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Mundane innovation in the periphery: the Foundational Economy in a less developed region

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Abstract

This article explores the role that foundational economy (FE) actors can play in innovation in peripheral regions. We argue that research which casts peripheral regions as backwaters of innovation may inadvertently underplay the potential for innovation in such places. Drawing on the peripheral innovation literature, and emerging research on the FE, we develop the concept of mundane innovation and explore its potential for peripheral regions. We address this question through a short case-study of Carmarthenshire (Wales) and find that it may offer potential for such regions to become leaders rather than the laggards they appear in the conventional innovation literature.

Keywords

Peripheral areas, foundational economy, mundane innovation, binaries

1. Introduction

The idea of ‘innovating in the periphery’ is no longer perceived as an oxymoron. This topic has generated a growing literature seeking to challenge the implicit assumption of previous

regional innovation research that has cast peripheral areas as innovation backwaters, lacking important attributes such as innovative firms, research and development (R&D) activity, innovation skills, networks and proximity (Eder 2018). Recent research, however, has found that such regions are not always less innovative than their urban counterparts (Fritsch & Wyrwich 2021). Instead, it has been argued that much innovation in peripheral regions is overlooked, taking place in different stages of the innovation process, drawing on the social, cultural and environmental resources associated with such areas (Shearmur 2015); and, in certain cases, peripherality can even be an asset rather than a liability in enabling such areas to innovate based on their intrinsic assets and creativity (Grabher 2018; Pugh & Dubois 2021).

Despite these insights, the regional innovation literature still presents a somewhat binary picture, with peripheral areas cast as innovation laggards when compared to their urban counterparts. While there are good reasons for this picture (peripheries lack many of the features typically associated with innovative cities, such as access to markets, sources of knowledge, and density of actors) the emerging concept of *foundational economy* (FE), defined as the mundane but essential services that are collectively consumed within regions (Foundational Economy Collective 2022; Hansen 2021; Morgan 2019), may provide a way of exploring these similarities and differences and reappraise the potential for innovation in the periphery. The FE's potential role in regional development challenges and crises has, however, recently been questioned relative to the importance of the traded sector (Martynovich et al. 2023), suggesting that there is a need to further explore not only the potential, but also the mechanisms the FE actors such as those involved in healthcare and public food provision may be able to adopt to support innovation in peripheral regions.

The purpose of this article is to explore the role that FE actors may be able to play in innovation in peripheral areas such as remote and rural regions, as well as less developed places generally (Pugh & Dubois 2021). In doing so we develop the concept of mundane innovation, defined as innovation in the mundane goods and service provision of the foundational economy, and explore the role it can play in peripheral regions. We draw on a case-study of novel approaches to mundane innovation taking place in the FE in Carmarthenshire, a less developed peripheral county of Wales (itself a less developed country). Drawing on evidence from two short cases – *food* and *health and wellbeing* – our

findings (i) highlight the role of the FE as key actors in peripheral regions capable of innovating to address place-based challenges, alongside a wider cast of multilevel actors (ii) demonstrate that mundane innovation can incorporate both science and technology innovation, but also social innovation, and (iii) conceptualise the mechanisms by which FE actors can develop mundane innovation to address local needs and societal challenges. Based on these findings we argue that FE actors may be able to play a central role in a regional innovation strategy in less developed areas, where the private sector is comparatively weak. Moreover, an FE lens could help scholars and policymakers to appreciate more diverse sources of innovation, where less developed regions may paradoxically be leaders rather than laggards. Indeed, an FE lens may provide further nuance to the ongoing, firm-based discussions surrounding the characteristics and distinctiveness of urban and peripheral innovation.

2. Literature review

Innovation in the periphery

Innovation is principally conceptualised as an urban phenomenon, supported by spatial interactions, institutions, proximity and access to knowledge and cultural resources (Florida et al. 2017; Shearmur 2012, 2017). This perspective views innovation activity beyond the city as a residual category (Glückler et al. 2023). Others, however, have been more forthright, characterising the city as an 'innovation machine' (Florida et al. 2017), in which spatial concentration of economic activities and knowledge provides opportunities for the spillovers and local interactions that are considered important to regional innovation (Feldman & Kogler 2010). Urban areas therefore represent the 'key social and economic organizing units for these processes' (Florida et al. 2017, p. 88). Yet, in presenting peripheral areas as being outside of these dynamics, this literature tends to propagate a negative conception of innovation in non-metropolitan areas, devaluing their potential for development (Pugh & Dubois 2021). It has also tended to underplay the diverse nature of peripheralities, such as rural, sparsely populated and other forms of less-developed regions and places (Pugh & Dubois 2021), as well as the potential for peripheries within urban areas

(Phelps et al. 2022), and inequalities to emerge in 'left behind places' (MacKinnon et al. 2022; Rodríguez-Pose 2018).

