow – The impact of the COVID-19 pandemic has meant that credit providers are now more cautious about who to lend to and sales have diminished. Consequently, the region’s businesses are facing new challenges with regards to access to finance and cash flow.
- There is a huge chasm between government policy around economic growth (Industrial Strategy, UKRI, Export is Great etc.) and the day to day reality of the enquiries to the Growth Hub. Customers keep coming back to account managers, essentially asking for them to give them money, buy goods or services from them, prepare their accounts for them, or to write tenders or grant applications for them.

Infrastructure

Strengths:

- The West Midlands is one of the largest urban areas outside London. Its central location at the heart of the road and rail network, together with Birmingham International Airport, means that it is well connected to the rest of the UK and international markets.
- Key rail and road links include: (i) Direct train services to London and the South West, the West Midlands, Scotland, the North West and Yorkshire; (ii) The M6, which provides access to the North West; (iii) The M5, which provides access to the South West; (iv) The M42, which provides access to the East Midlands; and (v) The M40, which provides access to the South East.
- The region has a number of high tech business parks that are helping to foster innovative practices and high tech industry. These business parks provide crucial opportunities for businesses and key stakeholders to network, broadening their potential resource base and maximising their opportunities. This is particularly valuable for smaller, younger and potentially more innovative firms..
- 96.5% (1,768,211) of premises have access to ultrafast and superfast broadband in the WMCA in 2019. Across the WMCA, the overall median data usage was on average 178GB in 2019, which is above the UK average of 174GB. The region also has above average outdoor and indoor 4G coverage.
- There is ongoing major infrastructure investment in the region (i.e. HS2), as well as, a strong construction sector and portfolio of capital investment opportunities.

Weaknesses:

- In the West Midlands, there is a major issue regarding affordable housing. This has negative consequences across the board, including issues of accessibility for first time buyers, higher rents in the private sector due to high demand, and longer waiting times for those registering for social housing (Bryson, BER, 2019).
- The M6, M5, M42 and M40 are key road linkages that are all part of the region's Strategic Road Network. A comparison of delays on these key road links between 2017 and 2018 identified that some junctions had experienced an increase in average delays whereas others have remained the same. The sections, which are affected by the lowest speeds, are Birmingham, Wolverhampton, Coventry, Walsall, West Bromwich and Brierley Hill and these are considered to be strategic centres (Cepeda Zorilla, BER, 2019).
- There is intra-regional variation for super-fast, ultra-fast and Full Fibre availability. Full fibre availability represents where the network has been rolled out to a "lead-in" that will serve the consumer end premise and where the consumer would expect to pay a standard installation charge for that connection. The West Midlands is behind the UK average of 6% for full fibre availability (% of premises). The figures in Walsall are 7.2% and 3.3.% in Birmingham and Coventry. However, in Wolverhampton they are 0.7% and 0.8% in Sandwell and Dudley.

Demand

Strengths:

- In the West Midlands Combined Authority (3 LEP area) the following sectors are in a greater proportion (in terms of percentage number of jobs) when compared to the national average: advanced manufacturing and engineering (11.4% vs 8.0%), the public sector including education (13.1% vs 12.9%) and logistics and transport technologies (5.9% vs 4.9 %), life sciences and health care (13% v 12.7%) and retail (16.6% v 15.3%). This suggests that the domestic market is attractive enough for the products/services of a new enterprise to form in these sectors.
- The largest sector in the WMCA is the Business and Professional service sector, which accounts for £27.8bn GVA and makes up 26.5% of the whole economy.
- The West Midlands is the 3rd largest value export region in England and exports more than Wales and Northern Ireland.
- There are several potential entrepreneurial opportunities from Coventry being the 2021 City of Culture.
- The ERC (Warwick and Aston University Business Schools), is based in the West Midlands, and is the UK's leading centre of excellence for research into the growth, innovation and productivity of small and medium-sized enterprises (SMEs).

Weaknesses:

- City-REDI research shows that 12.2% of West Midlands GDP is at risk because of Brexit negative trade-related consequences. The West Midlands as a whole is more exposed than the UK average (Ortega-Argiles et al., 2018, 2018, 2018c). Brexit will exacerbate the negative economic effects caused already by Covid-19 in UK firms, regions and sectors (Ortega-Argiles, 2020).
- More focus/ investment in stimulating and supporting the demand side of innovation, from the private sector, public sector, third sector and, indeed the public/end customers is needed. Ultimately, innovation needs a market, so stimulating that market and enabling new knowledge and technologies to be PULLED (rather than simply pushed) into these markets is critical.
- The impact of the funding shortfall is also evident in that good new spinouts in 'unfashionable' sectors (e.g. medical devices, advanced manufacturing) have difficulty in securing match funding for Innovate UK grants. Under-capitalised spinouts and start-ups struggle to attract and secure top commercial and technical talent. They spend disproportionately more time on fund-raising, raise less per investment round and university founders suffer increased dilution from more frequent rounds. The potential to scale and generate employment and more economic activity within the region is therefore limited as things stand.

