Place-based Policies and University Knowledge Exchange: Exploring the Nexus of Place and Research Strengths

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About the UCI Expert Insights Series on University Knowledge Exchange and Regional Economic Growth

There is significant policy interest in the UK in strengthening local economies to fulfil their economic potential and address long-standing spatial disparities. Universities have a significant role to play in helping to deliver policy ambitions in this area, including through their knowledge exchange (KE) activities.

Funders of KE, including Research England, face increasing pressure to develop approaches to enable universities, through KE, to strengthen contributions to regional economic growth. However, progress is hampered by the lack of fit-for-purpose data and metrics capturing universities' potential to contribute to regional growth outcomes. For Research England – which allocates KE funding to universities through both formula-driven allocations and competitions – this constrains their ability to:

- Allocate funding to enable universities to contribute to regional growth through KE
- Track and evaluate the performance of such funding programmes
- Support learning and improvement by universities around how to deliver effective and impactful regional economic growth initiatives

To address this issue, Research England and the Policy Evidence Unit for University Commercialisation and Innovation (UCI) at the University of Cambridge, are working closely to identify and progress opportunities for better data and metrics in this area.

To guide this work, leading academics with expertise on regional economic growth, universities, and KE, were commissioned to produce a series of *Expert Insights Papers* examining where progress could be made. The papers synthesise the latest insights from research and practice, and offer thoughts on where better data and metrics could be developed to meet funder needs

The topics were shaped by a policy evidence roundtable in September 2024, which brought together national funders, policymakers, and academic and sector experts from across the UK to identify key gaps. Key topics include:

- Approaches, opportunities and challenges to fostering regional economic growth (including theoretical and empirical insights, and latest international practices).
- Opportunities and challenges for where and how universities can contribute to regional economic growth through KE.
- Types of regions or regional contexts and how these shape the role universities should play in enabling economic growth through KE.
- University KE pathways for delivering impacts on regional growth
- The types / scale of capabilities, resources and alignment needed within universities to deliver KE aimed at supporting regional growth, and the ability of universities to adapt and reconfigure to deliver.

Contents

1 Introduction

While policy expectation is growing for universities as place-based assets, it is fair to say that our understanding of the geographical dimension of knowledge exchange (KE) activities and its link to local economic growth - both strategies and outcomes - remains patchy. The alignment between regional/local context, university strategies and specific actions is difficult to analyse, let alone to coordinate. The location of the universities influences behaviours, resources, networks, culture, and competences that stimulate their innovative and entrepreneurial activities. Furthermore, the governance structure of local and regional economic development shapes KE activities between universities, industry and the local public sector actors. However, in practice, universities are seen to be difficult to integrate into a regional strategy. There appears to be a gap between strategic frameworks of regional economic growth and the actual engagement of universities in the process.

The focus of each university may differ in terms of the extent to which they pursue academic and applied research, collaborative and commercial research, or combination of those. Furthermore, the research focus and specialisms of universities vary so that each may have a particular strength or niche in some disciplines. Given the fact that universities are diverse organisations which vary in terms of their size, resources, specialisms, research capacity, and engagement capabilities, there is scope to move beyond a "one-size-fits-all" approach to a more nuanced policies that fit better with both regional and university's strengths.

Our paper sets out the nature of "university ambidexterity"- the exploration - exploitation spectrum of KE activities- against the geography of university-industry collaboration. We highlight how the university ambidexterity concept can be utilised to understand university contributions to place-based economic development. To do so, we provide an overview of evolving place-based innovation policies and sub-national governance structures of economic development in the UK over the last two decades. We review the value and need of geographical datasets focused on KE considering recent development of 'place-based' innovation and economic development policies including the *Industrial Strategy* (2017) and *The UK's Modern Industrial Strategy 2025*.

To fill some of the identified gaps in our knowledge, we assess existing datasets, in particular, the UKRI's Gateway to Research (GtR) to complement the Higher Education Statistical Agency (HESA)'s Higher Education Business and Communities Interaction (HE-BCI) survey data. We present a data-driven methodology and analysis to align the research strengths of the university with strategic policy direction of the place. We then use this analysis to propose new directions of KE metrics, namely an extension of the HEBCIS and GtR datasets to capture better contextualised research and KE activities across the country. We conclude the paper by discussing issues related to geographical data collection on university KE activities and current gaps in metrics/incentives with implications in the short, medium, and long term.

2 Review of Literature and Policy Environments

2.1 Geography of University-Industry Collaboration

The last three decades have witnessed a growing body of literature focused on the university-industry-government collaborative relationships, conceptualised as Triple Helix model (Leydesdorff and Etzkowitz, 1998). Effects of public support such as public R&D subsidies to enhance collaboration between university and industry have been analysed in different national contexts (e.g., Bonander et al., 2016; Fitjar, 2025; Hemmert et al., 2014; Luan et al., 2026). Conversely, collaborations with universities can enhance business investment in R&D projects, R&D productivity, the quality of R&D personnel, and patenting (Okamuro et al., 2025).

A number of studies has examined the complex nature of geography of R&D collaboration between university and industry (e.g., D'Este et al., 2013; Fitjar and Gjelsvik, 2018; Laursen and Salter, 2004). University-industry collaboration is often local, and some regions with strong universities manage to benefit from technological spillovers (Mansfield and Lee, 1996). A local university can be an important element for the local industrial cluster development (Čábelková et al., 2019). Nevertheless, the presence of strong technical universities and research-intensive universities itself does not lead to strong impacts on their surrounding regions (e.g. Feldman and Desrochers, 2003). Empirical evidence shows that non-local university-industry collaborations are indeed prevalent (Huggins et al., 2012; D'Este & Iammarino, 2010; Johnston and Huggins, 2018). However, the conditions under which policy should encourage these is less understood.