Research has begun to challenge the unwarranted urban bias of regional innovation studies, arguing that it results from a narrowly framed science and technology-based view of innovation (Shearmur 2015). This forms part of a wider reappraisal of innovation types that has highlighted more democratic forms of innovation based around stronger recognition of the role of users (Elstub & Escobar 2019) and inclusivity (Lee 2023) in innovation processes and outcomes. Elsewhere the concept of 'common innovation' emphasises the potential for innovation to address basic social and ecological challenges. This, however, views citizens as both users and innovators, 'quite outside the domain of business, the professions or government' (Swann 2014, p. 3). Notions of frugal innovation also draw attention to alternative forms of innovation, undertaken in resource constrained settings such as those in emerging economies (Hossain 2018). This emphasises its potential to develop social and ecological solutions to localised, bottom-up needs in places, and has particular resonance with the challenges faced in poorer places such as the global South (Sheikh et al. 2023). In the peripheral literature a similar reappraisal of the dominant form of innovation has emphasised that it most often takes the form of 'social innovation (to encourage local linkage and collective learning cultures) and cultural innovation (to improve the rural milieu)' (Dargan & Shucksmith 2008, p. 285). This reframing of innovation in the peripheral regions literature further illustrates the importance of place in innovation processes and the challenge of ensuring that it is brought to bear on regions that have not been considered as innovative spaces by either firms or policy makers.

As part of this reappraisal of the development potential of peripheral areas, researchers have highlighted the differing nature of innovation in such places. Here scholars have shown that innovations have both emerged from and addressed particular rural challenges (and those of other areas), for example GPS emerged from innovation in rural Canada (Mahroum et al. 2007) and the concept of the National Health Service was based on the Tredegar Workmen's Medical Aid Society in South Wales (Thompson 2013). Innovation in the periphery may draw on firms' own internal capabilities, but may also require access to personal networks (Bathelt et al. 2004) and global pipelines of knowledge (Fitjar & Rodríguez-Pose 2011) through both digital technologies and short, but repeated visits

(Brydges & Hrac 2019; Bürgin et al. 2022). Such access routes to knowledge suggest that firms in peripheral areas can draw on both local and global sources of innovation, but that trade-offs may exist between different strategies, for example the cost of mobility and the quality of knowledge exchange (Brydges & Hrac 2019).

While much of the innovation in the periphery literature has focused on sources of knowledge and innovation processes, a related strand of work has highlighted the remote properties of the periphery as a shield for creativity and economic pressures (Mayer 2020). That is, innovation away from the norms of the dominant core may allow for novelty to emerge without the fear of competitors copying and extracting value (Grabher 2018). The remoteness afforded by the periphery can also allow new ideas to be explored in a 'slow' manner based on internal resources and access to knowledge that does not decay rapidly over time, with less reliance on market forms of information and contacts (Shearmur 2015; Shearmur & Doloreux 2016). Rather than this being a barrier to innovation in the periphery, firms may be able to innovate through sensitive forms of knowledge, with innovations emerging over a longer period of time (Mayer 2020). Furthermore, while interactions within and outside peripheral areas may be important to some forms of innovation activity, in others lower population densities may paradoxically create more frequent interactions, including 'non-workplace interactions across formal and social boundaries...[such as] shops, schools, sports clubs and other social venues' (Meili & Shearmur 2019, p. 508). In this respect, the literature suggests that the nature of innovation may vary both within different types of peripheries, but also in relation to urban areas.

Although much is known about the strategies for accessing knowledge to drive innovation in the periphery, challenges remain. Indeed, negative views of the potential for innovation in the periphery persist in much research in this area (Eder & Tripp 2019; Pugh & Dubois 2021). Amongst the challenges highlighted are factors such as distance from sources of knowledge, partners and markets, institutional fragmentation and weakness of local universities (Charles 2016; Fritsch & Wyrwich 2021). The deficiencies of digital infrastructure and skills in peripheral areas have also been noted, with limitations in access and use of such technologies acting as a further barrier to the innovation potential of peripheral areas (Cowie et al. 2020). Funding for innovative activities in the periphery may also be limited by the lack of dynamic firms and finance sources present in leading regions and cities. These

constraints can stymie both the development of new innovation and its scaling (Da Rosa Pires et al. 2014).

