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Framing a place-based investment strategy for Rochdale

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Abstract

Regional inequalities in productivity and living standards across the UK are stark and have been increasing over time. We argue that a broad-based investment strategy across different types of "capital" is required in order to help to lift places out of low productivity traps and create better and lasting outcomes for their communities and businesses.

In this report, we present an overview of our results from the Investment in Productive Places study for Rochdale assessing the community capitals framework (with capitals including: physical, human, intangible, institutional, financial, social and natural). We compare indicator variables for the capitals in Rochdale, with the other Greater Manchester boroughs. We find that Rochdale has strengthened assets across social and financial capitals.

We summarise how key stakeholders in Rochdale are thinking about the capitals investment strategies, from the qualitative analysis (base-line survey, stakeholder workshop and semi-structured interviews). We found four leading themes linked to the capitals which can help to inform broad-based investment strategies, namely: 1) a unified purpose; 2) connect fractured networks; 3) combine future-oriented focus with "here and now"; and 4) adaptive mind-set and behaviour. Building on the key strengths of the Rochdale economy with a policy focus on the four themes will help to develop an enduring investment strategy to benefit all.

In targeting measures beyond GDP the social, human, intangible and institutional capitals need to be aligned to jointly create and share a narrative on the Atom Valley enterprise zone that has a common purpose. Skills policy should target more apprentices in the higher value added manufacturing sector.

In terms of better welfare outcomes for Rochdale's citizens, the strength of the social capital networks could be deployed to encourage inclusive stakeholder engagement around Atom Valley. The returns from investments (e.g. new job opportunities) need to be shared more widely within the Rochdale community to strengthen the social fabric.

For higher well-being outcomes natural capital in Rochdale should be utilised to improve health inequalities. This could be a co-operative action between the public and third sectors working with local residents, again building on strong social networks linked in to institutions (NHS and Rochdale Borough Council).

Building on the key strengths of the Rochdale economy with a collective policy focus on all these areas should help develop an enduring investment strategy to benefit all.

Contents

1. Introduction

Regional inequalities in productivity and living standards across the UK are stark and have been increasing over time (McCann, 2020). We argue that a broad-based investment strategy across different types of "capital" is required in order to help to lift places out of low productivity traps and create better and lasting outcomes for their communities and businesses.

To lift places up in terms of better living standards, higher productivity is required from all resources invested in at the local level. Investments need to work together to create better outcomes. A broad-based investment strategy is therefore important, with a specific focus on linking and measuring "capitals" at a local level. This community capitals framework (see also Losada-Rojas et al, 2024) was set out in the White Paper on Levelling Up from the Department of Levelling Up Housing and Communities (DLUHC, 2022). The DLUHC (2022) white paper includes six capitals which are human, financial, social, physical, intangible and institutional capital, to which we add "natural" capital (the investment which supports environmental conservation, access to green space and contribute to net-zero targets by reducing CO_2 emissions). These capitals need to be utilised as productively as possible, as all resources are scarce and better outcomes are required to help close the large gap in regional inequalities. For a broad-based investment strategy we therefore need to understand the trade-offs and complementarities between different types of investment.

In this report we present our findings from the Investment in Productive Places Campaign (IPPC) in Rochdale[1]. We discuss how a joined up strategy for investment can help productivity to grow in places that have the potential to improve and fully leverage investment opportunities. To deepen our understanding of how some of the most abstract and difficult-to-quantify elements of the capitals' framework are being thought about in practice, we use a mixed methods approach presenting both quantitative and qualitative analysis. In addition to gaining insights into how the capitals are understood across a range of stakeholders, we are also interested in the interdependencies between the capitals. Our indicative findings reflect the experience of participants in Rochdale. As such, the analysis in the Rochdale report is place specific. Following this pilot, we are in the process of repeating this research for other places across the UK to make our results more generalisable[2].

This report is structured as follows. In section two we provide an overview of Rochdale including the history, investment opportunities (including the Atom Valley Mayoral Development Zone), the local policy context, economic performance and industrial diversity. Section three presents our capital variables for Rochdale. The fourth section provides the qualitative analysis results. The fifth section discusses recommendations for a broad-based investment strategy to lead to improvements for Rochdale's productivity going forward.

[1] The Productivity Institute and Rochdale Development Agency (RDA) signed a Memorandum of Understanding in February 2023 as a commitment to collaborate on work to better understand and improve the productivity of the Borough of Rochdale, and to provide valuable lessons for other parts of the UK, see: https://www.productivity.ac.uk/news/the-productivity-institute-signs-mou-with-rochdale-development-agency/ and https://www.productivity.ac.uk/research/projects/investment-in-places/.

[2] For updates on the Campaign see: https://www.productivity.ac.uk/research/projects/investment-in-places/

2. Overview of Rochdale

In this section we provide a brief history of Rochdale and set out the national and local policy context. We then present the economic performance and analyse the industrial structure of Rochdale vs. Trafford and how this has changed over time.

A brief history of Rochdale

Rochdale is one of the ten local authorities in Greater Manchester in the North West of England. The Metropolitan Borough of Rochdale[3] was formed in 1974 as part of the provisions of the Local Government Act 1972 and is an amalgamation of six former local government districts. The borough was formed by a merger of the former county borough of Rochdale from the administrative county of Lancashire, the municipal boroughs of Heywood and Middleton, along with the urban districts of Littleborough, Milnrow and Wardle.

Rochdale is an historic town that is mentioned in the Domesday Book of 1086[4]. During the peak of Britain's expanding textile trade in the eighteenth century, Rochdale was renowned for numerous wealthy merchants. Significantly, during the Victorian era, Rochdale became one of the world's leading producers of cotton. During the industrial revolution, the Rochdale canal was one of the UKs most important commerce routes. Indeed, Rochdale's great affluence during the industrial revolution was demonstrated by its impressive Grade I listed Town Hall, completed in 1871 and re-opened after extensive renovations in 2024.

The town was a pioneering force in the Industrial Revolution and helped pave the way for the present co-operative movement. The first co-operative shop was established in 1844 on Toad Lane by the Rochdale Pioneers. The Rochdale Equitable Pioneers Society are regarded as the forerunners of the global co-operative movement and established their first small business, offering honest weights and measures together with food at reasonable costs[5]. In addition to the shop, the Pioneers provided education to its members.

During the Industrial Revolution there were a number of innovations in Lancashire that helped to propel the area forward. These included the inventions of the Spinning Jenny and Flying Shuttle which meant that places could spin cotton more efficiently. Following the Industrial Revolution, Rochdale's economy transitioned from producing cotton to engineering and exporting technology across the world. As noted by Bounds (2021) "Rochdale's manufacturing heart was almost eviscerated as the cotton mills and factories lost out to cheaper competition from Asia starting in the 1970s. But the companies that survived are among the most competitive in the world."

[3] See: https://en.wikipedia.org/wiki/Metropolitan_Borough_of_Rochdale
[4] See: https://www.visitrochdale.com/about-the-area
[5] See: https://www.co-operativeheritage.coop/who-we-are

Investment Opportunities for Rochdale

Andy Burnham, The Mayor of Greater Manchester, in discussing the Atom Valley Mayoral Development Zone to the North East of Greater Manchester has acknowledged:

"I've always been clear since I came into this role – I remember Howard Bernstein saying to me when I was first thinking about doing it, he said that in the end Greater Manchester's devolution will be judged by what it can do for Oldham and Rochdale, and we have done things for Oldham and Rochdale. This is us levelling up Greater Manchester ourselves." (Elliott, 2023).

Rochdale is one of the 10 boroughs in Greater Manchester (GM). The GM city region has established a collaborative working arrangement over a number of decades as detailed by Harding and Peake-Jones (2023). The Greater Manchester Combined Authority (GMCA) was formally established in 2017 before the election of the Mayor that year. It has a range of devolved powers at its disposal and these have increased over time[6]. But, as Westwood, et al, (2022), note the political churn from central government has led to over 50 regional policies being brought in over the last four decades. The previous Government released a White Paper on industrial policy in 2017 with Local Enterprise Partnerships in England tasked to set local industrial strategies, and many of these themes were picked up again in the 2022 Levelling Up the United Kingdom White Paper. Greater Manchester has relied on a strong evidence base over time provided initially by the Manchester Independent Economic Review in 2009 and then in 2018 the Independent Prosperity Review. The long-term spatial plan for GM was adopted in 2024, called "Places for Everyone"[7].

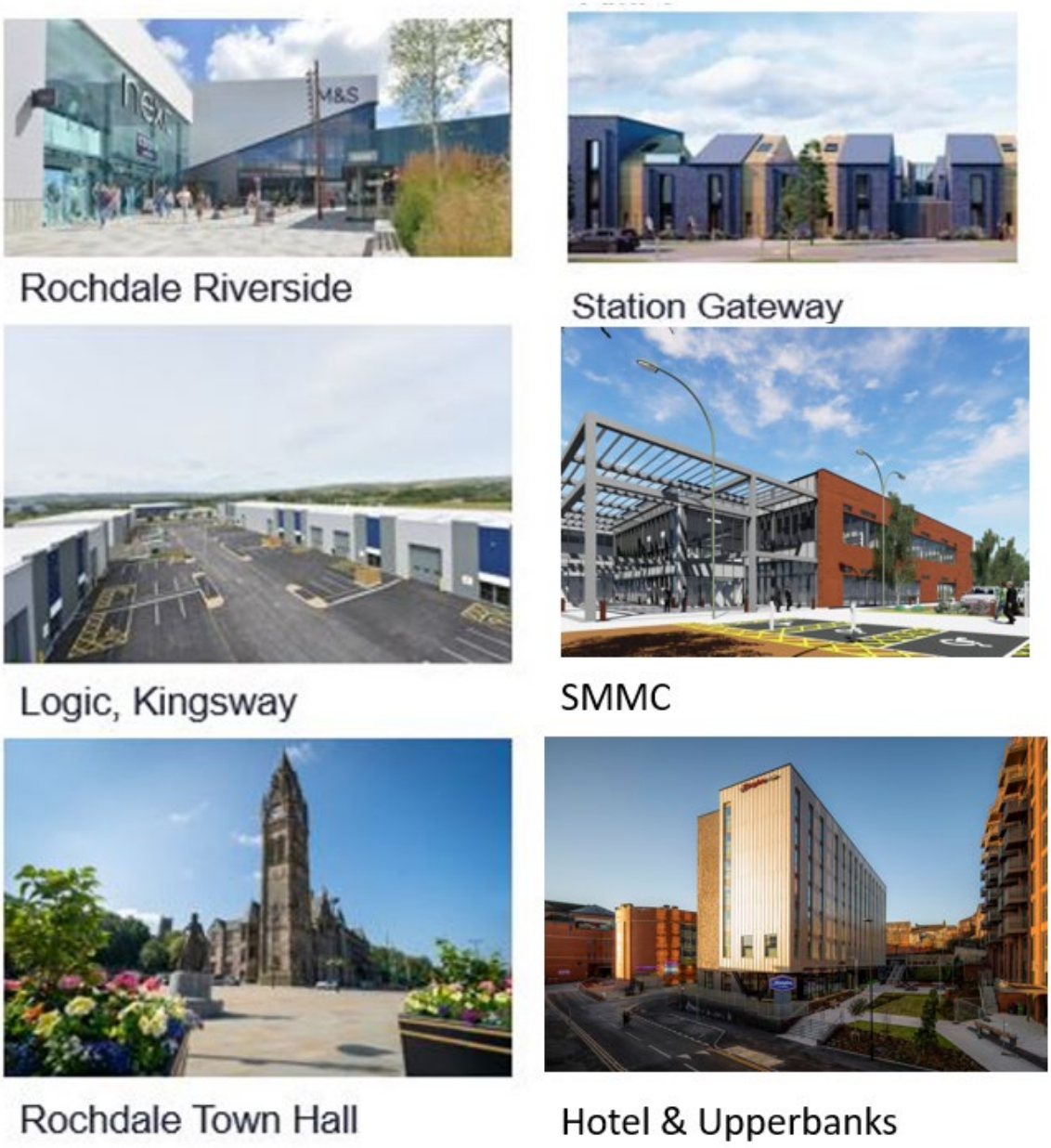
Locally, Rochdale Borough Council (RBC) has set out its vision in its Economy Directorate Plan[8] to make Rochdale a great place to grow up, get on and live well. Rochdale Development Agency[9] (RDA) was established in 1993 and leads on plans to attract inward investment and support business growth but cautions that there are challenges with the quality of the existing built environment, especially in urban areas, and a need to invest in the current housing stock.

Funding from central government has totalled £125 million in 2020/21, from the Town's Fund, the Future High Streets Fund and the Get Britain Building Fund. This public sector investment is estimated to leverage a total public-private capital spend of £750 million on projects, bringing 2,500 new homes, 3 million square foot of commercial space and 4,000 jobs to the borough. A further investment opportunity in Rochdale is from the Government's Levelling Up Partnership[10] started in April 2024. This funding had been allocated to places across England who have a combination of low productivity, lower wages, lower levels of healthy life expectancy outcomes and lower levels of mid-range skills (NVQ3+). Rochdale will also be in

[6] The last Government's policy announcements for Greater Manchester include the "Trailblazer" deeper devolution deal in March 2023 (https://www.gov.uk/government/publications/greater-manchester-combined-authority-trailblazer-deeper-devolution-deal).
[7] See: https://www.greatermanchester-ca.gov.uk/what-we-do/planning-and-housing/places-for-everyone/
[8] See: https://democracy.rochdale.gov.uk/documents/s96877/Economy%20Directorate%20Plan%202023-24%20FINAL.pdf
[9] See https://www.investinrochdale.co.uk/about
[10] See: https://www.gov.uk/government/publications/levelling-up-partnerships-methodology-note/levelling-up-partnerships-methodology-note

line for Shared Prosperity funding. Most recently, Heywood was named to be in receipt of the 2023 DLUHC Long Term Plan for Towns Fund[11].

Figure 1: Photos of Rochdale Developments



The photos in Figure 1 show a range of developments in Rochdale. Since the beginning of the previous decade RBC have invested in a new council building with library at Number One Riverside (not shown), developed by RDA and opening in 2013. In April 2020 the £80 million Riverside retail and leisure centre opened in the town centre and managed to let 94% of floor space in the midst of a global pandemic (helped by shops relocating from an adjacent centre and some new high street names arriving). At the same time the new £6.6m Logic industrial

[11] See: https://www.gov.uk/government/publications/our-long-term-plan-for-towns

park was fully let, attracting inward investors and growing local companies. Both projects were funded by RBC and developed, delivered and managed by the RDA. Taken together they have created 300 jobs, safeguarded 250 jobs and generated business rates income of £1.6 million per annum.

Riverside has been a catalyst for a housing scheme at Upperbanks bringing town centre living to Rochdale with 462 apartments and a 147-bedroom hotel. Station Gateway is part of RBC's Rail Corridor strategy, an ambitious public-private sector planned project to revitalise neighbourhoods by building homes and workspace close to the borough's five railways stations. Wider plans at Rochdale Station, for example, will deliver 1500 new homes, employment space, new transport links and improved station facilities. In 2024 work was completed on the restoration of the Victorian Grade I Listed Town Hall, a £16 million project funded by RBC and the National Lottery Heritage Fund. The Town Hall is now accessible for the community and tourists.

The investment opportunities that exist in Rochdale include the Sustainable Materials and Manufacturing Centre (SMMC)[12] that is receiving £4.8m of revenue funding from Greater Manchester's Investment Zone. This initiative has been designed to establish Rochdale and Greater Manchester as a key hub for innovation, where businesses can experiment with and develop pioneering materials and manufacturing technologies. The 2019 Local Industrial Strategy[13] set out a vision to position the city region as a hub of technological innovation, sustainable development, and inclusive economic growth. Alongside defining four frontier sectors, the vision for Advanced Materials and Manufacturing was to:

"position Greater Manchester as a world-leading city-region for innovative firms to experiment with, develop and adopt advanced materials in manufacturing"

The local industrial strategy established the Greater Manchester's Graphene, Advanced Materials & Manufacturing Alliance (GAMMA) – an alliance of manufacturers, universities, and public agencies – and an approach was taken to diffuse advanced materials and industrial digital technologies to support advanced manufacturing to transition to net zero and boost competitiveness, driving a more productive, sustainable, highly skilled and innovative industry.

There has been significant progress in establishing the building blocks of this ecosystem. The first block was the business-led Advanced Manufacturing Productivity Initiative[14] that will work with local companies and universities to create new machines and technology for the manufacturing industry, Bounds (2021). A consortium, led by the National Physical Laboratory, secured £22.6m funding for a five year innovation initiative, with the aspiration to establish a machinery institute in Rochdale through the SMMC.