Most of the studies of geography of university-industry collaboration find that the higher the university's "quality", the more firms are willing to accept geographical distance, highlighting the "trade-offs" (Laursen et al., 2011) between geographical proximity and university quality (e.g. Atta-Owusu et al., 2021; D'Este and Iammarino, 2010; D'Este et al., 2013; Garcia et al., 2015; Johnston and Huggins, 2018). In addition, universities with higher levels of research grant success tend to have a greater spatial reach and work with larger firms, while more teaching focused universities have a more local focus (Huggins et al., 2012) where different types of KE activities are identified (Kelleher and Ulrichsen, 2024). According to Atta-Owusu et al. (2021), firm characteristics, in particular the firm's general strategy towards cooperation and its geography, turn out to be much more important than university characteristics in explaining the collaborative links between university and industry. Further, the impact of academic quality and geographical proximity is not homogeneous across disciplinary fields (D'Este and Iammarino, 2010). For example, in certain sectors (e.g., pharmaceutical industry), firms tend to cluster in the geographical proximity of excellent universities (Abramovsky and Simpson, 2011). A critical mass of researchers and equipment in specific industry areas may facilitate collaboration, and universities may adjust to local industry's R&D demands by specializing in relevant areas (Čábelková et al., 2019; Fitjar and Gjelsvik, 2018).

Overall, findings imply that firms weigh the "quality of knowledge production" against the "costs of transferring knowledge across geographical distance" (Fitjar and Gjelsvik, 2018, p.1526). As firms demand knowledge that is economically useful, the "quality" in this context

depends on its value to the recipient (industry) and not necessarily equal to "scientific excellence" (Fitjar and Gjelsvik, 2018). Universities' motivations and perceptions of the "quality" and "proximity" may differ from those of firms in developing the cluster R&D consortia, with different self-selection mechanisms at play (c.f. D'Este and Perkmann, 2011; Johnston et al., 2023).

2.2 University Ambidexterity

The extant literature suggests that KE is contingent on the "entrepreneurial" and "engaged" characteristics of universities (Breznitz & Feldman, 2012; Marzocchi et al., 2019; Philpott et al., 2011). Accordingly, the "entrepreneurial university" is typically proposed as an exemplar of an institution which focuses on *exploiting* knowledge, promoting economic development through the commercialisation of knowledge. This commercialisation typically focused on so called 'hard' activities such as patenting, licensing, and creating spinouts (Etzkowitz, 2003; Kirby et al., 2011; Metcalfe, 2010). On the contrary, the "engaged university" is proposed as an institution that tends to focus on 'soft' activities such as collaborative research, consultancy, and CPD (Johnston et al., 2023; Perkmann et al., 2013; Philpott et al., 2011; Sanchez-Barrioluengo & Benneworth, 2019.) In addition, the engaged university is also regarded as having a social focus, not only contributing to regional development through these activities (Breznitz & Feldman, 2012; Thomas & Pugh, 2020; Trippl et al., 2015), but also being embedded into the regional ecosystem allowing an understanding of the needs and requirements of other actors (Breznitz & Feldman, 2012; Sanchez-Barrioluengo & Benneworth, 2019).

Viewing KE activities as a dichotomy of either 'hard' or 'soft' activities overlooks any nuances or heterogeneity of universities when it comes to KE activities and strategies (Kitagawa et al., 2016; Sánchez-Barrioluengo et al., 2019; Sengupta & Ray, 2017). Indeed, many differing KE strategies and activities have been identified with respect to the research activities, teaching activities, and location (Abreu et al., 2016; Hewitt-Dundas, 2012; Huggins et al., 2012; Sánchez-Barrioluengo et al., 2019).

KE is not necessarily the exclusive domain of research focused universities as the sheer diversity of these activities means that universities may pursue these in different ways (Kitagawa et al., 2016; Sánchez-Barrioluengo et al., 2019). As indicated above, universities where research grants form a higher proportion of total revenues exhibit differing patterns and geographical ranges of KE activities from those that generate a higher proportion of revenues from teaching activities (Abreu et al., 2016; Hewitt-Dundas, 2012; Huggins et al., 2012). As such, understanding KE activities as a spectrum of activities appears to be more appropriate (Philpott et al., 2011). Given this evidence, it appears to make little sense to conceptualise the KE activities of a university in terms of an isomorphic and static ideal type.

Given this, an alternative method of understanding university engagement with KE is ambidexterity, which typically refers to the degree in which exploration and exploitation are concurrently undertaken within the organisation (Lavie & Drori, 2012). Higher levels of ambidexterity within universities suggest they are more likely to be engaged in a virtuous circle, where its embeddedness in the innovation system, as characterised by higher levels of industrial engagement, enables it to understand and react to the demands of the industrial

base and create and commercialise new knowledge (Perkmann et al., 2011, 2013, 2021). Consequently, the nature of university ambidexterity has implications for the relationship between research and KE and how each may influence one another over time (Sengupta & Rossi, 2023).

3 Aligning Strengths of Universities and Places to Drive Growth

3.1 Evolving KE Landscapes and Governance of Place-Based Economic Development– the UK Contexts

The governance structures of local and regional economic development policies have evolved substantially in England over the last two decades. Alongside, institutional and policy framing of KE activities has been also evolving. The last decade has witnessed the resurgence of "place-based" industrial policies with "existing place-based technologies, capabilities and specialisms" as well as taking advantage of new opportunities that arise (Bailey et al., 2018 p. 1525). Across the UK, partnerships between universities and industry have been developed over time, particularly within identified key regional growth sectors, yielding positive effects for university income generation (Huggins et al. 2017).[1] The **Science and Innovation Audit (SIA) 2015** was a landmark initiative launched by the UK government to map regional strengths in research and innovation and identify areas with potential for global competitive advantage. SIAs enabled local consortia—including universities, businesses, LEPs, and public sector bodies. SIAs helped city regions articulate their innovation narratives and align with new 'place-based' research funding streams from the UKRI including "**Strength in Places Fund (SIPF)**" and "**Place-based Impact Acceleration Accounts**" (Ulrichsen and O'Sullivan, 2020). SIAs were also designed to support the *Industrial Strategy 2017* by aligning local capabilities with national priorities.