While the challenges of innovation in the periphery have been examined in a growing range of settings, the literature largely presents a binary picture of such processes and their potential policy implications for such regions. That is the innovation processes and patterns in peripheral and urban areas are viewed as distinct. Recent evidence, however, suggests that there may be little difference between rates of innovation in urban, rural and peripheral areas (Fritsch & Wyrwich 2021). Such findings imply that the compensation strategies proposed by many authors, may not fully explain the sources and nature of innovation in the periphery. Other strands of the innovation literature, however, point to the potential for a much wider cast of less fashionable actors such as FE goods and service providers to engage in innovation (Coenen & Morgan 2020; Shearmur & Poirier 2016). Exploring the role of FE actors may therefore help to cast new light on the nature of peripheral innovation, moving past the binary nature of many studies and offering a wider lens through which to recognise and understand the innovation potential of the periphery.

Foundational economy and innovation in the periphery

The concept of the FE represents a radical new model for regional development (Coenen et al. 2021; Hansen 2021; Heslop et al. 2019; Morgan 2019). In contrast to traditional conceptions of regional economic development, the FE represents those parts of the economy that provide mundane, yet important goods and services consumed irrespective of health, wealth or location, including health, care, education, housing, utilities and food supply (Foundational Economy Collective 2022). This presents a place-based agenda for regional development that positions it in direct contrast with policy prescriptions that emphasise factors such as competitiveness. By focusing on the foundational needs of citizens and the services that form part of a civilised life in all places, the FE highlights its centrality to goods and services in the local economy (Russell et al. 2022). Two forms of FE provision have been identified in the literature – *material* goods and services such as the pipes, cables and networks that deliver essential services such as gas, electricity, water, internet, and *providential* services comprising health and social care, education and so on (Foundational Economy Collective 2022). Such goods and services are delivered by public

actors such as municipalities, private sector firms and third sectors such as charities (often on behalf of the public sector) (De Boeck et al. 2019).

Adopting an FE perspective alerts us to the importance of wellbeing and the role of mundane goods and service providers in sustaining people and communities alike. This identifies the role for such services in helping to ‘meet basic human needs and nourish human capabilities, services that are delivered as part of collective consumption rather than individuated through market income’ (Morgan 2022, p. 91). In doing so the FE perspective on wellbeing is defined in contrast to traditional goals of economic growth which have dominated the characterisation of value in debates about the role of economies. Indeed, while the relative merit of wellbeing and growth are debated by FE theorists (Calafati et al. 2019), the FE perspective points to the importance of values, challenging conventional assumptions about society and nurturing wellbeing. It may also have an important role to play in regional responses to the ‘double crisis’ of social and ecological challenges (Bärnthaler et al. 2021), which have tended to be divorced from mainstream economic growth models (Donald & Gray 2019).