The second building block is the Centre of Expertise in Advanced Materials and Sustainability (CEAMS), launched in March 2024 in Rochdale, is funded as part of the Department for

[12] See news story: https://www.atom-valley.co.uk/news/planning-permission-submitted-for-visionary-advanced-sustainable-materials-manufacturing-hub-in-atom-valley/
[13] See https://www.gov.uk/government/publications/greater-manchester-local-industrial-strategy
[14] See: https://www.ampi.org.uk/news

Science, Innovation and Technology's Greater Manchester Innovation Accelerator programme. CEAMs will build on existing capability anchoring strategic businesses to the area and provide a strong support network. CEAMS is led by a consortium including: RDA, University of Manchester, Henry Royce Institute, National Physical Laboratory and High Value Manufacturing Catapult (involving the Centre for Process Innovation, National Composites Centre and Manufacturing Technology Centre). The development of advanced sustainable materials will address current supply chain gaps in the provision of polymers, composites, biomaterials, technical textiles and coating, and improve industry's ability to scale up and adopt sustainable materials in manufacturing applications.[15] This approach is known as the "Triple Helix" model of development, whereby government provides initial funding, and then it is for industry, university and regional authorities to work together to anchor and grow higher value jobs in a region.

The third and final building block is the Made Smarter programme that helps local manufacturers adopt digital technologies to boost productivity and competitiveness. Launched in 2018, it offers SMEs funding, specialist advice, and support for digital transformation. The programme has engaged over 350 businesses in the region, providing grants, mentoring, and training and aims to create a world-class digital ecosystem, enhancing the local economy and creating jobs. The aspiration is to provide a home for this initiative through the SMMC.

The revenue funding from Greater Manchester's Investment Zone to establish the SMMC to co-ordinate these initiatives is being aligned to the £15m from Rochdale's Towns Fund and a further £5.2m of capital funding from the Investment Zone to deliver a new 30,000 sq ft innovation facility at Kingsway Business Park. The building will bring together various programmes and stakeholders and will host laboratory space, workshops, metrology space, design and analysis studios, a lecture theatre, and meeting rooms. It will also have flexible workspace for start-ups, office space for manufacturers and a café. This development will become a showcase for Atom Valley, joining up innovation, business support and inward investment activities that support the wider ambitions across the development sites released under GMCA's Places for Everyone.

Despite these initiatives, there is still relatively little understanding of how these investment projects and institutions translate into value for the local resident population. There is also no clear evidence about the causality between new investments and the overall "economic health" of a place. We will analyse this in more detail with our qualitative analysis in section 4. However, Neil Eccles from the Rochdale Development Agency is quoted as saying "Does a vibrant high street create a vibrant business environment or does a vibrant business environment sustain a vibrant high street? We think it is the latter. If you have good, well-paid jobs, people will have money to spend in the town" (see Bounds, 2021).

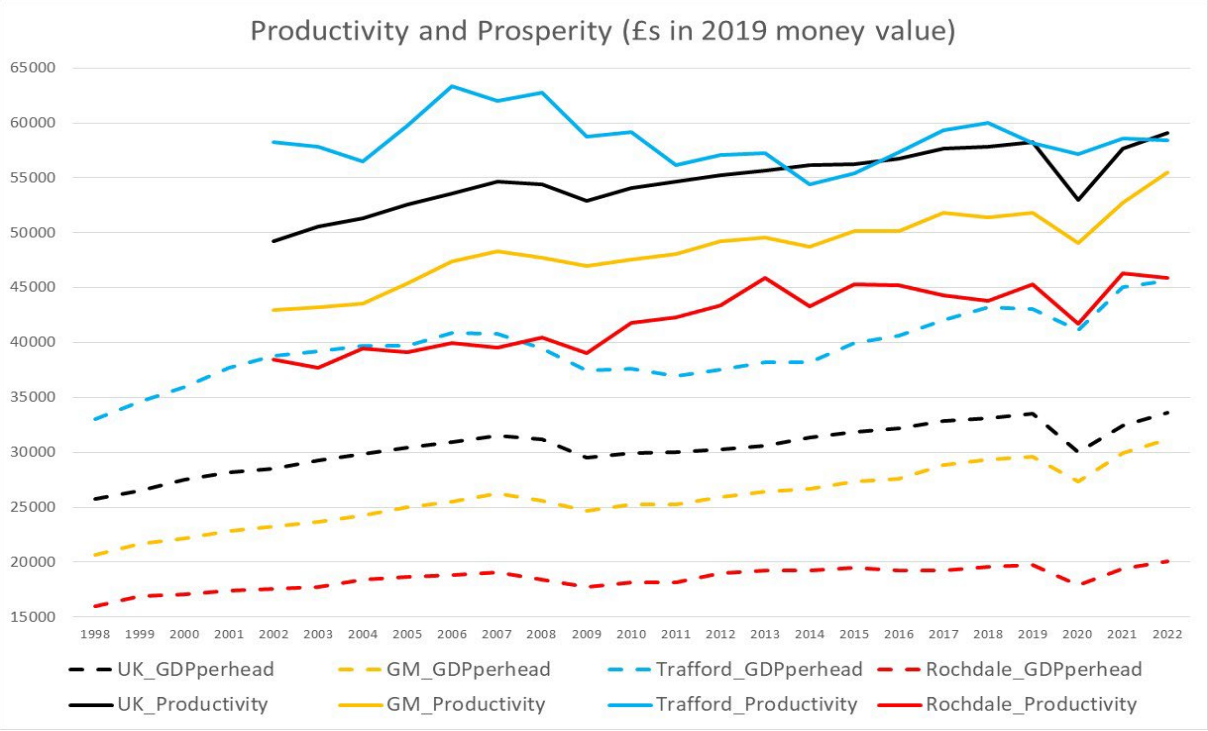
[15] See: https://www.royce.ac.uk/news/ceams-launches/

Economic Performance

In the Appendix, Table A1 shows a range of economic performance indicators from Rochdale, Trafford (a high productivity borough), Greater Manchester, the North West of England and the UK (or Great Britain, GB). Trafford has higher productivity (GVA/hour) at £39.1 compared to Rochdale of £31.4 in 2022. According to the ONS the working aged population of Rochdale was 138,200 in 2021 with an employment rate of 69.9% (16-64 years old) in 2023, compared to 75% in Trafford and 75.8% for GB. The unemployment rate in Rochdale has fallen from a post-covid high of 6.5% at the end of 2021 to 4.8% in 2023, in Trafford this is 3.1%. The claimant count is higher in Rochdale at 6% in 2023 compared to 3.1% in Trafford and it has a higher share of workless households (18.2% in 2022) compared to Trafford (16% in 2022).

Trafford has a higher residential weekly wage at £724.10 (compared to £645.30 in Rochdale) which reflects the larger share of professional workers living in Trafford. The weekly wages of jobs based in Trafford at £614.60 are higher than those based in Rochdale at £597.10 due to the much larger value of production in Trafford (with a higher job density figure in Trafford of 1.26 jobs for each resident aged 16-64 compared to 0.65 in Rochdale). With 6,855 registered enterprises in Rochdale the majority are micro firms (employing between 0-9 people at 88.3% share) and small business (employing 10 to 49 people, 9.7% share) with only 30 large companies (employing over 250 people). There are similar proportions of micro and small businesses in Trafford, but also 60 large companies. The level of Gross Disposable Household Income (GDHI) is much lower in Rochdale at £16,872 per head compared to £25,802 in Trafford in 2022.

Figure 2: Rochdale and Trafford, Prosperity and Productivity

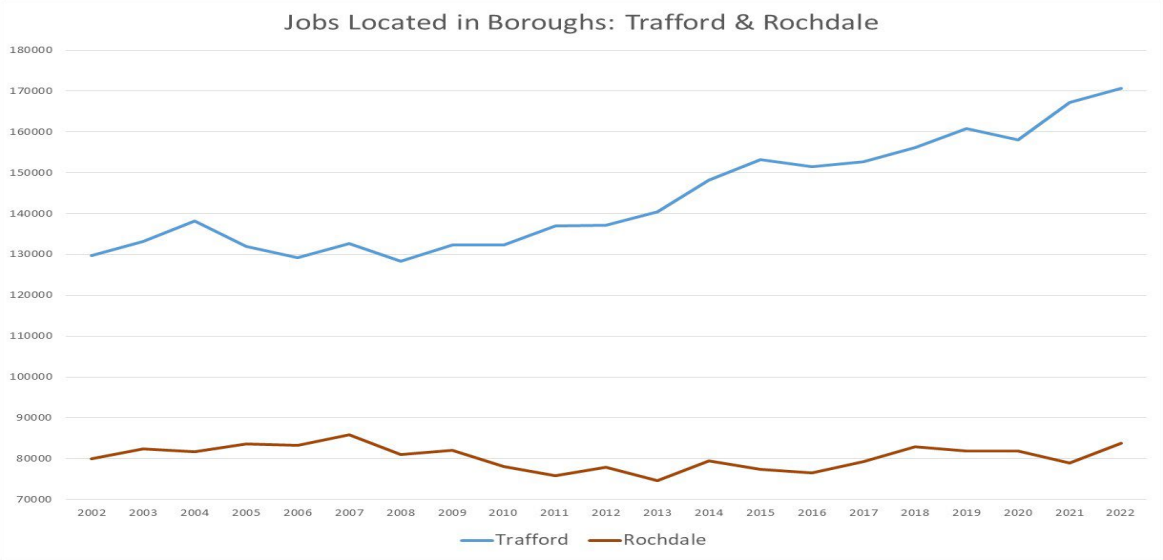


Source: ONS (2024c) and ONS (2024e), Local Authority GDP & Productivity.

Figure 2 compares Rochdale and Trafford's productivity and prosperity over time. Here, prosperity is measured by Gross Domestic Product[16] per head and productivity by Gross Value Added per filled job. We analyse business cycle turning points to help understand how resilient the boroughs were in their recovery from the 2007-08 financial crisis. Peak turning points in Rochdale and Trafford were reached between 2006-08 and the trough of the recession in 2009, though this was in 2008 for employment and 2010 for the hours series in Trafford.

To gauge the impact of the 2008 and Covid-19 recessions on Rochdale and Trafford Table A2 presents business cycle turning point dates for the Global Financial Crisis (GFC) with some summary statistics showing the average growth rates of sub-samples before and after the recessions. The output (GDP) loss of -6.33% in Rochdale and -6.55% in Trafford reflected a deep recession between the peak turning point of 2007 and trough of 2009 (compared to the UK fall of -4.8% and North West of -5.5%). The recession in prosperity (GDP per head) was deeper with a -7.16% loss in Rochdale and -8.39% in Trafford (both UK and NW experienced -6.3% contraction). Productivity (GVA/job) had a shorter and shallower recession in Rochdale (-3.7% over one year) compared to Trafford (-7.3% over 3 years), alongside the UK contraction of -3.2% and North West of -4.2% (both between 2007 to 2009).

Figure 3: Rochdale and Trafford, Employment



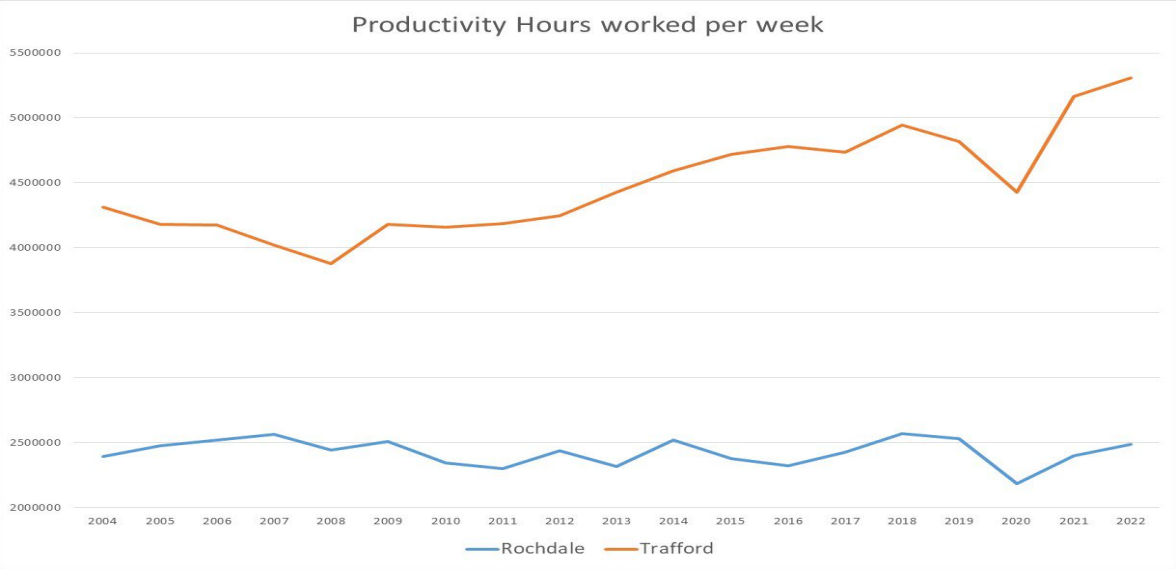
Source: ONS (2024e), Local Authority Productivity. Employment includes employees and self-employed.

The productivity growth rate in the recovery from the financial crisis (over five years following the trough turning point) was higher in Rochdale (2.08%) compared to Trafford (-1.53%) which means that the gap in output per job filled between these two boroughs has narrowed.

[16] GDP measures the value of goods and services produced. It estimates the size of the economy. GDP is equivalent to GVA plus Value Added Tax (VAT) plus other taxes on products less subsidies on products. GDP per head is calculated as GDP divided by the resident population in an area.

This is mainly due to a continued fall in the number of jobs in Rochdale following the recession (employment in Rochdale shows much less resilience to the shock, see Figure 3) with an average annual contraction between 2010-14 of -0.6%, over the same time Trafford employment was growing at 2.56% per year.

Figure 4: Rochdale and Trafford, Hours worked per week



Source: ONS (2024e), Local Authority Productivity.

The fact that Rochdale's output per job increased in part due to an employment contraction is obviously a cause for concern. However, the growth rate in GDP following the financial crisis was also higher in Rochdale at 1.92% per year on average compared to 1.17% in Trafford. In the five years before the Covid-19 downturn the jobs growth rate is positive in Rochdale at 0.6% per year but still less than the continued job expansion in Trafford at 1.6% per year on average, over this time the average annual growth rate in productivity (GVA/job) was greater in Trafford (1.3%) than Rochdale (0.9%). The difference in monetary value between Trafford and Rochdale in terms of output per filled job has narrowed from £19,768 in 2002 to £12,517 in 2022, and, as already mentioned, this is due in part to the lack of jobs growth in Rochdale.

The same is true for hours worked per week shown in Figure 4, these grew over the whole sample (2005-2022) at 0.2% per year for Rochdale compared to 1.15% in Trafford. Rochdale's economy contracted during the pandemic between 2019-20 and it was much deeper for productivity (GVA/job), GDP, prosperity and hours compared to Trafford. Rochdale had a smaller contraction in jobs (-0.06) between 2019-20 than Trafford (-1.72), but the recession peak turning point started a year earlier in 2018 with a trough in 2021, so employment had a three year recession with a loss from peak to trough of -4.8%. Productivity (GVA/hour) increased for Rochdale and Trafford during 2019-2020 due to a higher loss in hours worked during the pandemic compared to GDP's contraction.

Industrial structure

To understand the relative specialisation for the employee sectors in Rochdale and Trafford, compared to Great Britain, we calculate location quotients (LQ). A location quotient greater than one indicates higher specialisation than the GB level of employees in that sector. Table A3 shows the highest 15 location quotients for Rochdale employee sectors at the 2-digit SIC code level (average between 2015-22) along with the employee numbers in 2015, 2022, the 2022 employee sector share and the growth rate between 2015 and 2022. From Table A3 we can see that the number of employees in Rochdale has increased by 11.5% between 2015 and 2022. The largest location quotient is for the manufacture of textiles (LQ of 11.2) followed by the manufacture of chemicals and then rubber and plastic products. Employees in these manufacturing sectors have contracted between 2015 and 2022 but employees in civil engineering in Rochdale has grown by 39% and has high specialism compared to GB (LQ of 2.27). The largest shares of employees in 2022 were in retail and wholesale trade along with employment activities (agencies employing staff in a range of sectors). Although Rochdale does not have a specialisation in scientific R&D (LQ of 0.1), this employee sector has had the largest increase of employees between 2015 and 2022, the share of these jobs has quadrupled with architectural and engineering activities employees more than doubling (LQ of 0.68).