The UK's *Industrial Strategy 2017 "Building a Britain Fit for the Future"* (DBEIS, 2017) was designed to promote innovation in a set of priority technologies through university–industry collaboration (Johnston et al., 2023). Following the Industrial Strategy 2017, Mayoral Combined Authorities (MCAs) such as Greater Manchester, West Midlands, and West of England, and LEPs developed **Local Industrial Strategies (LIS)** in partnership with the central government. Following the *Industrial Strategy Green Paper* (2024), in the Spending Review in June 2025, "**Local Innovation Partnerships Fund (LIPF)**" was announced, through which the UKRI would invest in local strengths to drive growth where universities are seen as key actors. ***Industrial Strategy 2025: "A Modern Industrial Strategy for a New Era"*** aligns with the broader *Invest*

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[1] There is a variety in the forms of governance of place-based economic growth policies across the UK. The devolved governments in Scotland, Wales and Northern Ireland have facilitated development of R&D and innovation strategies within devolved policy structures in which universities are expected to play a variety of roles in regional industrial growth through their KE activities and research collaboration (Huggins and Kitagawa, 2012; Kitagawa and Lightowler, 2013; Luan et al., 2026).

2035 growth mission. Through these place-based policy measures and strategies over the last decade, relationships between universities and their *places* have grown, as part of strategic policy agendas for universities, industry, communities and for governments at different levels. KE activities have been supported by different funding mechanisms. In England, since 2001, the Higher Education Innovation Fund (HEIF) have been in place, along with more recent streams of place-based UKRI funding (e.g. SIPF, LIPF). See Figure 1 for a summary of the policy evolution and the emerging devolution agenda in England.

Figure 1: Evolution of 'place-based' policies and KE environments

Recent (d)evolution of 'Place-based' Policy and KE Environments

1997 Labour gov - 2010 Coalition gov - 2015 Conservative gov - 2024 Labour gov

| 1998 Devolution; Creation of RDAs in England | 2012 Abolition of RDAs in England; Creation of LEPs | 2016 Cities & Local Gov Devolution Act | 2024 English Devolution White Paper |

GO-RDA-HEIF-HERA

MCAs

2003 - The White Paper on the Future of Higher Education

2016 Science and Innovation Audits
2017 **Industrial Strategy**
2021 Innovation Strategy
2022 Levelling Up White Paper
2023 S&T Framework

2024-5 "Invest 2035"
2025 **Industrial Strategy**

1999/2000 HEBCIS - 2001 HEIF –

2017 KEF-
2018-2021
Strength in Places Fund (SIPF)

2025 Local Innovation Partnership Fund (LIPF)

3.2 Data Sources and Existing Methodology

In the light of the above observation, the rest of this paper proposes a data-driven methodology to help analyse the strengths of universities and understand their potential contribution to local and regional development. Drawing on a previous study (see Johnston et al, 2023; 2025), in examining and exploring the nexus of place-based KE expectations and universities' research areas we use data from the Gateway to Research (GtR) (www.Gtr.ac.uk) on high-technology sectors to provide a more detailed picture of research strengths set in diverse territorial contexts.

The dataset captures details of income from research and innovation projects funded by the UK's Research Councils (UKRI) including innovation funding agency Innovate UK (IUK) at 149 UK universities between 2006/07 and 2016/17. This period was selected to not only cover a substantial period but to ensure that all projects were completed prior to the onset of the Covid 19 pandemic in March 2020 which changed the research funding landscape in the UK. While the GtR data does not capture funding from Research England and other Funding Councils in devolved nations, or research and innovation income directly funded by industry including wider activities such as CPD, facilities use, and equipment hire, it does give a fair overview of publicly funded research and innovation income across the UK's universities. The GtR data

allows a direct comparison of each university in terms of their engagement with research and innovation activities in high-technology sectors.

A unique database was constructed, identified through searching the GtR website of publicly funded research projects in high technology fields: robots; artificial intelligence; driverless cars; space and satellite technology; clean energy; healthcare; medicine; and battery technology. These sectors were chosen due to the fact they were highlighted in Government strategies as "priority areas" in the 2017 Industrial Strategy.

Data on research income was gathered as a proxy for each university's research and innovation activities overall, as well as representing strengths in each of the technology areas ,enabling to develop a finer grain analysis of which universities are relatively stronger in each of these technology areas. In total, 5,532 projects were identified, accounting for over £2.4bn of funding. The number of projects in each sector was as follows: Robots 242; Artificial Intelligence 238; Driverless Cars 20; Space and Satellite Technology 606; Clean Energy 140; Healthcare 1515; Medicine 2173; and Battery Technology 598. While we acknowledge the risk of overstating the importance of a few high value projects when compared with multiple lower value projects, the dataset provides a fair approximation of respective activities over a long period.

3.3 Analysis

We present an overview of the funding landscape for UK universities in high technology sectors between 2006 and 2018. We first present an overview of the broad sector and then present breakdowns of three of these sectors, healthcare, medicine, and space technologies, to examine differences across sectors. Given the data source, this analysis is necessarily broad in its focus providing an overview of potential contributions of universities to research and innovation in high-technology sectors. As already mentioned, the GtR dataset does not capture income from private sources, activity funded through Research England and devolved equivalents (i.e. QR funding), or income generated through CPD and use of equipment or facilities. As such, a different picture may emerge if more detailed data were available. However, given current data constraints, this analysis represents as detailed a picture of publicly funded research and innovation activities in relevant sectors as is currently possible.