Culture and Incentives

Strengths:

- In 2018, the WMCA had a business base of 170,475 active enterprises, this has increased at a faster rate than the UK average growth (3.3% compared to 0.5%) since 2017.
- The WMCA enterprise births per 10,000 population is above the UK average (59 per 10,000 population compared to 58 for the UK). These are all positive signs that entrepreneurship is considered as an acceptable career choice in the region, encouraged by social norms.
- The high prestige and quality of the scientific research institutions in the West Midlands helps attract talent and is central to many of the region's technology clusters, including: the University of Birmingham's Institute of Translational Medicine and the High Temperature Research Centre; the University of Warwick's Advanced Propulsion Centre Hub and Warwick Manufacturing Group (HVM Catapult); the Institute for Advanced Manufacturing and Engineering (IAME), a collaboration between Coventry University and Unipart Manufacturing Group and the National Transport Design Centre (NTDC).
- Birmingham produces 39.1 STEM graduates per 1000 people which is far higher than the UK average of 19.8. This suggests that there is a strong allure for choosing a degree in science and engineering.
- The West Midlands, alongside a number of the larger urban areas in the UK, are hubs of ethnic minority business activity. The vital social contribution of these small businesses is evident too in the cafés, convenience stores, grocers and private hire taxi firms we see across the UK.
- 16% of the self employment workforce are ethnic entrepreneurs. This is significantly higher than the 9.6% share in the North West and 9.6% share in the North East.
- The density of ethnic entrepreneurs in the West Midlands is significant because: (i) 30% of ethnic minority businesses engaged in recent product or service innovation, 11 percentage points higher than non-ethnic minority firms; (ii) Since 2002 typically ethnic minority entrepreneurs have reported a higher Total Entrepreneurial Activity rate than non-ethnic minority entrepreneurs; and (iii) EMB owners in every UK region were more likely to export than non EMB owners.

Weaknesses:

- There were 18,805 enterprise births in 2013 in the WMCA (3 LEP), 42.1% (7,910) were still active in 2018. This is slightly below the UK survival rate of 42.4%.
- Further research and data collection is needed to understand how culturally accepted entrepreneurship is in the region and the extent to which there are positive or negative incentives.

The **West Midlands Innovation programme** focuses on demand-led and business innovation. It is currently running as a pilot, but with ambitions to expand to a bigger programme and scale up some of the pilot interventions. Programmes such as these are essential to overcoming barriers to business innovation in the West Midlands, The MIT REAP programme is core to the intelligence aspect of this programme, using the indicators highlighted in this briefing. Below are some key policy challenges related to the specific weaknesses in the regions' innovation and entrepreneurship capacity. There are a mixture of policy challenges that we can achieve in the region and those that we want to influence nationally.

Human Capital

- A partnership approach to skills development is needed to address some of the skills challenges identified and deliver the full spectrum of social, economic and cultural benefits (Lyons, Taylor and Green, 2020). This highlights the importance of the region's 'Skills Advisory Panels', which aims to bring together local employers and skills providers to pool knowledge on skills and labour market needs, and to work together to understand and address key local challenges. The SAP needs to have a focus on building the innovation capacity of the region.
- UK employers stand out internationally for their preference to recruit rather than train, even when faced with skill shortages – there needs to be a drive in incentives to help shift these priorities (Green and Taylor, 2020).
- The UK Skills Mismatch in 2030, published in October 2019. Highlighted a pressing need to shift to a new norm of lifelong learning. Longer working lives and rapidly changing skills demands will require people to adapt within or shift between careers through upskilling and reskilling. (Lyons, Taylor and Green, 2020).
- As part of a responsive skills system, national and local actors should develop clearly defined career pathways, establish more flexible provision and funding, approach training more holistically and in partnership, and provide greater clarity over their long-term objectives, roles and responsibilities (Lyons, Taylor and Green, 2020).
- In terms of timeframes for skills planning employers face a balancing act of ensuring practical skills are in place for the 'here and now' to deal with 'business as usual' operations while at the same time looking ahead at strategic skills needed for future business development and success. (Green and Taylor, 2020).
- "Programmes to reach underrepresented groups are particularly important to ensure inclusive growth and access all the pools of talent and creativity we will need" (West Midlands Innovation Programme).