In Table A4 the highest 18 location quotients for Trafford employee sectors are displayed. The total number of employees in Trafford has increased by 19.6% between 2015 and 2022. The largest location quotient is for legal and accounting activities (LQ of 4.4), this sector has also had the largest growth rate between 2015 and 2022 (nearly trebling employees) and contains the largest share of the Trafford employees of 20.5%. The sewerage sector has the second largest LQ followed by security and investigation activities. Growth sectors for employees include construction, architecture and wholesale trade. Manufacturing sectors are less prominent in Trafford than in Rochdale, they also have falling employee numbers. One exception to this is the manufacturing of food products, this has increased employees between 2015 to 2022 by 11%.

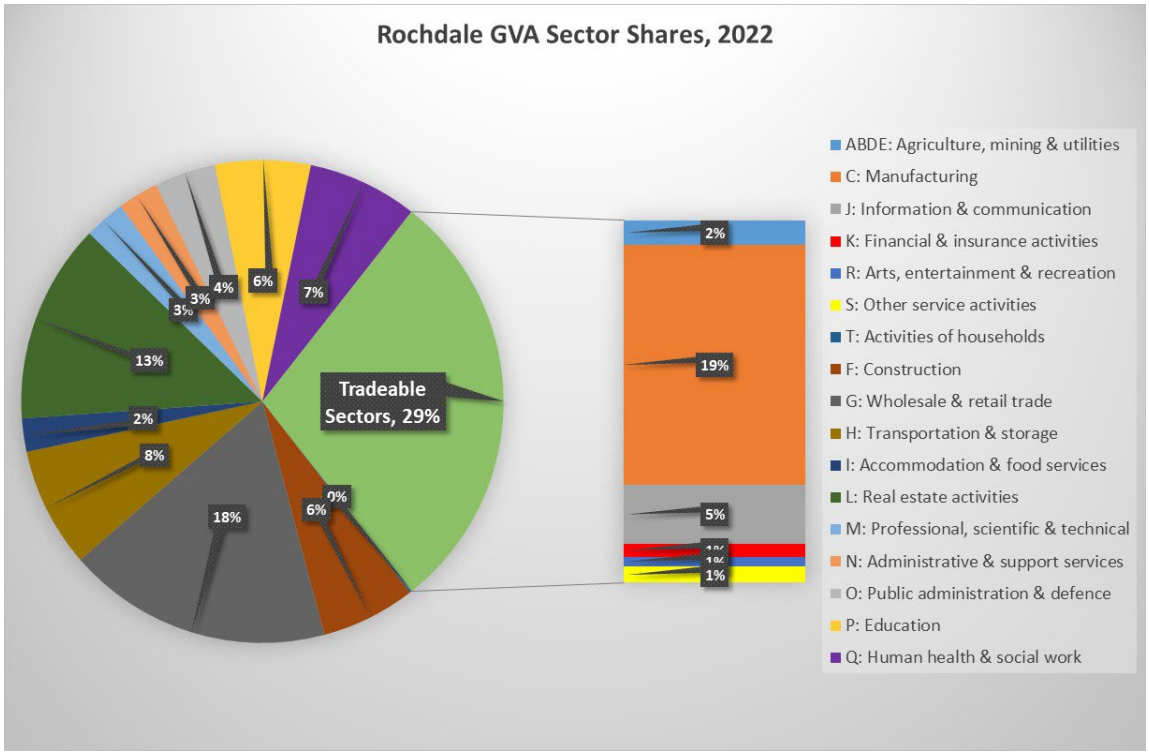
To become more prosperous, Rochdale needs to grow the value produced by those sectors that produce tradeable goods and services. [17] The OECD (2016) found that regions with larger tradeable sectors were able to catch up to the frontier regions quicker than those regions with lower shares that were diverging. Tradeable sectors bring money into the community, together with the wages of residents who commute to other parts of the city-region.

To calculate the share of tradeable sectors in Rochdale we analyse the Gross Value Added (GVA) sector shares for 2022, 31% of Rochdale's GVA was classed as tradeable (see Figure 5). The share of tradeable sectors have increased over time from 24.7% of GVA in 2000 to 32% in 2020. The rise has mirrored the increase in the share of the manufacturing sector,

[17] The OECD (2018) classifies tradeable sectors as the following: agriculture (A), industry (BCDE), information and communications (J), financial and insurance activities (K) and other services (RSTU). The remaining sectors are then classed as non-tradeable. The OECD defines tradeable sectors as "those that produce goods and services that can traded across regions and international borders". Firms can operate in sectors that are tradeable, although they may not actually engage in trade, but they are exposed to competition from abroad. See Chapter 2, page 59 in OECD (2018).

increasing from 16% of GVA in 2000 to 22.8% in 2020. The total share of manufacturing jobs in Rochdale is high at 12.7% in 2022, with the highest share of jobs in wholesale and retail (20.3%) and in human health and social work (12.7%).

Figure 5: Rochdale Share of Tradeable vs. Non-tradeable output (GVA)



Source: ONS (2024d), Regional GVA (balanced) by industry: North West

3. Rochdale Capitals Framework

The background literature review for the capitals framework is in the Investment in Places' Capitals report, TPI (2024). In this section we provide a brief description of each of the capitals with example variables.

Physical Capital

Physical capital accounts for the tangible or fixed assets that contribute to making firms and places productive (see Becker and Martin, 2023). These include assets that play a direct role in the production process, such as such as buildings, machinery, and transport equipment. These physical capital assets improve productivity by providing people with better tools and better environments in order to complete tasks, and so a greater stock of physical capital will typically lead to a greater level of production.

Physical capital also includes the infrastructure – such as trains and water pipes – that play a more indirect role in production. Infrastructure facilitates a greater range of activities by

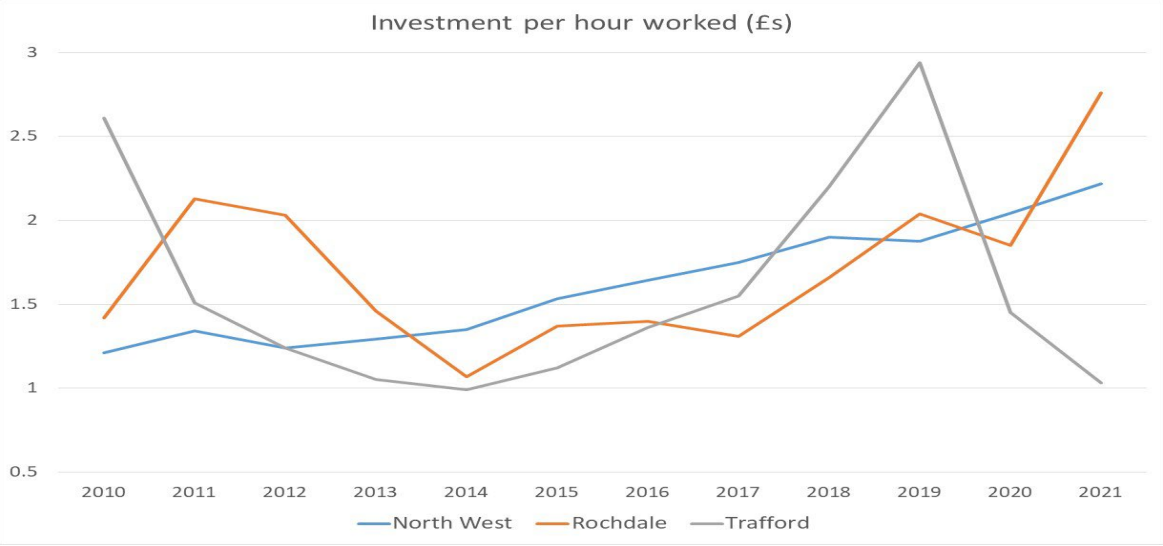
connecting people and removing barriers to economic activity. For example, infrastructure provides firms with the means to transport goods, but better connectivity creates a wider population base from which to draw its employees. Creation of new infrastructure increase economic activity in construction employment and new job opportunities running services.

Whole economy investment is called Gross Fixed Capital Formation (GFCF). GFCF captures "physical capital", which includes produced assets such as buildings, machinery and transport equipment. GFCF also includes some elements of "intangible capital" within "intellectual property products", which includes "software and databases", "research and development" and "entertainment, literature or artistic originals". GCFC measures the flow of capital in a given time period and this contributes to the stock of capital.

Buildings and Structures.

The latest ONS (2023) release provides details of Gross Fixed Capital Formation (GFCF) by asset type and at the local authority regional level. This allows us to compare the flow of investment per hour worked in Rochdale and Trafford, compared to the rate in the North West (Figure 6). Investment is calculated as the amount of GFCF in other buildings and structures[18] (this excludes residential dwellings which accounted for 49% of GFCF in 2022 nationally) less the transfer cost of non-produced assets (like stamp duty). This is then divided by the estimate of annual productivity hours from ONS (2024e). Figure 6 shows a steady increase in the rate of investment per hour worked in other buildings and structures in Rochdale and Trafford from 2014. From 2019 it has fallen in Trafford (due partly to the increase in working hours, see Figure 4) but continues to increase in Rochdale. As further investments in the SMMC, CEAMS and Atom Valley in Rochdale this should continue to increase.

Figure 6: Investment per hour worked in buildings and structures



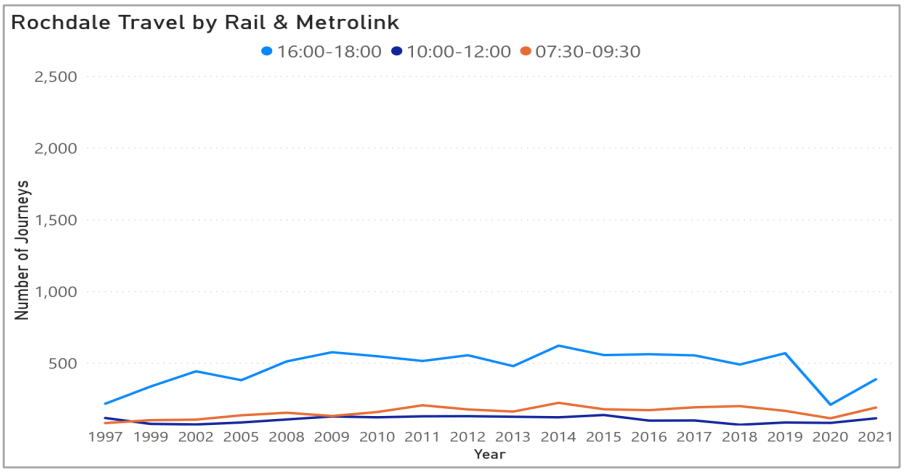
Source: ONS (2023) Experimental GFCF estimates by asset type, UK: 1997 to 2022. Nominal series.

[18] As these are experimental statistics they are yet to include data on machinery stocks.

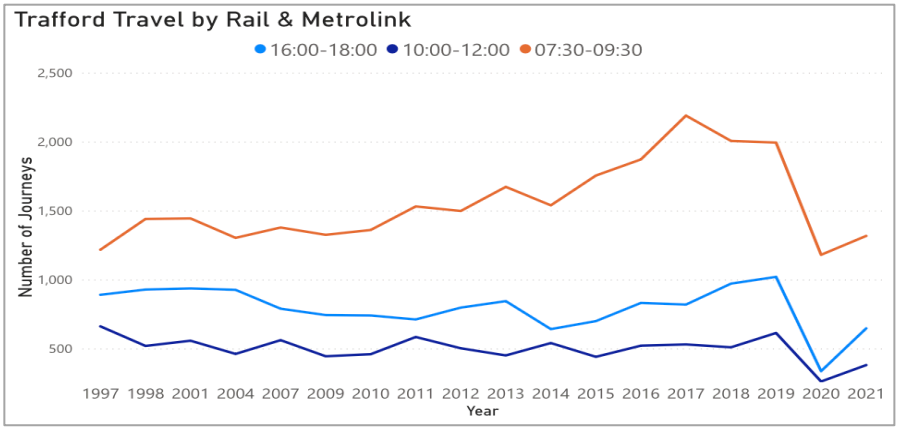
Mobility, commuting and infrastructure.

Rochdale, as part of the Greater Manchester Combined Authority, has a mixed institutional framework for transport. In Rochdale 37.8% of journeys were made by car, 31.6% by foot, 20.5% by bus, with only 6.1% by Metrolink and 3.6% by train in 2022 (TfGM, 2022).[19] Figure 7 shows rail and Metrolink travel data with a stark contrast in commuting patterns between Rochdale and Trafford. The main rush-hour morning slot (the orange line), shows an overall upward trend in Trafford since the late 1990s while those trends have remained low and more or less stagnant in Rochdale during the same period. A 2021 study of the accessibility of jobs and employment, showed that 'better public transport job accessibility' may be locally beneficial in boosting employment for lower income and lower educated groups (Bastiaanssen et al., 2021).

Figure 7: Rochdale vs. Trafford Travel by Rail and Metrolink



Source: Rochdale Journeys Made at Key Times, Transport for Greater Manchester, 2022.



Source: Trafford Journeys by Key Time, Transport for Greater Manchester, 2022.

[19] Only urban centre of Rochdale data available, TfGM, 2022.

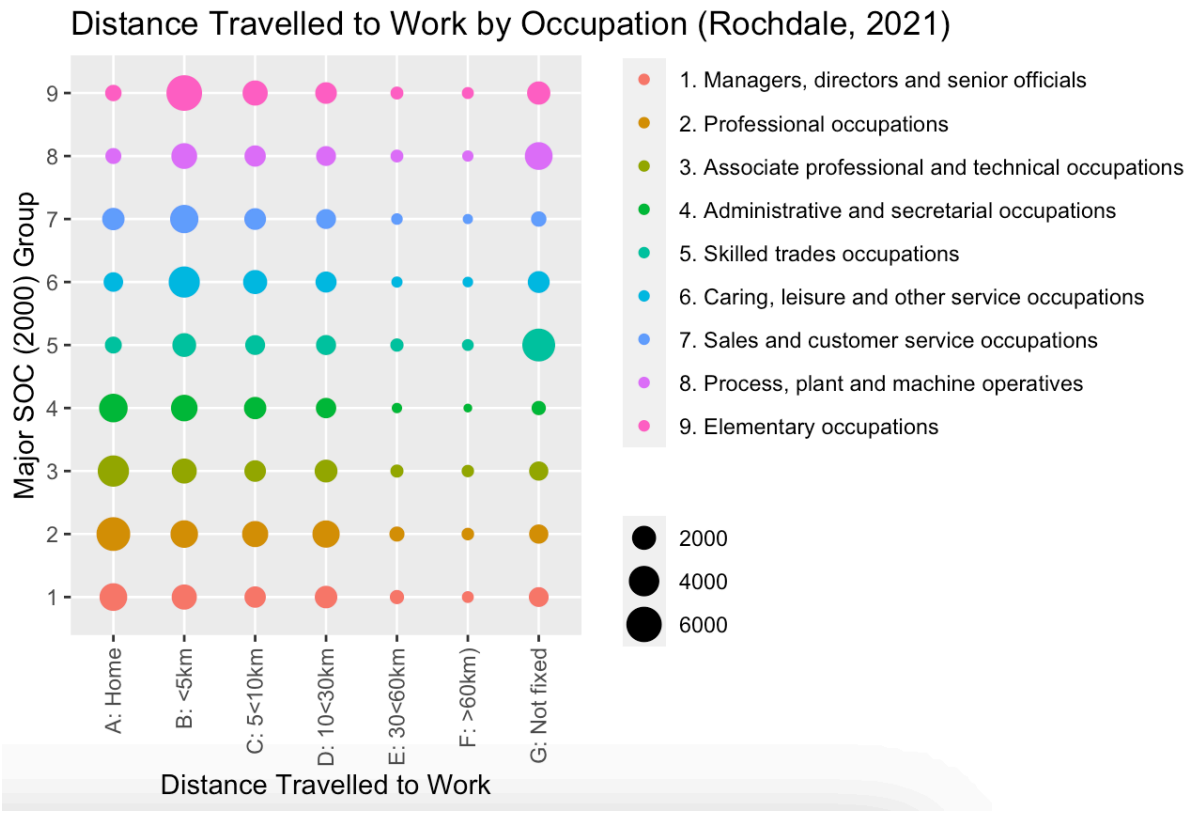
Having understood the local picture in terms of travel at key times (such as rush hour), and types of transport, another important aspect of the connection between physical and of human capital, is commuting behaviour. The Covid-19 pandemic had widespread consequences in terms of the proportion of workers working from home, or in a hybrid manner, with a much greater effect for Trafford (see Figure 7).