Figure 2 highlights the overall pattern of UK universities in terms of their income from "collaborative research and innovation projects, i.e. those that involve a non-academic partner and income from academic research grants, i.e. those that involve academic partners only, in the high technology sectors. Three groups of universities are highlighted:
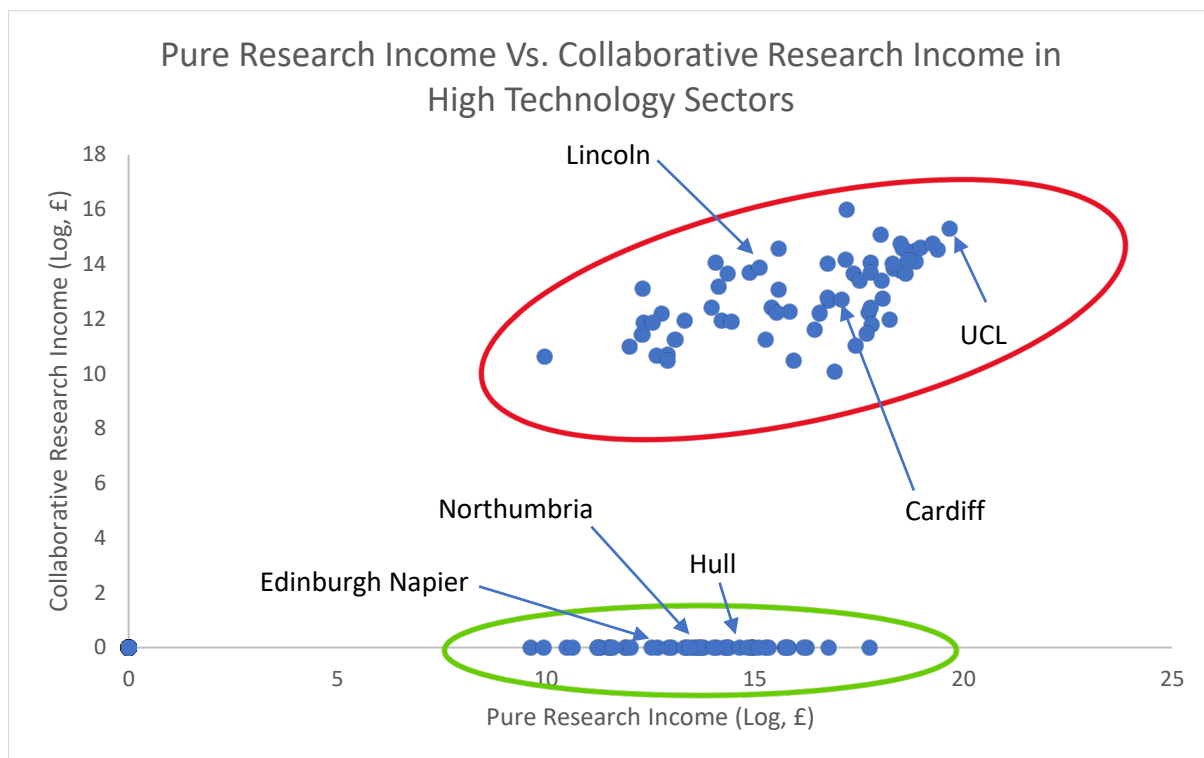
1. those universities with no income in either category (not highlighted),
2. those universities with income solely from academic research grants focused on high technology sectors (highlighted by a green circle); and
3. those universities with income from both academic research grants and collaborative research and innovation projects in high technology sectors (highlighted by a red circle).

From an economic development and innovation perspective, it is the latter two groups which are of most interest as these are the universities producing knowledge in high technology sectors which can stimulate national and regional growth. Importantly, the graph allows us to make a basic distinction between those universities which are repositories of knowledge that is more academically focused but where commercialisation was not the main aim of the projects that developed the knowledge and those universities which are engaged in projects that are explicitly focused on the commercialisation and external utilisation of their knowledge resources.

Figure 2 also highlights several examples of UK universities in each of the two categories. In terms of universities identified as focused on academic research grants the examples highlighted represent both different regions and different mission affiliations. Consequently, in a broad sense, Edinburgh Napier, Northumbria, and Hull universities are important nodes in the innovation system as they undertake academic research in high technology sectors. In addition, the universities of Lincoln, Cardiff and UCL represent more "ambidextrous" universities. Again, these universities represent different regions and mission affiliations. Therefore, the significance of this analysis is that it shows that each university has the potential to make a different contribution to the innovation system. Given this, we advocate a more nuanced approach to policy interventions that move beyond a simple, and both sectorally and spatially 'blind', reference to 'universities,' towards place-based interventions that blend both regional/national strengths and universities capabilities.

However, in order to capture these capabilities in more detail and using a broader range of subjects, a broader set of data are required. In order to illustrate the potential for this approach, Figures 3-5 break down the high technology sectors to single disciplines (i.e. Healthcare, Medicine, Space Technologies).

Figure 2: Academic Research/Collaborative Research Income in High Technology Sectors 2006-2018

Figure 2: Pure Research Income Vs. Collaborative Research Income in High Technology Sectors. X-axis: Pure Research Income (Log, £). Y-axis: Collaborative Research Income (Log, £). Labelled points: Lincoln, UCL, Cardiff, Northumbria, Hull, Edinburgh Napier.