Funding

- A commitment to greater transparency on how funding decisions are made in the government's existing research funding agencies, and an openness to a broader range of views on how this might change is needed (Forth and Jones, 2020).
- A substantial regional devolution of innovation funding at a sufficient scale to achieve a better fit with local opportunities is needed (Forth and Jones, 2020).
- Supporting and encouraging start-ups is vital, but maybe we need to broaden the scope of what we mean by "pre-start up support" and how it's delivered. Pre pre-start support in the form of financial literacy or even more basic information about fundamental principles such as ethics, citizenship, tax and other bedrocks of commerce and business is needed ("Rule 1: no-one is ever going to give you 100% grant in cash to start a business. Rule 2: I should not need to explain why").
- Create new support programmes integrated with local supply chains, including crucial Tier 2 and Tier 3 firms, through demonstrator projects, supporting broad and accessible investment and access to a good supply of appropriate finance products on attractive terms as well as challenge opportunities leading to contracts (West Midlands Innovation Programme).
- Work to establish a regionally-focused patient capital fund. Investing in Midlands research strengths (MICRA investment fund). Additionally, a funding network of partners to support the development of R&D bids is needed.

Infrastructure

- Investment in the Strategic Road Network (SRN) can support economic growth through improving productivity including reducing unemployment and increasing labour supply by linking concentrations of skill labour with employment opportunities. Enhancing regional and inter-regional connectivity facilitates agglomeration economies and increasing competition and encourages private sector investment (BER, Cepeda Zorilla, 2019).
- There is a need to provide more housing and especially affordable housing. The key here is to recognise the relationship between local housing provision and the availability of skills in local labour markets" (BER, Bryson, 2019).
- "Networks and linkages: supporting business networks and programmes to join up R&D assets and entrepreneurs, Business to business collaboration, and help identify the opportunities for collaboration across sectors, technologies and supply chains" (West Midlands Innovation Programme).
- There is an observed long-term systemic problem relating to a UK university-industry gap, a so-called 'valley-of-death' with a variety of constraints and barriers to the adoption and diffusion of new technologies. It is important the region works to promote networks and university business collaborations to facilitate industry applications of innovation and university to entrepreneurship transitions.

Policy Challenges (iii)

Demand

- The region must help businesses prepare for the negative trade-related consequences.
- “Improving foresighting to generate new ideas and promote awareness of latest market demand from large firms and the public sector for innovative SMEs as well as technology drivers of change” (West Midlands Innovation Programme).

Culture and Incentives

- Further research and data collection is needed to understand how culturally accepted entrepreneurship is in the region and the extent to which there are positive or negative incentives, which will exacerbate the negative economic effects caused already by Covid-19 .
- Access to leadership and management education for entrepreneurs and small business leaders. This isn't all about start-ups and that business leaders crucially need the skills to grow and scale their businesses along with growth ambition (relating to the cultural point) and access to finance for E-Cap to flourish. We already have areas of good provision through the Growth Hubs and some business support providers, but this could be strengthened.
- Need to foster collaboration between universities and local companies. Universities should build relationships with market players (large or small\medium sized enterprises) and other institutions as early in the process as possible. This may present opportunities such as being to able scale up research through already existing enterprises.
- “Creating opportunities to showcase the impact and importance of innovation and innovators across the West Midlands’ public, private and third sectors, in our full diversity of businesses, to inspire innovation in existing and new businesses” (West Midlands Innovation Programme).

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MIT-REAP West Midlands Team

The West Midlands Team ‘lite’ REAP team is sponsored by the GBSLEP, BCCLEP and the West Midlands Combined Authority (WMCA), whilst also representing the Coventry & Warks LEP area. WM REDI is part of this team (Chloe Billing, Josh Swan, Ben Brittain and Rebecca Riley). Other organisations involved include the WMCA (Jamie Elliott- Innovation Lead), Innovation Alliance West Midlands (Pam Waddell), Innovate UK (Ewa Bloch), GBSLEP (Ian Mclaughlan), Black Country Growth Hub (Dan Carins), West Midlands Combined Universities (Wayne Langford), Aston Centre for Growth (Paula Whitehouse), Midlands Aerospace Alliance (Andrew Mair), KPMG (Andy Argyle and Farsan Batki, Greater Birmingham Chambers (Dan Clarke), Black Country Chamber (Corin Crane), Minerva Angels (Alex Toft) and the British Business Bank.

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