Figure 8 shows data from the UK Census, collected in 2021 for Rochdale and Trafford, comparing the distance an individual travels to work plotted against their major Standard Occupation Classification (SOC) grouping. During the 2021 census, local residents were asked how they usually travel to work, what method of transport they use and the usual distance travelled. The results of this analysis are noteworthy for several reasons: firstly, they support the notion that commuting behaviour is heavily related to the *type* of job which people do, and the specific tasks they have to complete in workplace. In Trafford, for example, workers in the first four groups, Managers, Professionals, Associate Professionals and Administrative occupations tend to work mainly from home. As a result, approximately 40.1% of the workforce worked at home in Trafford, compared with only 21.3% in Rochdale (Census, 2021). This is consistent with the higher share of workers in these service-related occupation groups observed in the Labour Force Survey in Rochdale. It is also reflected in the commuting behaviour in Rochdale, which is much more mixed than in Rochdale.

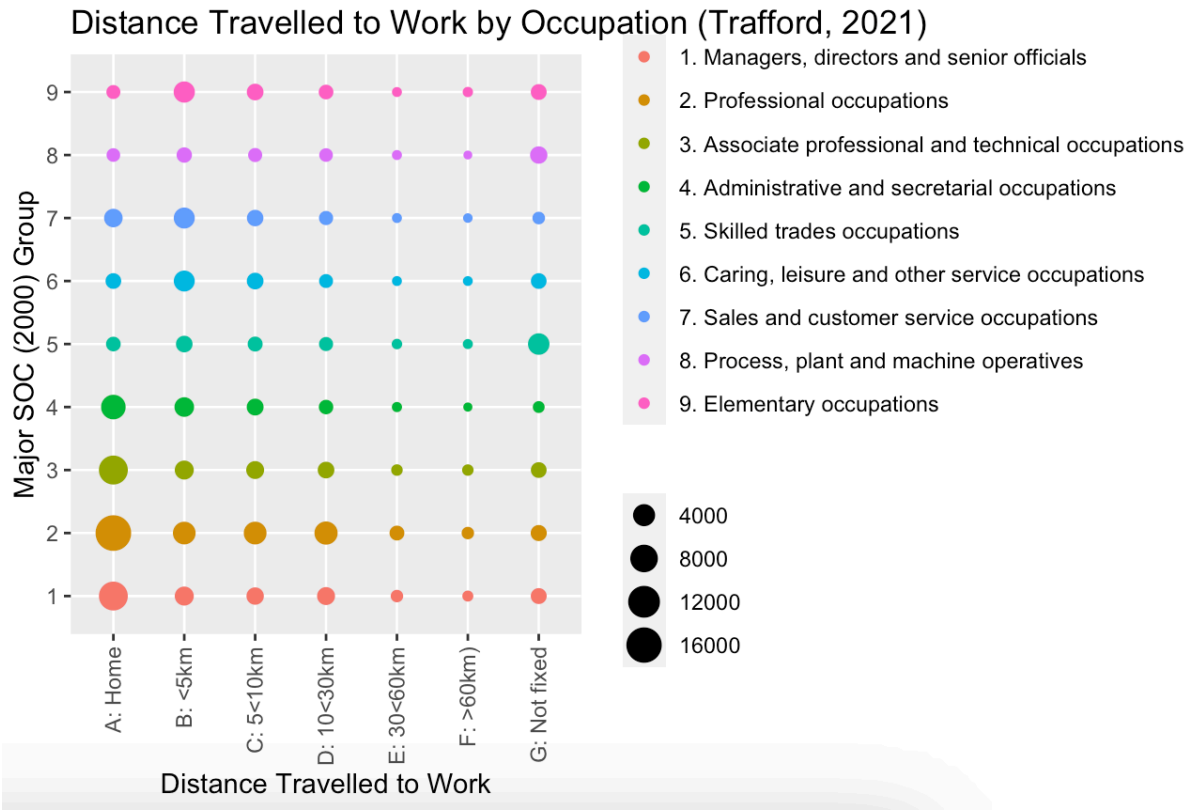
In Figure 8, we see higher proportions of most major occupation groups travelling locally within 5km to their place of work, this is supported by the TfGM survey noted above that approximately 70% of journeys in Rochdale at rush hours are completed by car or foot. This evidence could be interpreted to mean that workers in Rochdale are more likely to live closer to their place of work, and that this may be due to the *nature* of their work, namely in-person services, such as care work, and elementary occupations, such as cleaning staff and retail assistants. Finally, we also observe a higher proportion of various occupations, such as skilled trades and elementary occupations that do not have a fixed place of work or working hours, which in the case of many construction workers, and low and medium-skilled trades people, may imply agency or contract work often requiring travel.

Areas which have poorer neighbourhoods and a population with lower levels of education, have been shown to benefit from investment in public transport as this has been linked with improved job opportunities (Bastiaanssen et al., 2021). In Rochdale, where many workers use bus networks to make relatively short journeys (i.e., from 1 to 10km), improving these services could help boost productivity through greater levels of job accessibility and reduced absenteeism. In turn, investment in intraregional connectivity, i.e., within Greater Manchester, by rail or tram could help attract higher income earning residents with access to the region (Bastiaanssen et al., 2021). Nonetheless, this requires long-term planning in terms of both infrastructure and job-creation to ensure demand in terms of jobs can accommodate and facilitate talent from the wider region.

Figure 8: Distance Travelled to work by Occupation, Rochdale vs. Trafford



Source: Distance Travelled to Work by Occupation (Rochdale), UK Census, 2021.



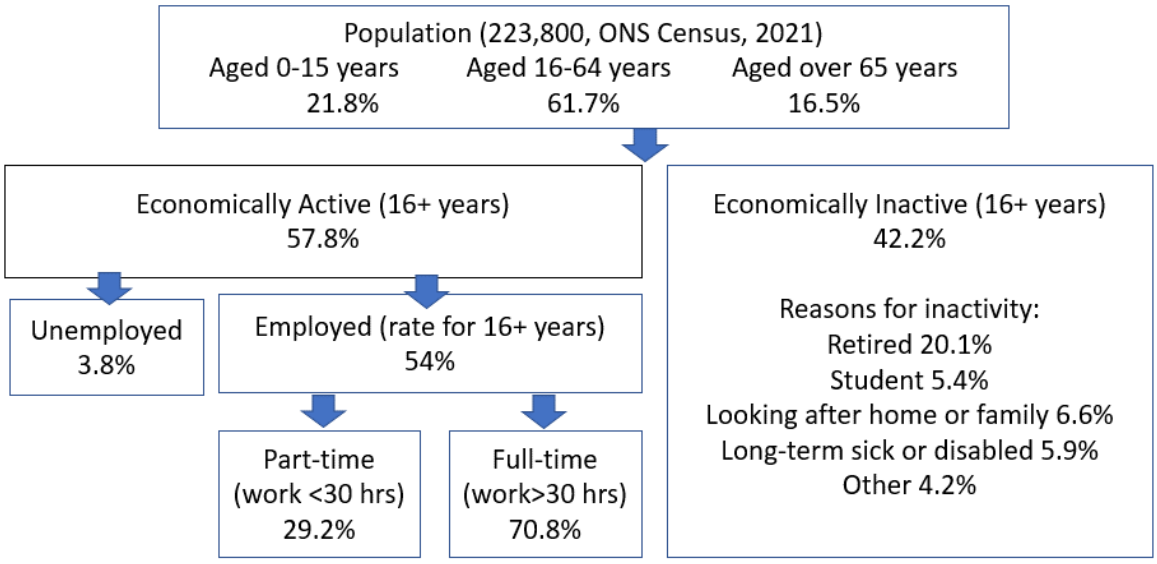
Source: Distance Travelled to Work by Occupation (Trafford), UK Census, 2021.

Human Capital

Human capital describes how well equipped people are to using other assets to produce beneficial outcomes. It reflects people's behaviours, knowledge, skills, experience, and attributes that allow people to be productive. These features are not easy to isolate or measure. Human capital is important to consider from a policy perspective because many of the investments in education and health by the state will see higher returns for individuals, firms and the economy through higher skills and productivity. It is also important to consider how firms are investing in skills through job-specific training. The key metrics that are used to evaluate human capital are education, skills, training and labour market outcomes (which includes employment wages, and health of the population). An insufficient supply of skills quality, proxied here by educational attainment, and a mismatch between the local demand and supply of those skills are regularly cited as reasons for weak local productivity (see Nelles et al., 2023). However, a particular feature of the UK is that local returns to human capital do not appear to generate the rates of return that might be expected on the basis of other countries (Stansbury et al. 2023; Burn-Murdoch 2023). This is reflected in different human capital dimensions and aspects.

Population, Employment and Deprivation

Figure 9: Population in Rochdale, ONS 2021 Census



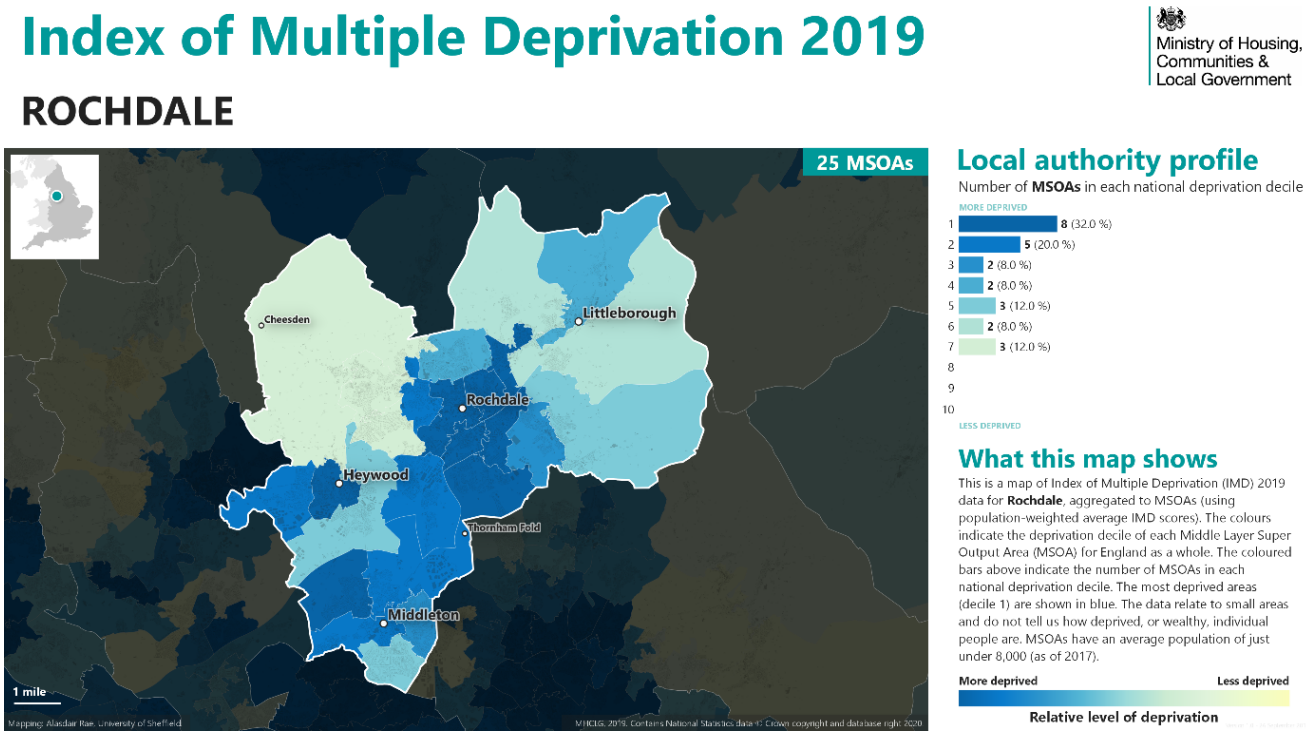
Source: ONS, https://www.ons.gov.uk/visualisations/censusareachanges/E08000005/

Rochdale local authority area had a population of 223,800 in 2021 according to the Office for National Statistics (ONS) Census. The shares of the population for each age group are shown in Figure 9 with the share of population 16 years and over at 78.2%. From the working age population, 57.8% are economically active and are either unemployed (3.8%) or employed (54%) and 42.2% are economically inactive including those that are retired, students, on long-

term sick and looking after home or family. The Census shows that Rochdale is ethnically diverse with 26% share of the population classified as Black, Asian and Minority Ethnic.

Barker (2018) states that 51% of the borough's population is within the large town of Rochdale, with 34% within the two medium towns of Heywood and Middleton.[20] Other smaller towns within the borough include Milnrow, Littleborough and Newhey. In the ONS (2020a) Town's analysis Heywood and Milnrow Built-Up Area Subdivisions experienced population and employment growth between 2009-2019. Littleborough showed declining population but increasing employment, while Rochdale centre and Middleton have suffered with declining employment but population growth.

Figure 10: Rochdale Index of Multiple Deprivation, 2019



Source: Mysociety

The Index of Multiple Deprivation (IMD) from the Ministry of Housing, Communities and Local Government (MHCLG, 2019) measures relative levels of deprivation and is based on 39 separate indicators organised across seven distinct domains that are combined and weighted to calculate the ranking of the areas. Rochdale experiences high levels of deprivation and is ranked as the 20th most deprived local authority in England (out of 317 in total) according to MHCLG (2019). The area has 134 Lower Super Output Areas (LSOA) out of which, 40 are in the

[20] The House of Commons Briefing paper, Baker (2018), sets out town and city classifications for parliamentary constituencies and local authorities. Rochdale borough is represented by two Members of Parliament covering Rochdale and Heywood and Middleton.

top 10% of the most deprived LSOAs nationally accounting 30% of the local LSOAs. By comparison, Trafford ranks 125th local authority for deprivation and has 7 LSOAs which are in the top 10% (5% local LSOAs). The map in Figure 10 shows the larger Middle Super Output Areas (MSOA) with a concentration of deprivation around Rochdale town centre, Heywood and Middleton.

The All Party Parliamentary Group (APPG) for Left Behind Neighbourhoods worked with Oxford Consultants for Social Inclusion to produce a quantitative measure identifying 225 left behind wards in England[21]. These wards are characterised by the dual disadvantages of high levels of deprivation and socio-economic challenges, and are lacking in the community and civic assets, infrastructure and investment required to mitigate these challenges. Within Rochdale four wards were identified as being left behind: Balderstone and Kirkholt, Smallbridge and Firgrove, West Heywood and West Middleton. Today's socio-economic realities have a long history.

Rice and Venables (2021) demonstrate that high UK spatial inequality is associated with recessionary shocks experienced more than 40 years ago. They analyse male employment shocks across local authorities in England and Wales from the 1970s. They find that the largest contraction in male employment rates were due mainly to the loss of manufacturing jobs that occurred between 1971-1981. They show that places that experienced large shocks in the 1970s are still experiencing economic stagnation decades later with higher worklessness, lower wages and greater shares of deprivation. Rice and Venables (2021) show that Rochdale is within the highest quartile for male employment job losses between 1971-81 and then in the top quartile for four domains of deprivation in 2015 (within the 2015 version of the IMD in income, employment, education and training and health and disability domains).

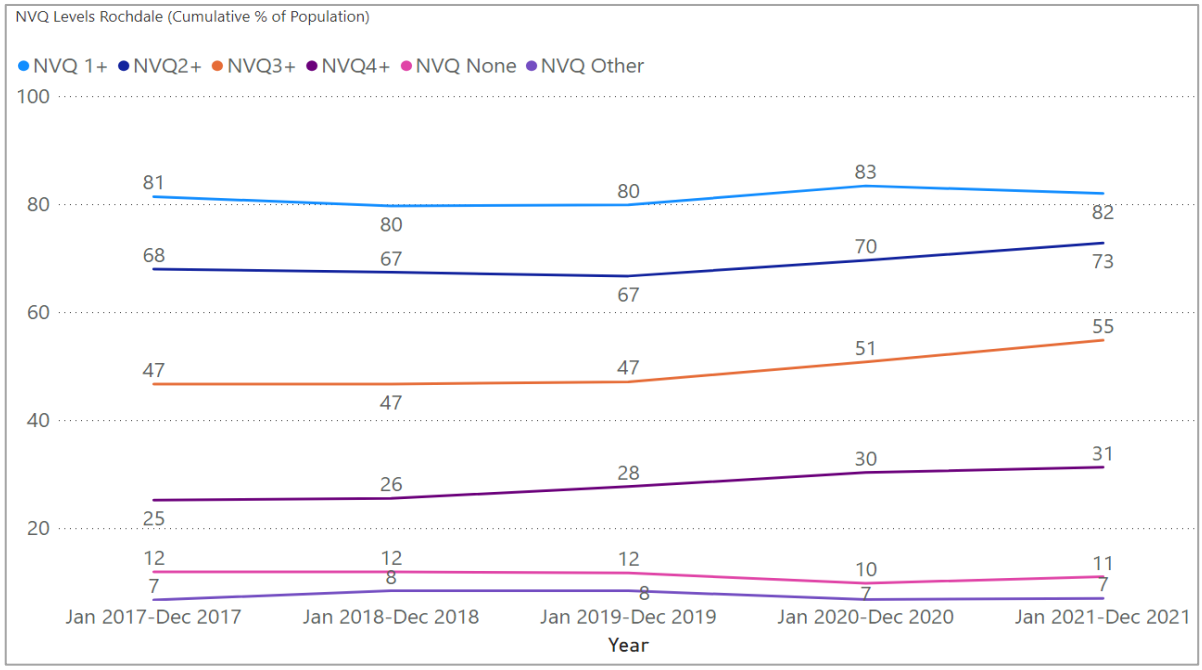
Figure 11 shows the levels of skills in Rochdale from UK Annual Population Survey, between 2017-2021. The share of the working population with NVQ3 and above skills in 2021 is 54.8% (an 8% rate increase to 2021), compared to 61.5% nationally. The proportion of individuals with NVQ levels of 4+, indicating higher-education certificate/BTEC, undergraduate degree, master's degree etc., has increased steadily since 2017, rising to 31.3% (a 3% rate increase on the previous year) of the working population in 2021. The share of those with no qualifications has fallen from a high of 20.7% in 2008 to 11% in 2021. Nonetheless, Rochdale is in the bottom third of local authorities in England for those with NVQ levels 3+ in 2022 (Department for Education, 2022).