Figure 3: Academic Research/Collaborative Research Income in Healthcare 2006-2018

Figure 3: Pure Research Income Vs. Collaborative Research Income (Healthcare). X-axis: Pure Research Income (Log, £). Y-axis: Collaborative Research Income (Log, £). Labelled points: UCL, Edinburgh Napier, Northumbria/Lincoln, Hull, Cardiff.
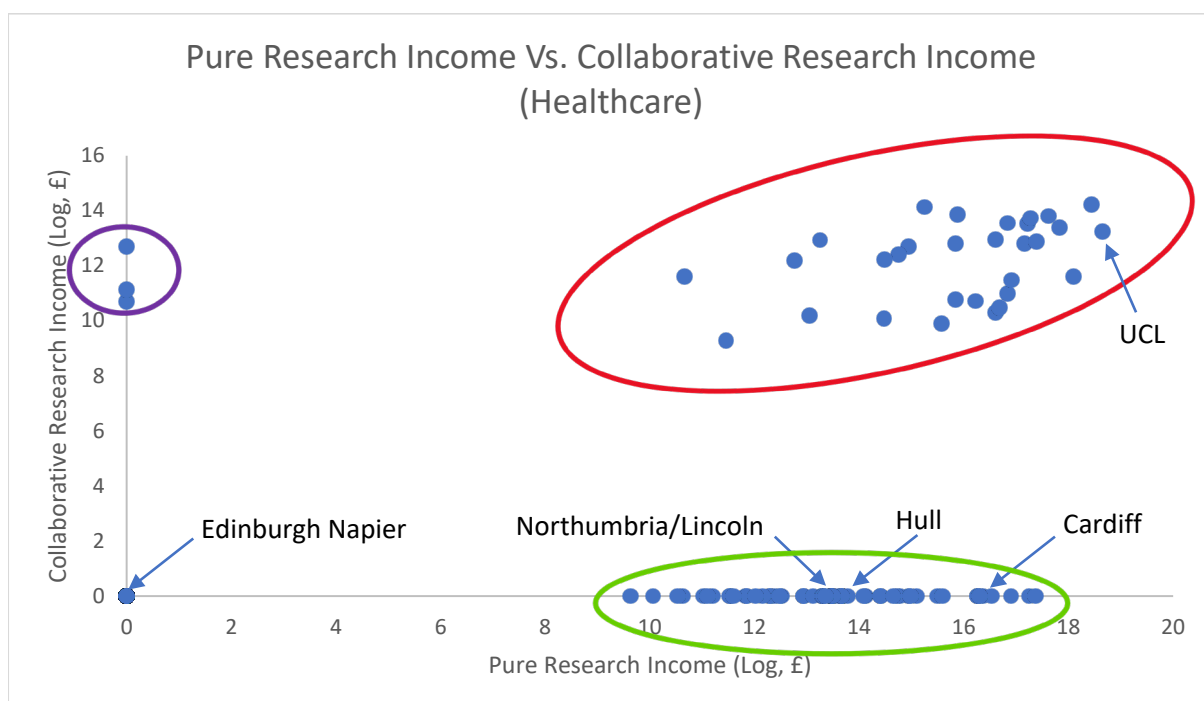
Figure 3 firstly examines research income in the discipline of **healthcare**. Again, the three main groups are highlighted. However, this narrower focus reveals the existence of a fourth group (highlighted by a purple circle), universities with income from collaborative research and

innovation projects only. Furthermore, focusing on a single discipline also reveals that universities can have an alternative profile dependent on the discipline. For example, in terms of all high technology sectors both Lincoln and Cardiff Universities were revealed as ambidextrous in Figure 2. Yet, by using a narrower focus it is clear that these universities are not ambidextrous in terms of research in healthcare. Instead, in this specific discipline during this period, their profiles are those of universities which focus on academic research grants. In addition, in terms of healthcare research Edinburgh Napier university does not register any income in this area according to GtR data[2]. Finally, for those universities that remain in the same category, there are changes in the magnitude of their research income. For example, the universities of Hull and Northumbria exhibit a fall in the level of income from academic research projects when comparing healthcare to high technology sectors overall. In contrast, UCL remains in the ambidextrous category, and it appears to have a very similar level of income from academic research grants but a lower level of income from collaborative research and innovation projects.

Figure 4: Academic Research/Collaborative Research Income in Medicine 2006-2018
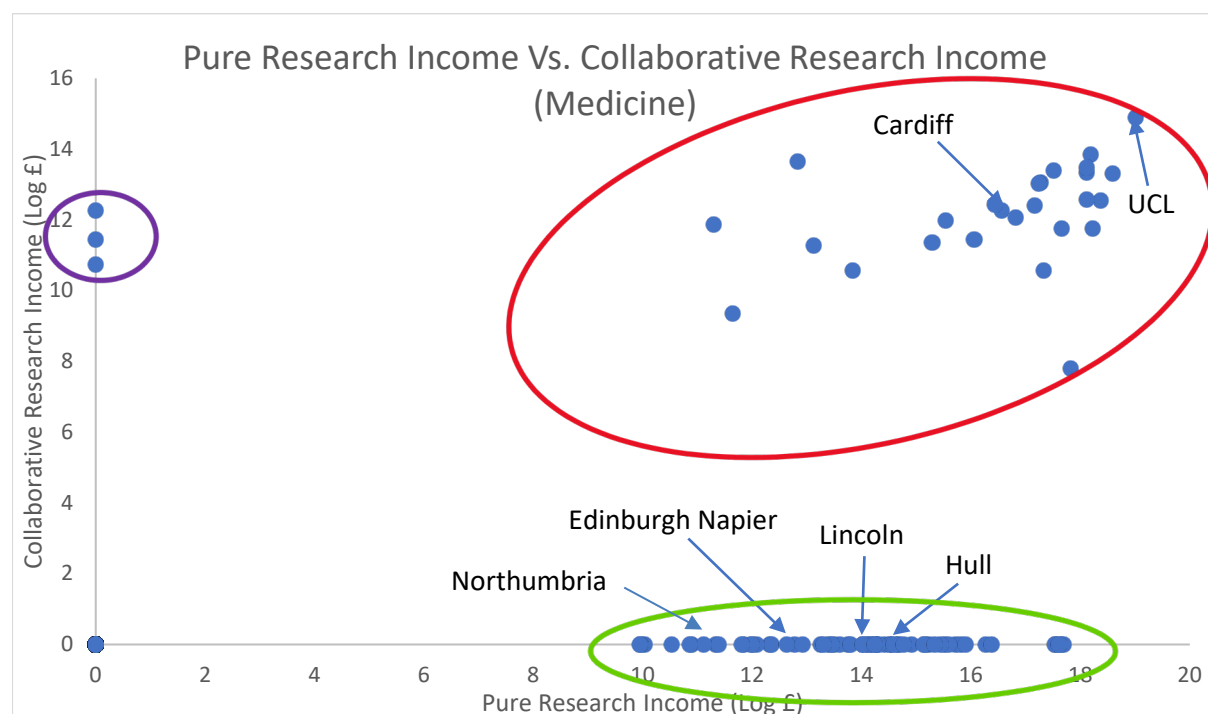

Figure 4 presents data on research in the field of **medicine** to further illustrates the picture presented in Figure 3. Again, it is apparent that universities can be classified in a different manner based on the field. For example, the graph reveals that Edinburgh Napier University is focused on academic research grants along with Northumbria, Lincoln and Hull Universities. Cardiff University can is again ambidextrous and UCL remains so.

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[2] Of course, Edinburgh Napier University may be engaging in research projects in this discipline that are not picked up in the GtR data

Figure 5: Academic Research/Collaborative Research Income in Space Technologies 2006-2018
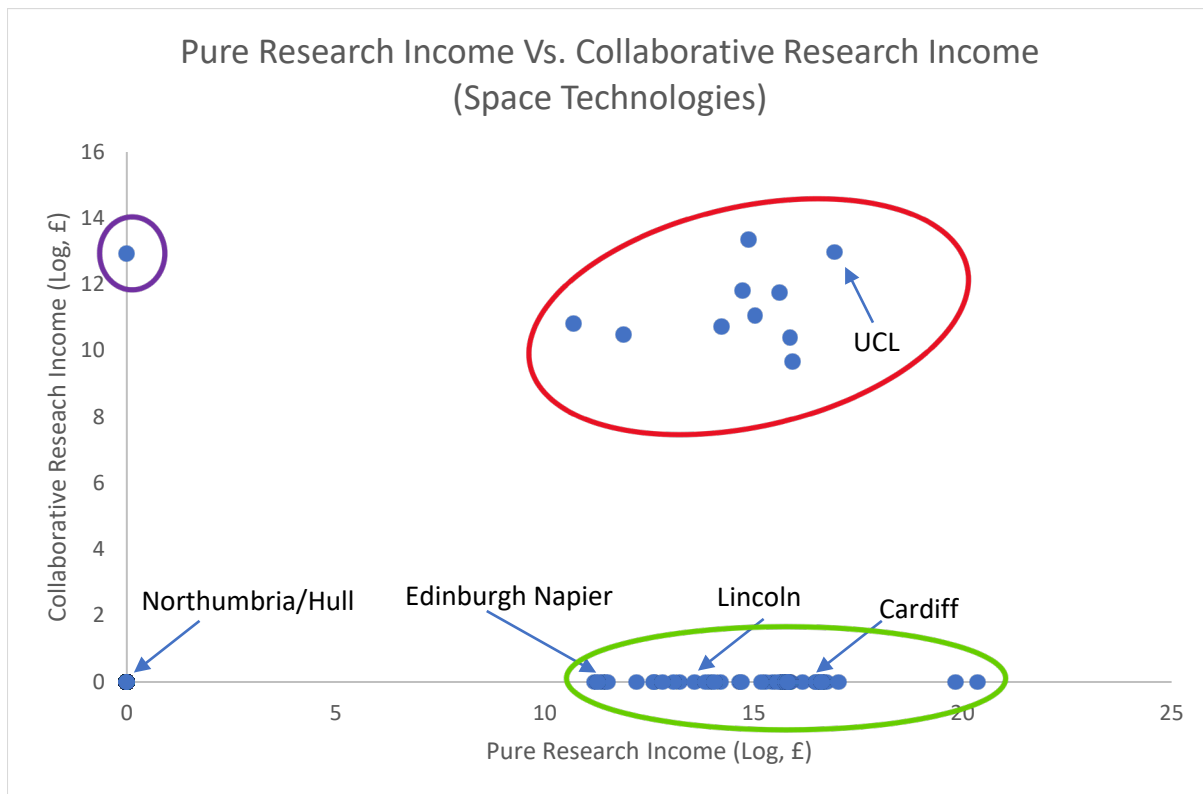
Finally, Figure 5 examines the field of **space technologies** to give some further insight into the nature of each university in this area. This time, the analysis reveals that the Northumbria and Hull universities do not register any research income in this area according to GtR data. Furthermore, Edinburgh Napier, Lincoln, and Cardiff universities are focused solely on academic research grants, leaving UCL as the only ambidextrous university in the sample. Notably, there are fewer universities that can be considered as ambidextrous in this field when compared with the medicine or healthcare domains.

Given the findings presented thus far, we suggest that university ambidexterity is clearly discipline specific. The analysis outlines the fact that universities may be ambidextrous in some disciplines and not others, which has implications for place-based policy making. In addition, from Figures 2 to 5 it is clear that ambidexterity is not binary in nature, where a university is either ambidextrous or it is not. Instead, there are degrees of ambidexterity based on overall strength, i.e. the amount of research being undertaken in a given discipline, and the extent to which the university leans towards either collaborative or academically oriented research. Importantly, this analysis highlights the picture over a significant period for clarity, but this does not suggest that these observations are static. Therefore, while university ambidexterity can vary according to field and strength, it is also feasible that this could also change over time.