Comparing these education outcomes to employment is key to evaluating the creation of human capital in a local area, in particular by understanding the imbalance between demand and supply of human capital (Grimshaw et al., 2023). "Skills mismatch" occurs when there is an imbalance between job requirements, or the demand for certain skills/qualifications, and the skills/qualifications levels of local residents. Comparing Figures 11 and 12, a third of the resident working population have higher level NVQ 4+ qualifications but only a quarter

[21] See: https://ocsi.uk/2022/07/19/list-of-left-behind-neighbourhoods/. For more information on different levels of area classifications see the ONS Census 2021 geographies explanation at https://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeographies/census2021geographies

(23.9%) of the jobs require this skill/qualification level. This is a gap of roughly 8% of workers which are so-called 'over-educated' (Chevalier & Lindley, 2009) and potentially travel outside of the local area for work. This gap could also indicate 'under-skilling', in which workers are in jobs in which their skills are not fully utilised, having implications for job satisfaction, wages (Rafferty, 2020), but also reduced productivity (Industrial Strategy Council, 2019).

Figure 11: Skills Attainment by National Vocational Qualification Level in Rochdale

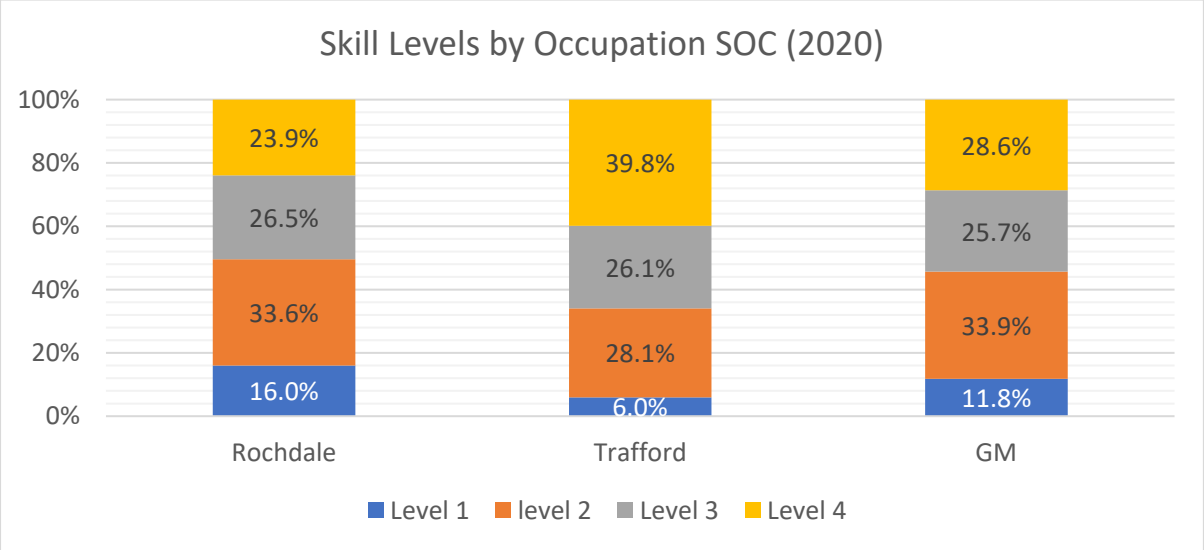


Source: NVQ Levels in Rochdale, APS, ONS, 2022.

In turn, this under-utilisation of skill may also have knock-on-effects on firm-level productivity, by reducing the ambitions of firms with their lower-level of skilled talent (mainly graduates), resulting in lower value jobs, products and services; which are also produced at a lower rate of productivity (Grimshaw et al., 2023). Moreover, Rochdale also has a lower share of highly-skilled jobs[22] (23.9%) compared to Trafford (39.8%) and Greater Manchester (28.6%) as a whole. However, while there are clear differences in terms of the occupational-skill structure between these areas, the level 3 skills category of jobs has remained fairly consistent across all three geographies. Level 3 skill jobs include major occupations such as associate professionals and other managers. This could suggest an opportunity for upskilling of middle-skilled jobs to boost the growth of the higher-skilled job category.

[22] The methodology for Skill Levels and Occupations by the ONS was published in 2022 for 2019 figures: https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2020/soc2020volume1structureanddescriptionsofunitgroups.

Figure 12: Occupational Shares, Rochdale vs. Trafford



Source: Skill Levels by Occupation, LFS, ONS, 2022 (for 2019 data).

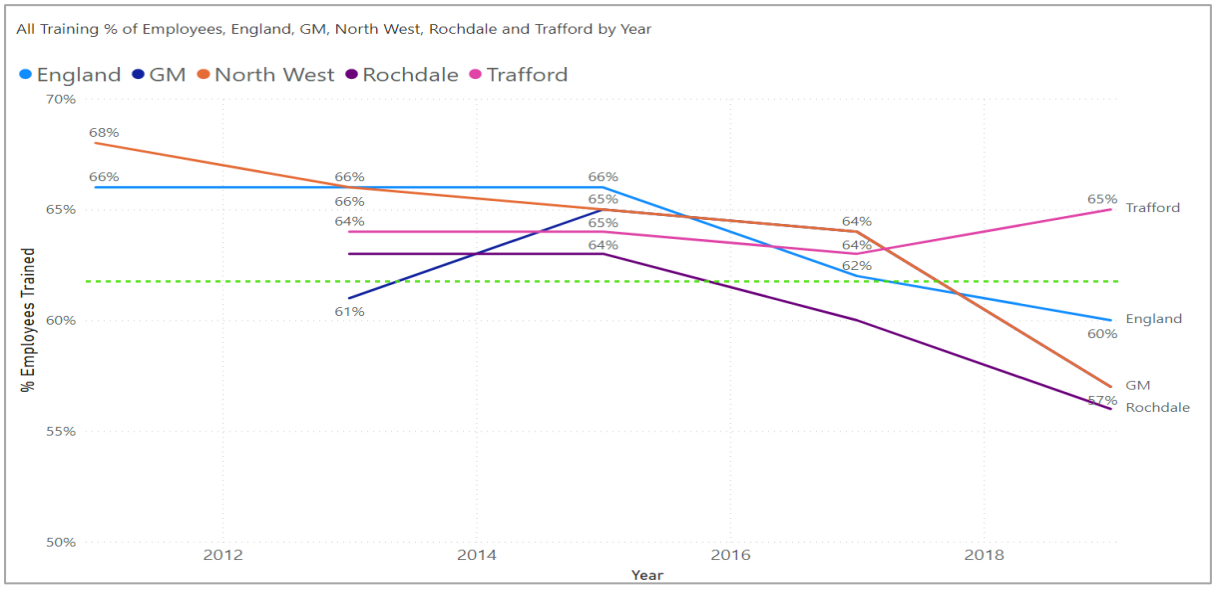
Another key characteristic of the job-structure in the local economy is the share of jobs that require no formal qualifications or skills, such as elementary trades and service occupations. This has often been referred to as the 'low-skills equilibrium', in which low-skilled jobs and wages become trapped in a 'vicious cycle' (Wilson & Hogarth, 2003). Despite this there are potential remedies to this issue, not simply through employment creation, but particularly through job-redesign, improving job quality and other ways to boost the productivity of existing jobs (Sissons, 2021).

Employer investment in training is key to improving job quality and unlocking the potential of the current workforce, this could result in higher productivity gains. Evidence from the Employers Skills Survey from 2011-2019, shows that the percentage of employees receiving training in Rochdale has decreased between since 2013 (Employers Skills Survey, 2011-2019) (Figure 13). This is approximately 3% point lower than the national average, 1% point lower than Greater Manchester, and 9% point lower than Trafford. Despite this shortfall, more recent evidence is promising. Rochdale has many opportunities as around 14% of staff were training towards a qualification in 2019, which is higher than in the other GM boroughs. Moreover, apprenticeship start rates in Rochdale were higher than in Trafford, at around 1,590 in 2021-2022, albeit with a slightly lower proportion of higher-level apprenticeships. Rochdale has a relatively high share of adults over 19 years old in further education and skills participation (ONS, 2024b), that is, 6,356 out of 100,000 population compared to 3,912 for Trafford. Therefore, the evidence shows that local further education providers such as Hopwood Hall College can make a difference in providing key vocational education and training which can help boost local skills, qualification and employment outcomes.

Overall, the figures paint a mixed picture in terms of the stock and quality of human capital in Rochdale and the impact this has on labour market outcomes and productivity growth. However, the evidence suggests some opportunities for strategic investments to improve

human capital accumulation, outcomes and productivity growth, including a focus on higher rates of NVQ 4+ education attainment, higher-skilled job creation, job-redesign and job quality improvements and finally greater investment in adult learning, and employee training in particular.

Figure 13: Training Levels, Rochdale vs. Trafford



Source: Employer Skills Survey, 2011-2019, DfE, UK Government.

Population Health

The Joint Strategic Needs Assessment Report published by Rochdale Borough Council[23] states that Rochdale faces a myriad of health challenges. First and foremost is the lack of capacity to meet demand with subsequent waiting times having a detrimental impact on the health of the local population. An ageing population seems to be a major cause of increased pressure on services. Other factors are the deterioration in capacity during the pandemic, a long-term lack of health service staff and surges in respiratory infections. Many residents in Rochdale lack the fundamental preconditions for good health and wellbeing outcomes. The picture of relative deprivation is worsened by lack of adequate primary care facilities such as declines in GP capacity, capacity at hospitals, in mental health practitioners and elderly care facilities.

RBC has three key areas of focus. The first is disease reduction, which means prioritising the reduction in cardiovascular disease, cancer, diabetes and respiratory illnesses. The second is the need to focus on the wider determinants of health over the longer term such as early years, educational catch-up and work skills and poverty and alleviating the effects of the cost-

[23] See Rochdale Joint Strategic Need Report (2023) https://www.rochdale.gov.uk/downloads/file/963/joint-strategic-needs-assessment-summary

of-living crisis. The third priority is mental wellbeing, which includes the prevention of loneliness and isolation, increasing physical activity, improving resilience and reducing abuse.

The effects of the pandemic continues to play an important role in life expectancy rates in Rochdale. Life expectancy (2018-20) was 76.7 and 80.9 years for males and females respectively, compared to the national average of 79.4 for males is and 83.1 for females. This leaves a gap in life expectancy between Rochdale and England of 2.7 years for males and 2.2 years for females. In comparison, for males in Trafford and Manchester the life expectancy rates were 80.2 and 75.5 years, and for females 83.8 and 79.9 years respectively.

Gaps in life expectancy exist within Rochdale borough between the most and least affluent residents. Males in the most deprived area live around 9.5 years less than the males in the most affluent boroughs. For females the gap in life expectancy between the most and least affluent is about 9 years. Greater investment in preventative health measures is required. Voluntary sector groups, like Action Together, also play a complementary role, for example by organising walking groups and community events to tackle loneliness.

Life expectancy rates could be improved by employing early intervention strategies for children, better access to healthcare and green space for residents in social housing. For example, Blackburn & Darwen Public Health note the importance of children eating one nutritious school meal a day as well as regular exercise. Blackburn & Darwen Council has not permitted the development of hot food takeaways in wards where more than 10% of year six pupils are classified as obese[24]. The council only considers granting planning permission where there are no more than 3 existing hot food takeaways within 400m of the proposed site within specific areas to address disease prevention.

Such policies are potentially relevant for Rochdale, as Public Health England data on density of fast food outlets (2017)[25] shows that the borough had 131.7 fast food outlets per 100,000 population compared to an England average of 96.1 per 100,000. The policy logic of Blackburn & Darwen suggests that the focus should be on the four wards of Milkstone & Deeplish, Central Rochdale, North Heywood and North Middleton, accounting for over 45% of all fast food outlets in the borough.

Access to better healthcare includes health checks for everyone between the ages of 40-74 and targeted health checks for Asian men between the ages of 30-40. This is vital, as estimated rates of diabetes tend to be relatively high within this cohort, and 17.9 % of Rochdale population are from an Asian-Indian/ Asian-Pakistani or an Asian-Kashmiri background. Furthermore, people who are obese are generally thought to be of greater risk of developing type 2 diabetes, and in Rochdale, 67.5% of adults are classed as overweight or obese which is significantly higher than the national average of 63.8%.

[24] Blackburn-with-Darwen-Local-Plan-2021-2037.pdf (blackburn-darwen.org.uk)

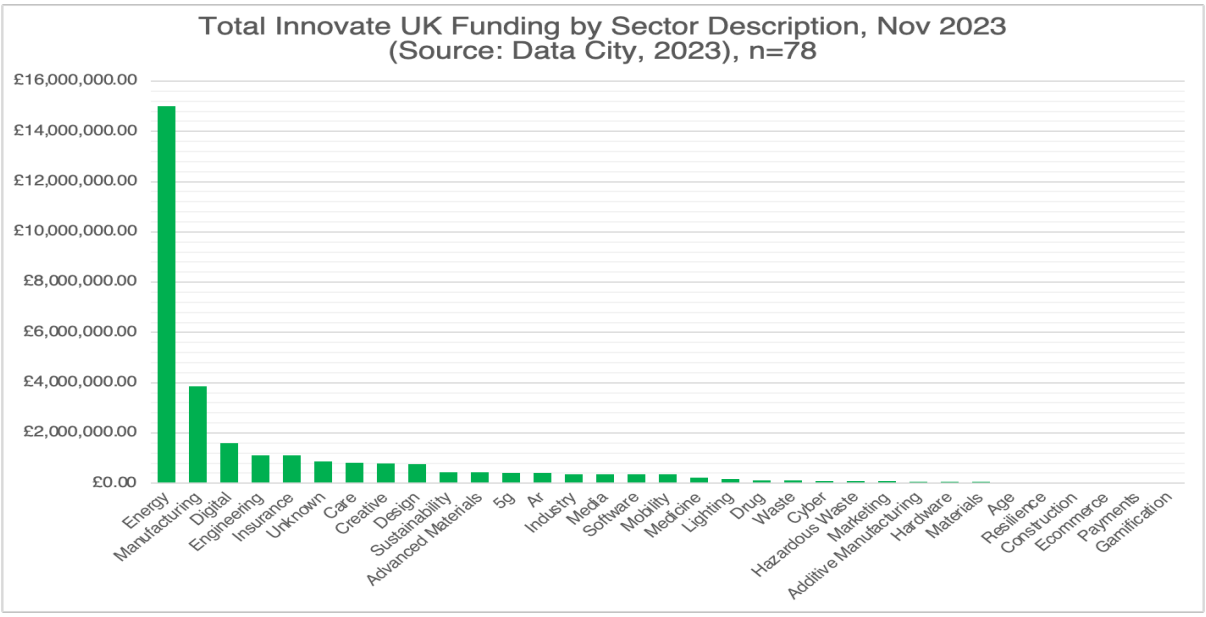
[25] Fast food outlets: density by local authority in England - GOV.UK (www.gov.uk) and see https://lgiu.org/blog-article/calling-time-on-takeaways/

Intangible Capital

The Levelling Up White Paper describes intangible assets as products such as software and databases, research and development (R&D), mineral exploration, and artistic originals, as recorded in the UK National Accounts (capitalised). These are collectively referred to as Intellectual Property Products (IPP). However, there is an additional set of intangible assets, such as branding, financial product innovation, firm-specific training, and design, that are not included as capital assets in the UK National Accounts. These are referred to as "uncapitalised" intangible assets. This makes measuring the contribution of intangible capital makes to productivity difficult to fully assess (Corrado et al., 2020). Despite the difficulties of measuring the effects of intangibles, there is a broad acceptance that intangible assets are an important source of productivity growth and competitiveness, and, if intangible assets were successfully accounted for, countries may be more productive than the current data show (Melachroinos and Spence, 2019).

The importance of intangible assets has grown substantially over recent decades, as the UK's economy transitions from manufacturing to a knowledge and service-based economy which uses many intangibles. In terms of intangible capital, our research has focused on perceptions of local stakeholders regarding the local economy, and the intangible aspects of the economy which are potential strengths.

Figure 14: Business Sectors in Receipt of Innovate UK Grants, Rochdale



Source: Data City.

Innovation is one key motivation for investment in intangible assets. Figure 14 shows the amounts of funding granted to businesses in Rochdale from Innovate UK (n=78, as of November 2023), illustrating which sectors can be described as strategic sectors for the local area. In particular, various subsectors of advanced manufacturing, energy and digital firms have been successful in securing innovation grants. However, it is worth noting that, compared to Trafford, businesses in Rochdale still received, on average, around £100,000 less per grant from Innovate UK Funds. Nonetheless, supporting the creation of business

ecosystems, initiatives, such as Atom Valley, through innovation grants will undoubtedly contribute to further boosting knowledge capital, lead to further growth and attract more talent to the area.

Financial Capital

The accessibility of finance in a place plays a critical role in determining the level of economic dynamism and resilience of the place. It is essential for allowing firms to commercialise new operations, enter new markets, and achieve rapid growth (Becchetti and Trovato, 2002). As such, finance is important for new firms to establish themselves, and for older firms to scale-up their operation. These firms can be part of a new or emerging economic sector, and the access to finance is vital for the place to be able to establish and grow new economic sectors.

Regarding access to banks for businesses and individuals, Rochdale has comparatively low provision, but access has stayed relatively stable compared to the regional and national average. Data from the Inter Departmental Business Register[26] shows that number of banks in Rochdale has halved from 30 to 15 between 2010 to 2023 (0.67 per 10,000 residents) with banks in Trafford also falling from 50 to 25 over the same time period (with a slightly higher ratio of 1.06 banks to 10,000 residents). In recording bank branch closures since 2015 Which reports that the constituency of Heywood and Middleton has lost much more of its network since 2015 (76.9%) with three banks branches left in 2024. Rochdale constituency has lost 18.2% of its network with nine bank branches remaining in 2024[27].

Government data on individual insolvencies[28] has recorded these are at 32.1 declarations of bankruptcy per 10,000 residents in Rochdale, higher than the England and Wales average of 25.1, 22.4 in Trafford and 29 across Greater Manchester and the North West. Stephenson et al (2023) note that boroughs within Greater Manchester score lowest in its Demos Good Credit Index with areas facing credit deserts with people caught in 'bad credit cycles' only being able to access high-cost and inflexible sources of credit. Rochdale is 11th from bottom in the Demos ranking of UK local authorities for access to credit.

Social Capital

Social capital refers to the extent and nature of peoples' connections with others and the collective attitudes and behaviours between people that support a well-functioning, close-knit society. It can be classified into four categories: personal relationships, social network support, civic engagement, and trust and co-operative norms.

Putnam (2000) describes "bonding" and "bridging" social capital. Bonding social capital is the connections within social groups or communities and is generally a result of similarity in

[26] Accessed via Nomis https://www.nomisweb.co.uk/.

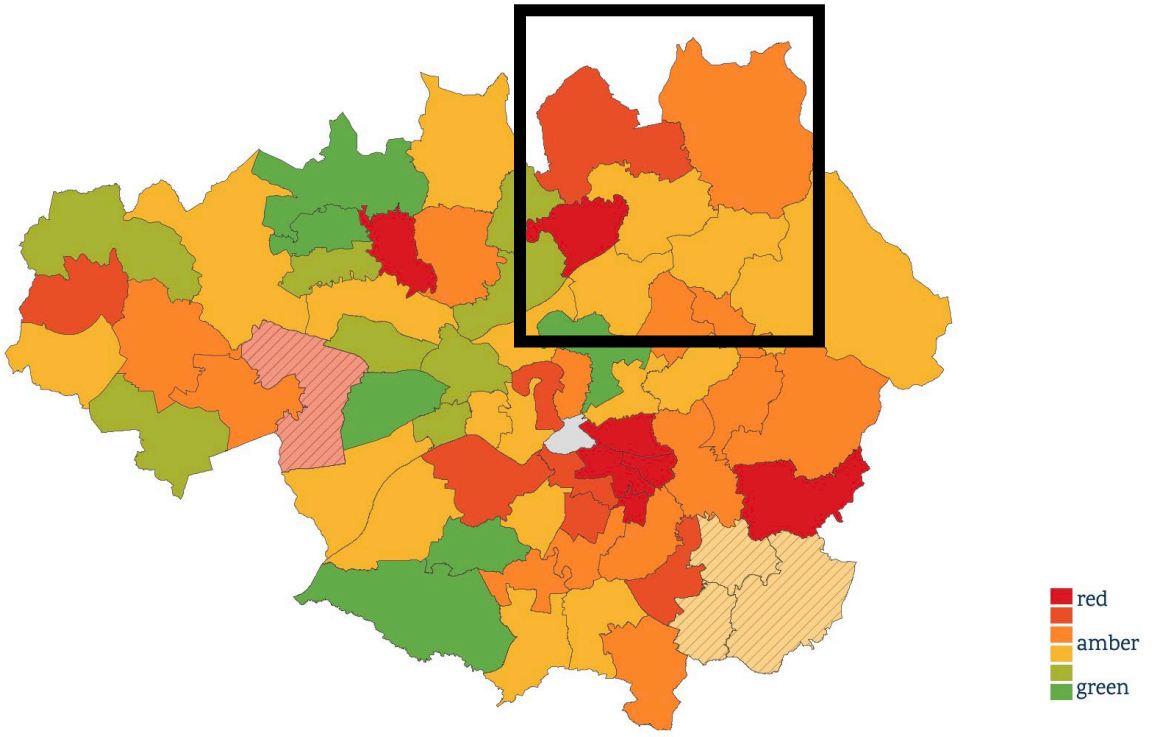
[27] See Which article dated 4/4/24: https://www.which.co.uk/money/banking/switching-your-bank/bank-branch-closures-is-your-local-bank-closing-ayYyu4i9RdHy

[28] See https://www.gov.uk/government/statistics/individual-insolvencies-by-location-age-and-gender-england-and-wales-2022

demographic characteristics, attitudes and available information and resources. Bridging social capital is between social groups. Putnam (2020) suggests that bonding social capital is good for "getting by" and bridging is crucial for "getting ahead". Putnam described bonding social capital as inward looking, reinforcing exclusive identities and promoting homogeneity; whereas bridging social capital as outward looking, promoting links between diverse individuals.

The '#BeeWell' survey, a collaboration between the GMCA and the University of Manchester, evaluates life satisfaction, autonomy and optimism among teenagers across local boroughs (Rochdale n=1,342). Attitude or perception surveys such as the BeeWell survey act as a window into the perceived opportunities which local residents feel that they have the agency or ability to act upon. With a diverse population, community cohesion is evidently priority for the borough, and young people in particular are essential to strengthening community bonds. Improving the perception young people have over their life prospects and opportunities may also have spill over effects into the self-investment and retention of human capital, strengthening local networks and shifting the outward perception or reputation of an area as to its "livability".

Figure 15: Life Satisfaction among young people (12-15yrs), 2023, BeeWell Survey



Source: BeeWell study web-site: https://beewellprogramme.org/greater-manchester/

Figure 15 shows that overall life satisfaction is slightly below the GM average in Rochdale, particularly lower in Heywood and Rochdale North. While the raw data suggests there may be gender differences in Rochdale, the samples enter double-digits and statistical inferences

should be drawn cautiously. In terms of autonomy, the perceived ability to exercise control over one's life, the picture is more mixed, with Rochdale South being above the average, and others more on the mean. Finally, optimism also shows a mixed picture, with students in Heywood again with more negative perception of their future compared with more central areas (Rochdale South). These psychological metrics are well-established and provide insight into how young people perceive their life chances and opportunities in an area. Improving the quality of life for young people could have several knock-on-effects, such as retaining local talent, networks and entrepreneurship. Moreover, the collaboration promotes the development of further components of social capital, by building awareness of public health and safety, discrimination and also participation in culture and the arts, all aimed at promoting the opportunities and wellbeing of young people in the area. In light of these challenges, it is worth noting that the '#BeeWell' report from 2023 pointed to the fact that a recent local government document in Rochdale reflects the findings and priorities of the BeeWell survey.

In terms of the local actors on the ground, who are implementing these priorities, the main third sector groups operating in Rochdale include Action Together, Big Life (National Lottery funded) and Middleton Co-operating. According to Action Together (2022), Rochdale has approximately 1,239 voluntary groups, social and community organisations, comprising around 42,626 volunteers. This impressive network provides essential service provision responding to a plethora of local needs, and coordinates with boroughs across Greater Manchester. However, the report notes that this vital community asset is under strain both from increased demand and difficulties in access to funding, despite record numbers of volunteers (Action Together, 2022). Clearly, this is an area in which institutional connectivity, i.e., bridging gaps as discussed earlier, combined with more holistic policy design and implementation may allow for further community resources to be unlocked.

Institutional Capital

The Levelling Up White Paper describes the important role that institutional capital can play in the development of local economies through strong leadership and local governance; fiscal, administrative, and policy autonomy; relationships between local government, businesses, communities, and individuals; and local knowledge. As such, it positions key local anchor institutions and their ability to work towards mutually beneficial aims as a central theme to institutional capital. Rodríguez-Pose (2020) links the role of institutions to the fortunes of territories, arguing that institutions directly influence local economic growth as they affect the capacity of economic actors interacting within places to attract investment and high-growth industries.

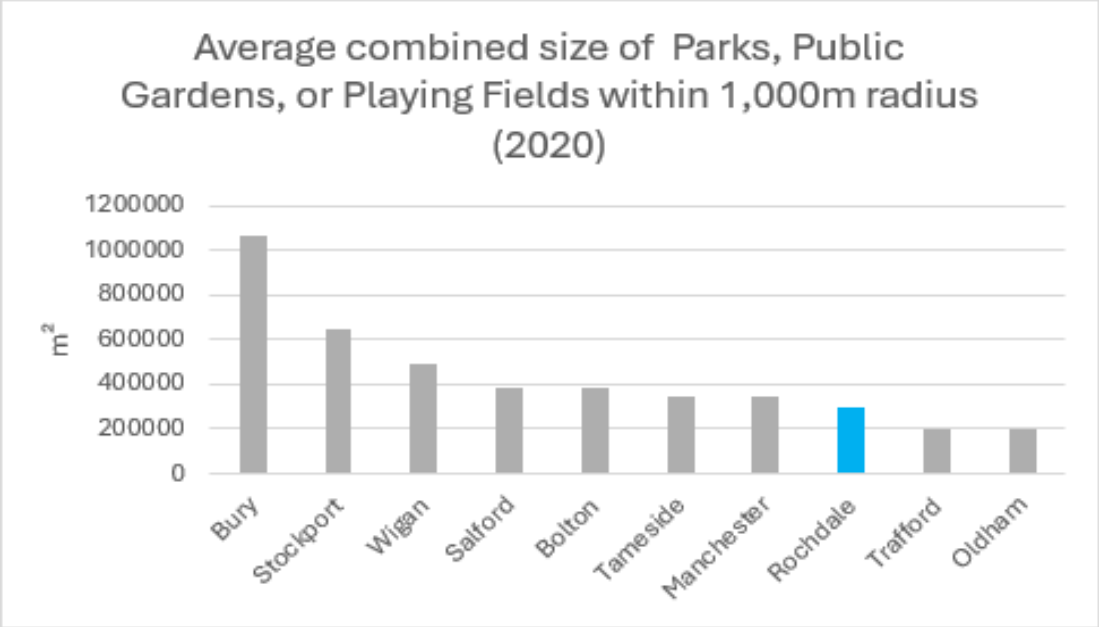
Some thinking already connects elements of institutional capital, such as the benefits of strong networks (see also social capital) for knowledge transfer and interactive innovation, and suggests that this is best realised at the regional level as part of regional policy (Morgan, 1997). Measuring institutional capital may therefore require gaining an understanding of a locality's networks and ecosystems because collaborations, both formal and informal, will support the social development and economic growth of a region.

Local institutions working together is crucial to increase their economic impact and sustainability in their areas such as through more locally focused recruitment and procurement strategies (see Martin, et al, 2022). Increasing levels of wealth and income in Rochdale will depend on the activities of the private, public and voluntary sectors working together with existing and new institutions in the borough and nearby. This does not just include the key public sector anchor institutions within Rochdale such as RBC and RDA, but also the NHS Trust and Hopwood Hall FE College. It also includes GM institutions with locations or interest in the borough such as GMCA, GM Chamber of Commerce and GM Universities and private sector firms based in the borough. It is also important to acknowledge the importance of preserving institutions and symbols of identity that generate local pride including those in sports, heritage and culture, as well as local businesses such as pubs, historic shops and facilities and local papers. These institutions help build and retain a strong social fabric.

Natural Capital

Natural capital refers to a place's stock of natural resources and ecosystems that provide a wide range of valuable services and products for humanity. According to the HM Treasury Green Book (Treasury, 2011), it encompasses everything from the quality of the air, the quality of the water, the fertility of the soil, as well as vital ecosystems such as forests, wetlands, oceans and rivers. These assets can provide economic and social value either through their produce (such as from forests), or from the services that they provide (such as recreational space), or from the inherent value that is placed on them by local citizens (such as biodiversity).

Figure 16: Average combine size of parks, public gardens or playing fields



Source: ONS (2020b)

Within Rochdale, a number of non-publicly owned natural assets have largely outperformed the national and regional average. For instance, the ONS (2020b) utilise ordnance survey data to show the percentage of houses in Rochdale with access to private green space (92%) is marginally above the average for the UK (89%) and North West (91%) and is in line with the percentage for Trafford (93%).

However, the ONS (2020b) also find that Rochdale has comparatively poor provision of public green space. Using Ordnance Survey data, they calculate that the average distance to the nearest park for Rochdale residents is 357m, and there are just 4.25 parks within 1 kilometre radius of residential dwellings on average – both metrics being the poorest in Greater Manchester. As shown on Figure 16, the average combined size of that nearest parks, public gardens and playing fields with Rochdale ranking 8th within amongst GM boroughs (the average size of parks is 78,275m^2, which ranks as 6th largest in GM).

Wildlife assets can also provide valuable services for residents. Access to nature has been shown to be beneficial for both mental and physical health (Bratman et al., 2012), as well as general wellbeing (Biedenweg et al., 2017). Moreover, nature can provide leisure opportunities that are strongly associated with the perceived quality of life in a place (Jeffries and Dobos, 1993). Woodlands can provide these services, and according to the Department of Environment, Food, and Rural Affairs (DEFRA), Rochdale has 822 hectares of woodland within the borough. This is only 5% of the land within Rochdale, meaning it has the lowest proportional forest coverage amongst the GM boroughs. The moorlands around Rochdale may also provide substantial natural assets, but abundance of rural space may present a barrier for development within Rochdale, since 63% of the borough is covered by green belt – while Trafford is only 37.6% covered, and Greater Manchester only 37.8% covered (Rae, 2015).

Regarding air quality, the performance of Rochdale is the same as the regional average. DEFRA (2023) provide estimates of air quality based on data collected by the Automatic Urban Rural Network of pollutions sensors. The maximum concentration of Nitrogen Dioxide (NO2) in the borough is 36 μg m^{-3}. In comparison, in Trafford it is 37 μg m^{-3}, and Greater Manchester it is 36 μg m^{-3} (DEFRA, 2023). These amounts are higher than the UK median (26) and the North West median (29). The pollution is mainly from the burning of fossil fuels and Rochdale has the M62 motorway running across the borough.

4. Qualitative Analysis

We used a mixed methods approach to deepen our understanding on how some of the most abstract and difficult to quantify elements of the capital's framework were being thought about in practice. We envisaged that the qualitative analysis would help to inform our understanding of how the capitals of social, institutional and intangible were thought about in practice. However, we did not exclude the other capitals of physical, financial, human and natural and all seven capitals have been included in this analysis.

In addition to gaining insights into how the capitals are understood across a range of stakeholders, we are also interested in the interdependencies across the capitals. The

experience in Rochdale will be used to form the basis of this initial understanding. It is important to emphasise however that these indicative findings reflect the experience of participants in Rochdale. As such, the analysis in the Rochdale report is place specific rather than generalisable. We will however continue to work across comparable places in the UK and repeat this process. As we integrate the analysis from the different locations, we will be able to comment on patterns and themes that may not be place specific and contribute to a broader understanding of how the capitals framework can be utilized.