Finally, it should be noted that ambidexterity is not necessarily the aim for universities; rather the analysis has highlighted a method for understanding this concept in more detail in terms of discipline and *degree of* ambidexterity. Where ambidexterity is not found, there is still scope for

universities to be contributing to economic development firstly in the impact of academic research grants but also less formal and undocumented research and innovation activities (this is discussed in more detail in the following section).

3.4 Discussion

The analysis presented above highlights several key findings and insights. From the perspective of place-based economic development, it is important to understand not only the universities that can be included in policy initiatives but also their relative strengths in terms of sectoral focus and the nature of their ambidexterity. , Ambidexterity is not necessarily a static concept, i.e. those universities that are not currently regarded as such can become more ambidextrous through broadening their academic research activities towards more collaborative undertakings. As shown in the analysis in this paper, it is important to note that the nature of field may influence the spectrum of ambidexterity. As such, understanding ambidexterity requires a more granular approach that examines individual fields. These findings have implications for measurement of KE activities. A strategic focus of KE activities on 'universities' as a unit, as is currently the case with HEBCIS data could be broadened to give a better understanding of sectoral strengths of universities. To achieve this, a better set of data to understand the fields of research and related KE activities is required.

Figure 6 illustrates conceptually ambidexterity as a spectrum, varying according to strength, with the darker areas representing stronger universities with higher levels of research income in a particular discipline, and the degree to which a university leans towards either collaborative or more academically oriented research activities.

Figure 6: University Ambidexterity Types and Strength
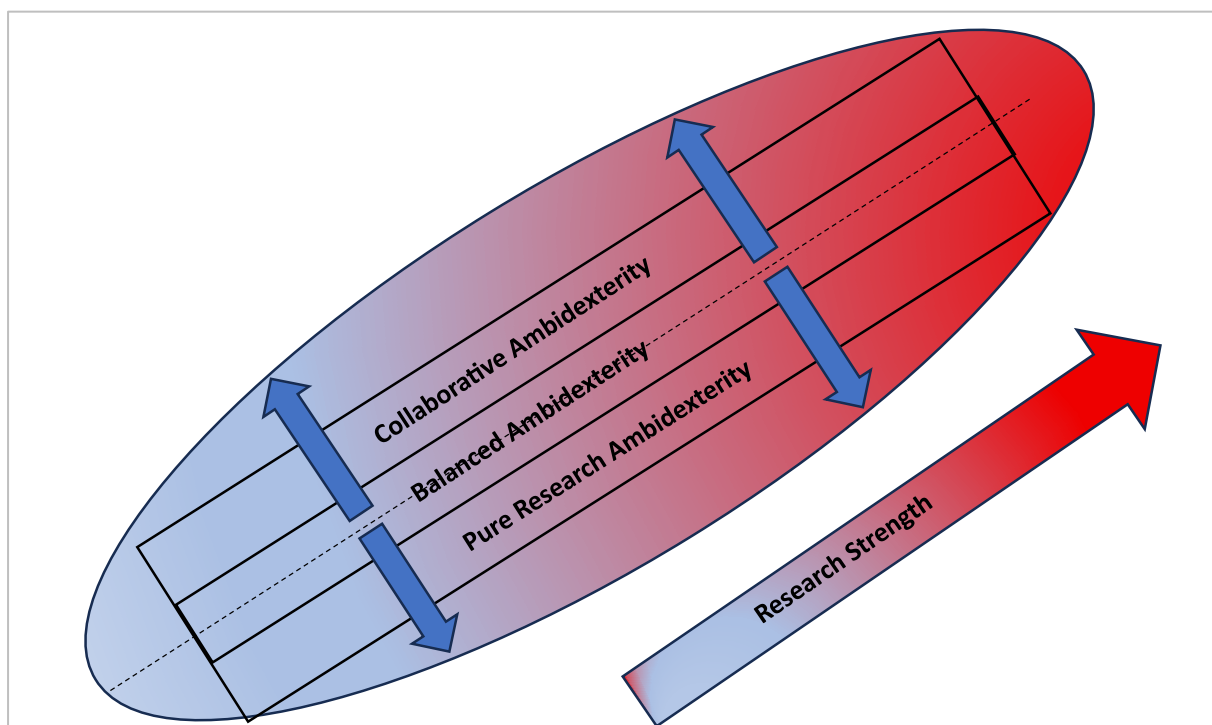
A variety of nature of university ambidexterity across different fields relates to the possible roles of universities in place-based industrial strategies and regional diversification. Universities can contribute to the local innovation-led growth pathways in a number of ways. For example, this can be summarised as an idealised set of the following four Types (Lester, 2005):

1. **Support for emerging industries** (*Type 1*), through leading science and technology development, technology transfer and licensing, promoting start-ups and spin-outs in emerging sectors etc.

2. **Importation / transplantation of industries** (*Type 2*), through skills development and retention, and technical support for local firms.

3. **Diversification of existing industries into technologically related new ones** (*Type 3*), perhaps using assets and capabilities from mature or legacy industry sectors to create an advantage in new sectors.

4. **Upgrading of existing industries** (*Type 4*), by increasing investment and skills and enhancing innovation-related capabilities to move up the value chain in current industries.

As well as university ambidexterity, in order to understand creation of place-based new pathways, it is important to examine the geographical and relational focus of research and innovation activities. As universities' academic and collaborative research, innovation and KE activities are important to place-based regional development policies and strategies, local, national and international data is pertinent to capture as part of the public data collection.[3] To better understand the geographical aspect of university-industry collaboration and KE activities, more detail of the partner organisations would be required. Indeed, as many important details of all partner organisations are captured in the existing GtR data this step is eminently achievable. Importantly, more attention would be required when dealing with multi-site firms to clearly understand where the funding is spent and identify where the collaboration occurs. In addition, while there may also be concerns around commercial confidentiality, basic details could be shared in publicly available data with more detailed data made available through secure access arrangements.