We used three qualitative methods to broaden our understanding of how key stakeholders in Rochdale are thinking about the capitals. These included a baseline survey that asked for both descriptive responses as well as ranked responses. A stakeholder workshop, where key actors from across Rochdale shared their views on the capitals in relation to their experience or working in the town and semi-structured interviews, where participants were asked questions with a particular emphasis on institutional and social capital.

Participants were selected in relation to two broad criteria. Firstly, their experience was aligned to one of the capitals, recognising some cross over into other capitals. Secondly, by the organisation that they worked for and its strategic importance to Rochdale. We gained insights from a broad and diverse range of key stakeholders working in Rochdale and across different organisations, sectors and levels of seniority.

This included participants from Further and Higher education; Local Government; the Business Community; the Community and Voluntary Sector; Transport; Civic Society; Finance; and Environment sectors.

Stakeholder's Workshop and Survey Results

In January 2024, the IPPC project team held a meeting with various public and private stakeholders in Rochdale to discuss each of the seven capitals in a group setting. A brief Qualtrics survey on productivity and the capitals was completed by participants at the start of the meeting. The IPPC team then gave brief definitions of each capital area prior to a ten-minute discussion per capital, followed by a general discussion.[29]

A 'wordcloud' package was then used to visualise the most frequent keywords from the various discussions.[30] The strength of this textual analysis is to understand how dominant themes emerge in the form of keywords across different discussions within the seven capitals. Figure 17 show visual panels A-F with the keywords from each 10-minute discussion:

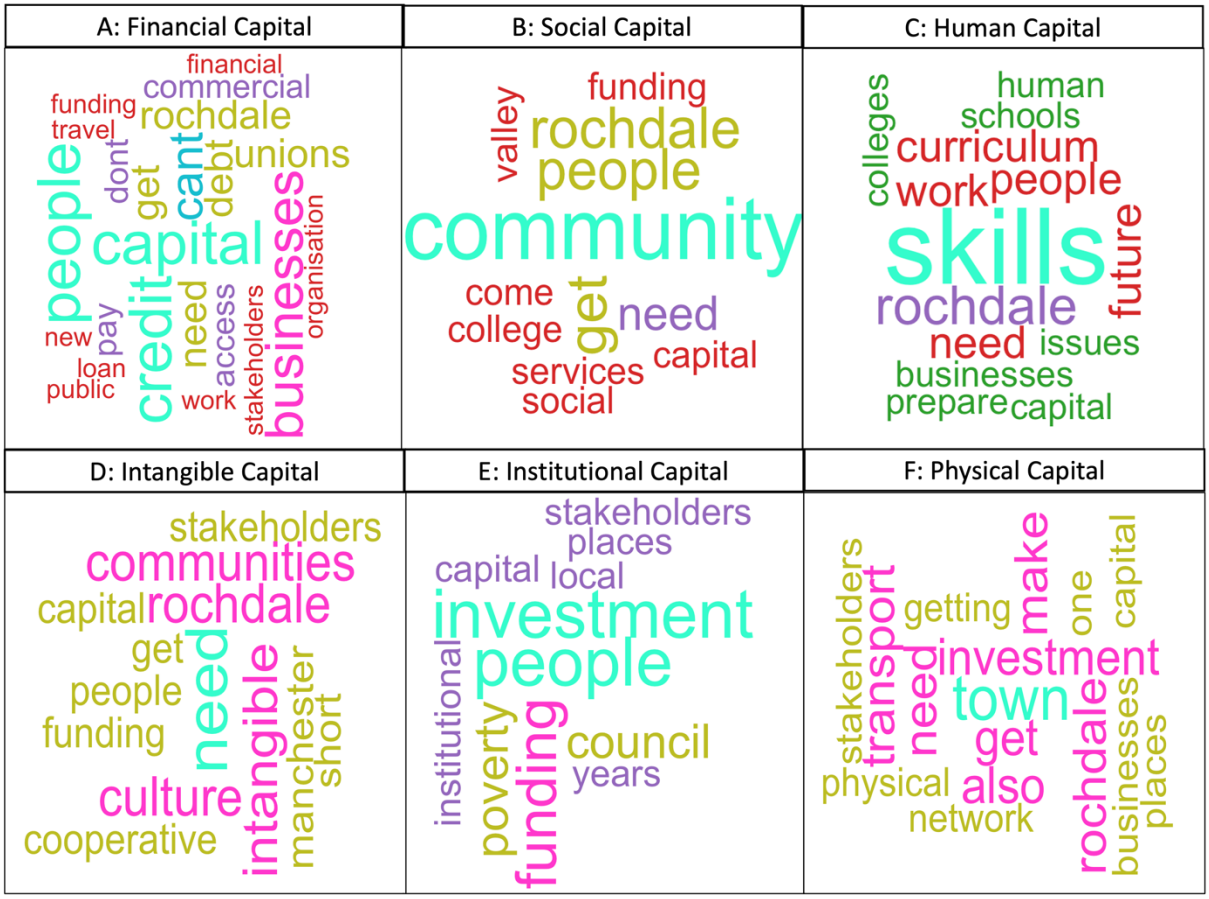
Firstly, regarding **financial capital**, as seen in A, there is a more direct and personal focus highlighted by words such as "people", "credit", "debt", "can't" and "get", expressing

[29] All participants gave informed consent, no personal information was collected and any potentially disclosive data has been anonymised. The meetings were recorded by the IPPC project team and notes transcribed from plain text files into data frames in R.

[30] For a detailed discussion, see https://cran.r-project.org/web/packages/wordcloud/wordcloud.pdf. A range of 'stopwords' was employed to avoid muddling the important themes with common language and functional words, such as 'and', 'but', 'the' etc..

individual struggles with individual financial security and debt. Secondly, the issue of firm access to finance and investment is picked up by references to “businesses”, “funding”, and “commercial”. These two central themes emphasise anxiety or inability to gain access to either individual or commercial financing, and to maintain financial stability in the case of personal finance.

Figure 17: Capitals Word-cloud from the Stakeholder’s Workshop



As shown in B, “community” is a dominant theme in the discussion on **social capital.** Again, there is a reference to the personal element of “people” as well as “funding”, “need”, “social services” and “college”, demonstrating that stakeholders associate aspects of funding and the provision of social services, including education, with the state of social capital in their borough.

Thirdly, C depicts the **human capital** discussion. This dialogue focuses mainly on education-specific themes, such as “skills”, “curriculum”, “future” and “colleges”. The keywords highlight the perception that human capital is heavily linked to “business” and “work” and the education system’s role in “prepar[ing]” the “future” for individuals in Rochdale.

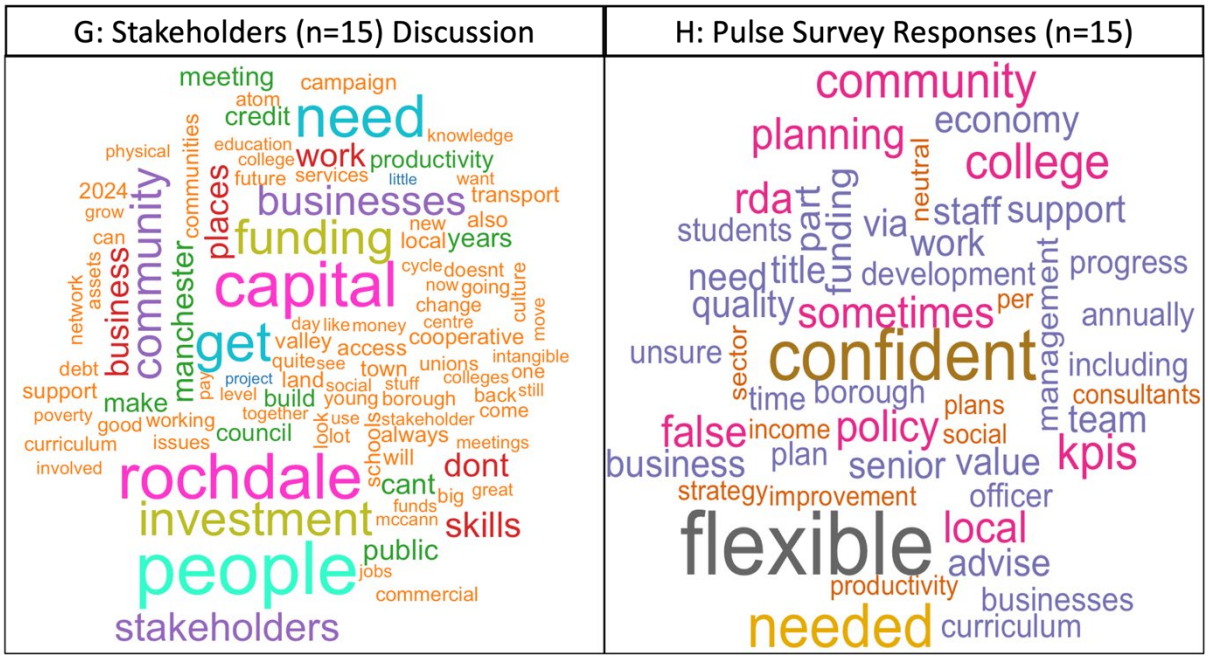
In terms of **intangible capital** (D), the discussion amongst local stakeholders seems to depart quite starkly from academic discussions. Instead, the focus is on “culture”, “communities”,

"cooperative" and "people", meaning that the priority is on supporting individuals or the local population to enhance "culture" rather than innovation, research and development per se. This is an important point for policymakers, as this demonstrates how far the discussion on the local level is from an understanding of the 'knowledge economy', innovation and research and development; perhaps showing a problem with policy-diffusion. It is possible that local stakeholders perhaps do not see the relevance of these items to the everyday work they undertake to support the local area.

On **institutional capital**, visual E explains how stakeholders link "poverty" with issues relating to "investment" and "funding", while the reference to "years" could highlight frustration with working within the institutional frameworks and timings which local policymakers are beholden to.

Finally, the discussion on **physical capital** (F) reveals the importance of connectivity. "Transport", "network" and "need" emphasise how stakeholders perceive their local area as part of a wider infrastructure network, "town" is a reference to getting to the city-centre of Manchester for example. The link to "business" and "investment" forms part of the understanding that the accessibility and connectivity of a place is tied to the ability of firms to function and be competitive.

Figure 18: Visual Summary from the Stakeholder's Workshop



The final two word clouds bring these themes together in Figure 18. Firstly, on the left panel, visual G is a compilation across all discussions. The most common themes are arranged by: "people", "need" and "community", and these all relate to a social understanding of the local resident population as a cohesive group. Secondly, the financial aspect of local governance is

clearly a dominant theme, expressed by “investment”, “business[es]” and “funding”. Other smaller themes in the discussion include “skills”, “work” and “productivity” and “credit”.

This analysis is key to appreciating the way in which stakeholders, who implement a range of policies and services on the ground in local areas, understand concepts and methods that are used to design national policies in the wider framework of local growth. Moreover, when compared with themes in panel H, in which the survey asked the participants about their roles, planning, productivity and themes discussed in panel G, there is some contrast. Some key themes are about “confiden[ce]” and “flexibil[ity]”, which seem to express that the current perspectives need to consider these themes in a different way to better “plan[ning]”, “strategy” for the policy-challenges, rather than focus on KPIs (Key Performance Indicators).

Interviews

This section of the report includes insights gained from the interviews that will be important to support partners across Rochdale to optimise the opportunities that Atom Valley presents. They are based on the analysis of eight semi-structured interviews.

Interview Objectives:

A. To gain insight into how the participants make decisions, who they consult, what they prioritise, where they seek assistance, and what they may require assistance or advice on.
B. Explore participants' experiences and perspectives related to both productivity and investment planning.
C. Identify common themes and patterns in participants' responses.

Broad Research Questions:

1. What are the key factors influencing strategy and investment planning from the perspective of participants?
2. How do participants think about productivity in their working lives?
3. Are there common challenges or opportunities related to productivity and investment reported by participants?

Questions were designed with an emphasis on social and institutional capital. Interviews were carried out online and lasted for one hour. Data was captured by notes and audio recordings and each interview has a typed verbatim transcript. From this, there were two analytical approaches taken. Firstly, accounts that related to a specific capital/s were grouped, to see patterns in the types of things that were being discussed in relation to the capitals. This was then analysed in relation to links across the capitals. Secondly, themes were generated that described common challenges, concerns and strengths that were evident in the accounts that participants shared. These have been condensed into four core categories that provide insights across the capitals with a particular focus on **social and institutional** capital and are detailed in the section titled *themes*.

The Findings

Rochdale, as part of Greater Manchester, is a historically significant location having made a considerable contribution to the Industrial Revolution. Rochdale's future is building on this heritage and being shaped by innovation, advanced materials, and machinery through the Atom Valley development.

It has several credible assets to draw on, including the region's universities, an outstanding Further Education College, A dedicated economic development agency and a vibrant Community and Voluntary Sector (CVS). It has a committed and ambitious Local Authority and Combined Authority as well as Atom Valley being the first Mayoral Development Zone. As a result, it has many potential advantages and capitals on which to optimise.

However, it also has challenges, and although the investment already committed to the area is one to be commended, Rochdale can benefit further by creating a narrative around Atom Valley that resonates with its diverse population, showing that it, and future investments, are inclusive and beneficial to the whole community. There is a need to address the social and economic challenges faced by some its population.

It was clear from the interviews, that there are many committed and highly capable individuals and teams working within Rochdale and the wider Greater Manchester area. There are examples of excellent collaboration, and Atom Valley itself would likely not have happened if there were not strong networks and collaborations. That said, there was a notable disconnect between some networks, leading to some parts of the community having a sense of alienation from Atom Valley, suggesting that its benefits were not believed to be either far reaching or going to address the immediate needs of some members of the community. For Atom Valley to be fully embraced as an investment that benefits the town, and, to connect residents into the training and job opportunities that it can provide, it needs not to be seen as something that is not "theirs" but "ours".

An overview of the interview findings

The qualitative data highlights the importance of taking a holistic approach that considers different forms of capital, such as human, social, and institutional capital, rather than focusing solely on skills and job creation.

When Rochdale does think about jobs, it needs to create good quality, productive jobs (from entry level to advanced positions) that can provide prosperity for local communities. The qualitative data highlights the challenges of shifting mind-sets from a job-focused approach to a productivity-focused one, and the importance of engaging with diverse stakeholders, including local authorities, businesses, the community voluntary sector and educational institutions to develop coherent and inclusive strategies is key.

The qualitative data emphasises that the plans for Atom Valley need to have flexibility, agility, and a focus on building on existing strengths and capabilities within the region, rather than imposing top-down solutions. The data suggests that although there are very strong allegiances across some institutions in Rochdale, greater integration and meaningful horizontal governance would address concerns about lack of inclusion and representation.

The collaboration across the key anchor institutions in Rochdale, including partnerships and networks that extend beyond the geographical boundaries of Greater Manchester, have shown great success in securing and directing funding from initiatives like Levelling Up, the Innovation Accelerator, and the Strength in Places Fund to support innovation, skills development, and infrastructure in the area. Given the institutional commitment and financial investment into innovation in the region, the interviews emphasise the importance of engaging with local communities, schools, and colleges and training providers to inspire interest in STEM subjects and ensure the benefits of investment reach the wider community. This is an area that requires further resource than is currently in place. Although this focus is required, it should not come at the expense of engagement with other community networks and needs.

In addition to the successful approaches taken in Rochdale to drive long-term improvements, concerns were raised about the need to generate better outcomes by addressing the complex and intersecting challenges some residents face, such as homelessness, addiction, mental health issues, and involvement with the criminal justice system. The qualitative data highlights some key strengths in services that address these needs, from both the statutory services and the CVS in Rochdale. Approaches that prioritise co-production with a broad range of stakeholders, including those with lived experience, frontline workers, and decision-makers to think differently about the needs of the local community were advocated. This collaborative approach aims to unlock self-responsibility and empower residents.

The importance of having multiple, accessible entry points to services, rather than expecting people in crisis to navigate siloed systems was identified as an area for improvement, along with greater diversity and representation (role models) to reflect the wider community. Greater collaboration and representation across institutions would help to redress concerns around engagement with some communities. Data and insights from diverse sources, including quantitative and qualitative measures, are crucial, though gaps remain in fully capturing the nuances of poverty and disadvantage.

Collaboration is key, but navigating the different perspectives, power dynamics, and constraints of statutory services, community groups, and people with lived experience presents ongoing challenges. A broader definition of "wealth" and "productivity" that encompasses social and cultural capital, rather than just financial measures would support the engagement and integration of the strengths of the local community. The value of green spaces, arts, and cultural activities in fostering a sense of belonging and inclusion within the community were advocated, along with amplifying community voices and perspectives, rather than being solely led by the public sector agenda. A key challenge is ensuring diverse community voices are heard and able to influence decision-making processes.

A significant challenge for Rochdale is creating a stronger positive, future facing narrative and concerns around Rochdale's current narrative are challenging for residents and for future investment. The qualitative data highlighted the challenges of overcoming negative perceptions of Rochdale, and the need for a cohesive strategy that addresses broader issues like transport, housing, and community inclusion alongside the innovation agenda. The effective integration of data and market intelligence in informing strategic decisions and

partnerships was seen as vital, although there were some concerns about the granularity of data, particularly around the private sector landscape in the area.

There is a significant challenge of overcoming negative perceptions of Rochdale. Greater integrations of diverse stakeholders and understanding how to coordinate these needs will benefit this. Conflicting rationalities meant that numerous important issues were being addressed but in a fragmented way. This was across a broad range of issues including social, economic and climate concerns and was exacerbated by resource constraints and a lack granular data that is needed to understand local priorities. That is not to say that these issues are not being thought about and delivered on, however, complex trade-offs, and limited resources hinder Rochdale's ability to create a cohesive narrative and effectively address broader issues such as sustainability and social complex issues which all play a part in increasing the productivity, prosperity and life satisfaction for Rochdale.

The Themes

This section will elaborate on the four dominant themes raised during the interviews. Each theme has a short description including recommendations.

Theme one: Create a Unified Purpose
Capitals Interplay: Social and institutional
Recommendation: Jointly create and share a narrative on Atom Valley that has a common purpose

Despite evidence of high levels of social capital and some well connected networks across Rochdale, there were also disconnections that if not addressed, could hinder Atom Valley in becoming an inclusive asset for Rochdale (developed further in theme two). Although Atom Valley will provide high value, specialist jobs, and this is to be recognised as part of its strength, it is also important to offer career pathways at entry level and across a range of jobs. The broader benefits of how Atom Valley can benefit Rochdale do not appear to be perceived by some stakeholders at the moment, especially those working closely with residents (developed further in theme three). These stakeholders will be key in engaging the community into Atom valley. It therefore appears that further work could be carried out around the messaging of Atom Valley that communicates a single, overarching objective that brings together stakeholders towards a common direction. This in turn may help coordinate activities and engage stakeholders in shaping the decisions towards achieving a collective aim.

Theme two: Fractured networks
Capitals interplay: Social and institutional
Recommendation: Inclusive stakeholder engagement

Connectivity varies between institutions, from highly strong cohesive networks to weak, disjointed links. For Atom Valley to deliver benefits across Rochdale it is necessary for key parties to work together across different networks or domains rather than solely within their own circles. This interconnectedness and cooperation among diverse groups needs to go beyond an awareness of who is who across the region but lead to genuine and meaningful collaboration. Currently, there are high levels of social capital across the community and

across anchor institutions. However, there appears to be a disconnect, or fracture, in how they are joining up. This can be addressed by creating a unifying vision for Atom Valley and communicating a common goal for the prosperity of Rochdale. This will require greater input, buy in and the collective expertise, resources, and perspectives of multiple stakeholders from different backgrounds, sectors and communities.

Theme three: Future Oriented focus and Here and Now focus
Capitals interplay: Institutional, social, human
Recommendation: Align long terms goals with pressing priorities

Those partners that are future oriented are looking forward, seeking opportunities, and planning for what lies ahead. They are motivated by the notion of *future readiness.* Partners that demonstrate a *here and now focus* are dealing with tasks that demand immediate attention and as such are driven by urgency. Both are important, but in light of the challenges that many residents in the community experience, there can be the impression for some that projects like Atom Valley are not the most appropriate investment for Rochdale to address its most pressing needs.

This emphasises the need to show that such investments have a universal benefit. There needs to be comprehensive and meaningful engagement with stakeholders across the community who work with the people who may feel the greatest distance from it. They need to be part of the narrative and play a key connecting role between the community and Atom Valley. Their engagement with and expertise of the community should be sought to do this.

Theme four: Adaptive Mindset and Behaviour
Capitals interplay: Human, institutional, intangible
Recommendation: Encourage flexibility and new partnerships, support development and integrate data into decision making

There were many accounts across the interviews of the need for both residents and organisations to think and act differently to traditional and well-established ways of doing things. This covered a range of important issues including education and the labour market, transport and housing, health and climate concerns and changes to the economy and business-all of which have faced significant changes over recent decades.

This theme refers to the need for adaptations to be made by almost all stakeholders in how they think about issues and address them in response to changes in their environment. To do this will require some flexibility and adaptability in how people approach traditional tasks, at an individual and institutional level. It will require the need to engage with new networks (theme three) and create a binding and unifying vision (theme one). The use of current and accurate data can also be integrated to help make the case for why these changes and adaptations need to be made.

5. A broad-based investment strategy for Rochdale

To build a broad-based investment strategy for Rochdale is it important to draw on the key strengths of the local economy and highlight the successes including:

- Regeneration of the Rochdale town centre (the Riverside development) has helped it transition from a failing high street to a vibrant shopping area with a complimentary focus on improving heritage assets (the town hall) with an improved cultural offer.
- Growth in the value added for the share of tradeable sectors within the local economy, with increases in the contribution from manufacturing. Although manufacturing is the second largest employment sector in the borough it brings in the largest share of the value added and has specialist strengths compared to the UK in the manufacture of textiles, chemicals, rubber and plastic products, fabricated metal products and machinery along with engineering.
- The gap in labour productivity (per filled job) levels with leading boroughs, like Trafford, has been narrowing, with a higher growth rate in productivity recovery from the 2008 recession. GVA per hour is catching up, see Figure 1 in the Summary.

For improvements in economic outcomes, further investment in physical capital is required as it has long life times and there is need to build up a critical mass. Future planned infrastructure investments, like a tram connection through Middleton, will help with connectivity issues but better bus routes to employment sites would be more beneficial in the short run.

In targeting measures beyond GDP the social, human, intangible and institutional capitals need to align to jointly create and share a narrative on Atom Valley enterprise zone that has a common purpose. Improvements in human capital have seen the share of skilled residents grow and those with no qualifications fall. A policy drive to target more employment starts for apprentices in the higher value added manufacturing sector is needed. The planned public sector funding boost to local investment should leverage in more private sector investment in the long term.

In terms of better welfare outcomes for Rochdale citizens the strength of the social capital networks could be deployed to encourage inclusive stakeholder engagement around Atom Valley. The returns from investments (e.g. new job opportunities) need to be shared more widely within the Rochdale community to strengthen the social fabric.

For higher well-being outcomes the natural capital in Rochdale should be utilised to improve health inequalities. This could be a co-operative action between the public and third sectors working with local residents again building on strong social networks linked in to institutions (NHS and Rochdale Borough Council). The Marmot review (2020) highlighted the importance of access to green space as being key to improving life expectancy rates. It is also crucial to target preventative health measures to tackle deprivation with a greater focus on the commercial determinants of health (like restrictions to fast food outlets).

Building on the key strengths of the Rochdale economy with a collective policy focus on all these areas should help develop an enduring investment strategy to benefit all.

Appendix 1: Economic Performance

Table A1: Rochdale, Trafford, GM and the North West Economic Performance

Indicator	Year	Rochdale	Trafford	Greater Manchester	North West	GB/UK
Productivity (GVA/hour)	2022	£31.4	£39.1	£36.6	£36.8	£39.7 (UK)
Job Density	2022	0.65	1.26	0.86	0.84	0.87 (GB)
Gross Weekly Full-time (FT) Pay (resident)	2023	£645.30	£724.10	£637	£649	£682.60 (GB)
Gross Weekly FT Pay (place)	2023	£597.10	£614.60	£646	£646.30	£682.60 (GB)
Employment rate (16-64)	2023	69.9%	75.0%	71.9%	73.8%	75.8% (GB)
Inactivity (16-64 yrs)	2023	27.5%	21.4%	24.7%	23.3%	21.2% (GB)
Unemployed	2023	4.8%	3.1%	4.3%	3.8%	3.7% (GB)
Claimant Count	2023	6.0%	3.1%	5.1%	4.3%	3.8% (UK)
Businesses (Enterprises)	2023	6855	11,260	105,425	266,950	
Businesses (Local Units)	2023	7095	13,070	123,390	314,475	
GDHI (per head)	2022	£16,872	£25,802	£19,094	£19,752	£22,789 (UK)

Source: Nomis https://www.nomisweb.co.uk/ and ONS (2024e), Prod. Table A3: smoothed GVA(B) per hour. Also https://explore-local-statistics.beta.ons.gov.uk/areas/E08000005-rochdale/indicators

Table A2: Business Cycle Turning Points and Growth Rates in GDP and Productivity

	Peak	Trough	% Loss during GFC (Peak-Trough)	Annual Growth rate up to recession (2003-07)	Annual Growth rate after recession (2010-14)	Annual Growth rate up to Covid-19 (2015-19)	% Loss during CV-19 (2019-2020)	Annual Growth rate (2004-2022)
Rochdale GDP	2007	2009	-6.33	1.84	1.92	1.34	-8.84	1.12
Rochdale GDP/head	2007	2009	-7.16	1.67	1.62	0.55	-9.25	0.65
Rochdale GVA/job	2008	2009	-3.70	1.43	2.08	0.91	-7.78	1.04

Rochdale Jobs	2007	2008	-5.52	1.4	-0.65	0.59	-0.06	0.09
Rochdale GVA/hour	2008	2009	-4.98	-0.07	1.35	1.42	6.54	0.77
Rochdale Hours	2007	2008	-4.57	2.3	0.08	0.07	-13.5	0.21
Trafford GDP	2007	2009	-6.55	1.79	1.17	2.74	-4.42	1.35
Trafford GDP/head	2006	2009	-8.39	1.64	0.40	2.46	-4.34	0.80
Trafford GVA/job	2006	2009	-7.30	2.11	-1.53	1.33	-1.64	0.05
Trafford Jobs	2007	2008	-3.21	0.45	2.56	1.63	-1.72	1.30
Trafford GVA/hour	2008	2009	-10.49	3.44	-1.14	2.0	5.23	0.21
Trafford Hours	2009	2010	-0.6	-0.63	1.87	0.96	-8.13	1.15

Table A3: Rochdale Employee Sectors by Highest Location Quotients

Sector	**2015**	**2022**	**Share in 2022**	**Growth Rate 2015-2022 (%)**	**Location Quotient 2015-22 (average)**
13: Manufacture of textiles	1500	1250	1.6	-16.7	11.18
20: Manufacture of chemicals and chemical products	1000	900	1.1	-10	4.23
22: Manufacture of rubber and plastic products	1750	1250	1.6	-28.6	3.59
28: Manufacture of machinery & equipment n.e.c.	1250	1000	1.3	-20	2.45
25: Manufacture of fabricated metal products	1750	1750	2.2	0	2.28
42: Civil engineering	900	1250	1.6	38.9	2.27
52: Warehousing and support activities for transportation	3000	3500	4.5	16.7	2.15
39: Remediation activities & other waste manag. services	75	75	0.1	0	2.13
14: Manufacture of wearing apparel	75	75	0.1	0	2.11
16 : Manufacture of wood and of products of wood	300	250	1.6	-16.7	1.97
49: Land transport and transport via pipeline	2000	1500	1.9	-25	1.73
78: Employment activities	3500	5000	6.4	42.9	1.70

46: Wholesale trade, except of motor vehicles & motorcycles	4000	5000	6.4	25	1.603
17: Manufacture of paper and paper products	300	125	0.16	-58.3	1.559
61: Telecommunications	800	900	1.15	12.5	1.52
47: Retail trade, except of motor vehicles & motorcycles	7000	9000	11.5	28.6	1.25
71: Architectural and engineering activities; technical testing and analysis	600	1250	1.6	108.3	0.68
72: Scientific R&D	15	75	0.1	400	0.10
Total	70375	78435	100	11.5	

Source: Business Register Employment Survey from Nomis https://www.nomisweb.co.uk/ at the 2 digit level Standard Industrial Classification code.

Table A4: Trafford Employee Sectors by Highest Location Quotients

Sector	2015	2022	Share in 2022	Growth Rate 2015-2022 (%)	Location Quotient 2015-22 (average)
69: Legal & accounting activities	9000	35000	20.5	288.9	4.43
37: Sewerage	400	200	0.13	-50	3.2
80: Security & investigation activities	4500	2500	1.47	-44.4	2.92
20: Manufacture of chemicals and chemical products	1250	1000	0.59	-20	2.73
93: Sports activities & amusement & recreation activities	6000	6000	3.52	0	2.71
77: Rental and leasing activities	2000	2000	1.17	0	2.16
81: Services to buildings and landscape activities	5000	7000	4.1	40	1.91
46: Wholesale trade, except of motor vehicles & motorcycles	8000	10000	5.86	25	1.47
41: Construction of buildings	2250	3500	2.05	55.6	1.41
35: Electricity, gas, steam and air conditioning supply	1250	100	0.06	-92	1.39
42 : Civil engineering	1750	600	0.35	-65.7	1.38
66: Activities auxiliary to financial services and insurance activities	3000	1750	1.03	-41.7	1.35
78: Employment activities	7000	6000	3.52	-14.3	1.34
17: Manufacture of paper and paper products	350	350	0.21	0	1.25
18: Printing and reproduction of recorded media	500	350	0.21	-30	1.222

71: Architectural & engineering activities; technical testing & analysis	2500	4500	2.64	80	1.216
52: Warehousing and support activities for transportation	3000	3500	2.05	0	1.172
10: Manufacture of food products	2250	2500	1.47	11.1	1.166
Total	142700	170620	100	19.57	

Source: Business Register Employment Survey from Nomis https://www.nomisweb.co.uk/ at the 2 digit level Standard Industrial Classification code.

Experimental Data Tool Method

Stages to index creation:

1. Test the cross-correlation of the variable against Productivity (GVA per hour) and the components of the indicator for all UK local authorities (361).
2. Create index for cross-section of data.
3. Standardise the series by: (X-median)/standard deviation
4. Sum up the standardised components to create indicator (these could be weighted).
5. Rank indicator for all UK (and ITL1 regions).
6. Repeat for each capital.
7. Each capital indicator is combined to form a "capitals" indicator (see Figure A1).
8. Traffic light colours indicate if overall the indicator or capital is below the median-one standard deviation (red), within one standard deviation either side of the median (orange) or higher than the median+one standard deviation (green).
9. These indicators give a measure of the stock of the capitals in an area.
10. The flow of these capitals could then compare the movement of the indicator in the overall ranking, year to year.

Table A5: Key to variables from ONS (2024a) Cluster Analysis in Data Tool

Variable	Capital	Explanation	Year	Source
EmpRate	Human	Employment rate for 16-64-year-olds	2022	ONS
Skills	Human	Proportion of the population aged 16-64 years with level 3 or above qualifications	2021	ONS
FHLE	Human	Female healthy life expectancy	2018-2020	ONS
MHLE	Human	Male healthy life expectancy	2018-2020	ONS
CigSmokers	Human	Proportion of adults that currently smoke cigarettes (inverse)	2022	ONS
GDHIph	Financial	Gross disposable household income per head	2021	ONS
Prodphour	Financial	Gross value added per hour worked	2021	ONS

Busbn	Financial	Percentage of businesses born	2022	ONS
Busr	Financial	Rate of businesses per 10,000 people	2022	ONS
Chpov	Social	Percentage of children in relative poverty (inverse) (SC)	2022	DWP
PopR_yes	Social	Proportion of population that belongs to a religion in (SC)	2011	ONS
Anxiety	Social	Mean (Where 0 is 'not at all anxious' and 10 is 'completely anxious') (inverse)	2022/23	ONS
Happiness	Social	Mean (Where 0 is 'not at all happy' and 10 is 'completely happy')	2022/23	ONS
Life satisfaction	Social	Mean (Where 0 is 'not at all satisfied' and 10 is 'completely satisfied')	2022/23	ONS
Medhp	Physical	Median house price in local authority	2023	Land Registry
Elec_con	Physical	Domestic mean electricity consumption (kwh per meter)	2021	DESNZ
Broadb	Physical	Gigabit capable broadband coverage (percentage)	2023	Ofcom
Com_bike	Physical	Proportion of commuters travelling to work by bicycle	2011	Nomis
Com_walk	Physical	Proportion of commuters travelling to work on foot	2011	Nomis
Com_train	Physical	Proportion of commuters travelling to work by train	2011	Nomis

Source: The above indicators for capitals the local authority district level are from the ONS (2024a). The ONS (2024a) clusters are mapped in the Local Statistics, see:

https://explore-local-statistics.beta.ons.gov.uk/areas/E08000005-rochdale/indicators

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