Finally, it is important to note that research income is not a direct proxy of research carried out nor knowledge created at universities. Despite this, it acts as a reasonable proxy through which the configurations of ambidexterity can be explored across different fields. Importantly, to better understand multifaceted nature of the university ambidexterity, a wider range of KE activities and metrics could be considered including "contract research" "licensing" and "spinouts" as well as CPD activities, use of facilities, and use of premises for specific strategic research fields. Right now, however, these KE metrics are available in HEBCIS at the university level only with limited geographical data.

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[3] For example, HESA Finance Data (Table 5) provides a breakdown of university research grants and contracts, including industry income separated into UK, EU, and non-EU sources. However, further geographical information on the origins of funding (e.g., country level) is not available in the public domain.

4 Conclusions and Potential New Directions

This paper contributes to discussions around addressing gaps between strategic frameworks of regional economic growth and the actual engagement of universities in the processes of research, innovation and KE activities which may drive economic growth. As the move towards place-based economic development polices has been motivated by a need to focus on the issues faced by regions and cities and develop focused approaches to tackling place-based challenges and weaknesses by building on the relative strengths of a locale (Barca et al., 2012), it is important to ensure that universities are also incorporated into these strategies in an appropriate manner. Policy makers have focused on universities as key actors within the regional economic development process given that universities are considered to be at the heart of innovation systems and play a significant role in the creation of new knowledge and its commercialisation. It is important to identify the potential contributions universities can make by seeking a better alignment of the strengths between the place and universities. In the current UK context, policies designed to support innovation, enterprise, and growth must build on *specific strengths and activities of individual universities* rather than a generic focus on 'universities' in general.

The motivation for this paper, therefore, is to better understand how different strengths of universities may be more effectively mobilised in the course of these policy initiatives. In particular, the concept of university ambidexterity is utilised to understand the nature of individual universities and their capacity and capability for contributing to place-based regional economic development. Importantly, this would enable understanding of the strategic alignment of not only the strength of each individual university, but also across multiple universities collectively with the place-based economic development policies. As such, understanding university ambidexterity allows us to identify how universities both individually and collectively may contribute to regional development strategies and activities more clearly. The LIPF would provide an opportunity for such collective exercise.

The geography of university-industry collaboration is not spatially bounded. Where the research and sectoral strengths are outside the specific region where the university is located, inter-regional connections and partnership making is needed (Growing Together Alliance, 2025). The intelligence regarding *the place-based economic development* and *strategic future* sits across different boundaries, where coordination is needed across places, sector by sector and between different public and private organisations, including universities. While businesses may not be constrained by the geographical and administrative boundaries, policy makers need to take strategic decisions based on strengths, opportunities, threats and weaknesses of a particular 'place', including university research across variety of fields. Universities collaborate with local firms, and university research attracts non-local businesses and investment from overseas. Strategic interventions must therefore consider how value can be amplified through cross-sector linkages, shared technology platforms, and complementary policy priorities across broader geographical areas.

To achieve this, a place-based policy context requires the alignment of different universities as well as innovation intermediaries and businesses across different spectrum of strategic research fields. In terms of data-driven KE analysis, our analysis shows value of existing data

drawing on the university ambidexterity concept. However, the nature of existing data and metrics has several limitations. As such, to provide analysis of a broader set of disciplines requires significant work. In addition, the GtR data presented in this paper focuses on publicly funded projects only and does not capture the wider KE metrics utilised by HEBCIS such as contract research, collaborative research, or licensing income. Therefore, to build on existing datasets, we propose the following:

- An extension of the HEBCIS data to examine activity at a discipline level, using REF Units of Assessments (UoAs) as the basis to record all KE activity across all disciplinary areas for a finer grained evaluation of university research and KE activities.
- An extension of GtR by expanding research projects beyond UKRI funded ones, including projects funded by industry and other sources to give greater detail of the nature of these projects.
- The development and deployment of indicators (e.g., university scorecards) using these sets of public data to identify university/regional specialisms in research and KE activities to better align potential contributions to place-based policy initiatives (e.g. HEIF, LIPF).

While extending the scope of the current HEBCI survey may increase the administrative burden of data collection, the additional data represents information that should be collected in the course of the contracting process. As such, we do not envisage this to be a large obstacle. However, we recognise that capturing the contributions of universities through activities funded by Research England will need to be carefully implemented to avoid placing a higher administrative burden on universities.

In order to understand how university research and KE activities may successfully contribute to local economic development and regional path creation, we would need a granular level of geographical data and analysis. There may be challenges in capturing local level systematic datasets as well as connections within and across regions given the evolving governance structure and nature of the complex administrative boundaries with an ongoing devolution in England. The local level spatial economic analysis, e.g. local firm level data and distribution of graduates in strategic industrial sectors, could be combined with university level research and KE data. [4] Such micro-level datasets would help an assessment of where local universities could contribute to future opportunities for the region and where knowledge, skills and expertise from outside the local area may be required.

The conceptual and methodological approaches presented in this paper suggest further analytical potentials to capture a variety of KE activities across different universities through local and regional path creation. The proposed approaches to KE metrics would help address evolving place-based policy needs and assist evaluation of policies in the local context. In summary, place-based innovation policy and KE metrics could be directed towards understanding the nature of universities and their specific research strengths within the

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[4] See, for example, WMCA (2025) "West Midlands Futures – Exploring Emerging and Future Opportunities in the West Midlands Combined Authority Region". The analysis draws on location quotients of businesses (e.g. Data City platform) and distribution of talent emerging from local universities (HESA graduation data) across different industrial areas in the WMCA region.

evolving industrial dynamics of local innovation ecosystem. For the mid to long term, discussions on appropriate incentive mechanisms required to facilitate this would be deemed to be important.

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