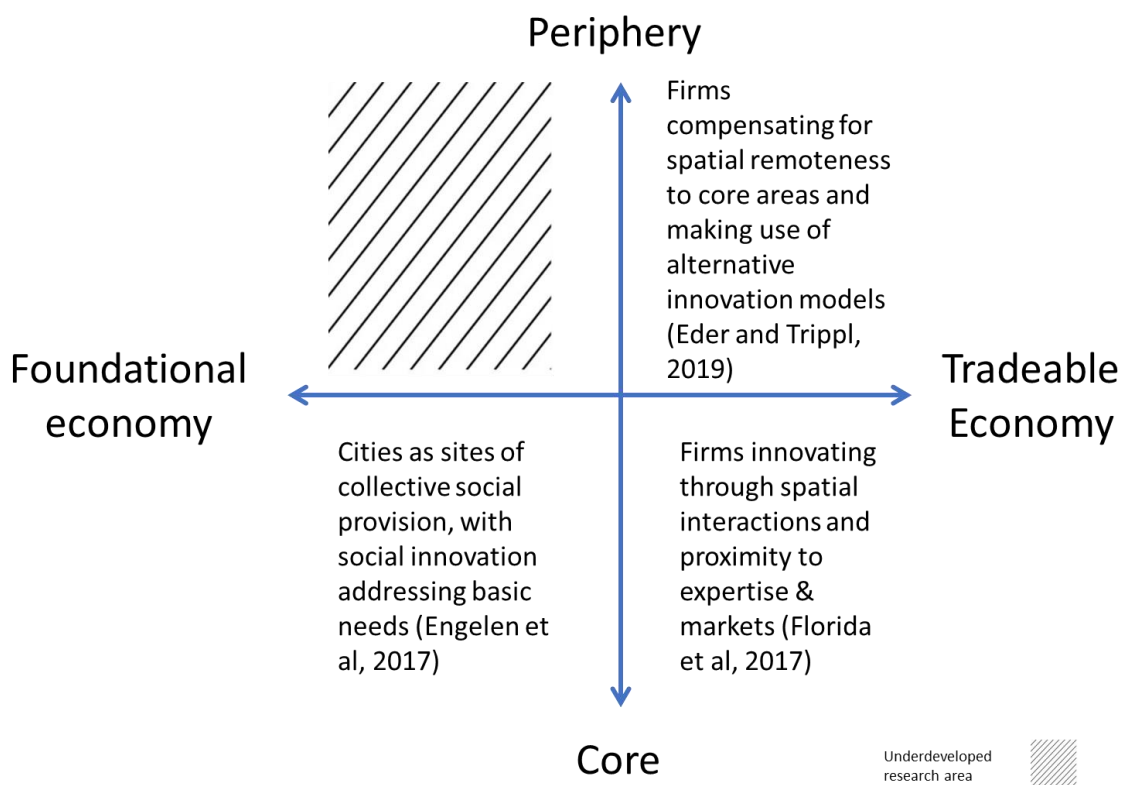
The regional level is said to be particularly significant as it is the locus where the FE goods and services are delivered and consumed (Bentham et al. 2013). While the universality of such goods and services may support local and regional economies in all regions, they could offer particular opportunities to support less developed regions, characterised by a weak private sector (Heslop et al. 2019; MacKinnon et al. 2021; Morgan 2019). In such regions, FE activity and employment may comprise a comparatively more important part of a regional economy (Engelen et al. 2017; Heslop et al. 2019). They also control, bid for and receive funding from other multilevel sources of government, and have public procurement budgets, both of which have been highlighted as having a potential role in supporting strategic agendas such as innovation (Foundational Economy Collective 2022; Morgan 2019; Uyarra et al. 2020).

The role of innovation and its contribution to regional development has, however, been largely overlooked in the emerging literature on the FE (Morgan 2019). Hansen (2021, p. 1035) suggests that while the sector has historically produced innovation in public services, the FE perspective largely treats it as ‘depend[ent] on innovations developed in other parts of the economy’. Shearmur & Poirier (2016) further argue that the scant attention paid to

everyday technical and service innovation in FE goods and services both devalues the role of locally based public sector agents and misses the point that this form of innovation cannot be reduced to the market-driven pressures or the profit motive that characterises innovation in the private sector. The description of FE goods and services as ‘mundane’, however, hints at a potentially limited role in innovation. Cities, however, have been identified as providing the basis for social innovations to emerge, drawing on their concentration of citizens (Engelen et al. 2017). Indeed, others have suggested that social innovation may be particularly relevant to the FE sectors ‘in terms of involving a wider range of individuals in societal change and in terms of thinking about needs and wellbeing, rather than merely on economic outputs’ (Marques et al. 2017, p. 507). A social innovation perspective emphasises that innovation may take the forms including new product, process, or organisational change ‘born as a response to social or environmental need, is open to engaging variety of actors, and is social not only in its purposes, but also in the way it is delivered’ (OECD 2021, p. 10). Yet while social innovation in the FE has been highlighted in the literature, for the most part FE goods and service providers have been defined as an innovation user, ‘integrat[ing] new technology into social activities’ (Foundational Economy Collective 2022, p. 31). Additionally, the focus on low-cost innovation in less developing places in frugal innovation draws attention to the cost and place of innovation. These represent concepts that intersect with mundane innovation, but our argument is that mundane innovation is a capacious concept in which FE actors may harness the potential for social as well as novel science and technological forms of innovation (e.g. in product, process and organisational forms) to address place-based societal challenges.

The overall perspective of the regional innovation literature is one in which the dynamic core regions and tradeable services (provided by firms) dominate the research agenda in regional innovation research. In this respect peripheral areas and FE goods and services provision has received comparatively limited attention (Hansen 2021), indeed this binary perspective between firms and FE goods and services adds to that of the peripheral and core urban dichotomy noted earlier, as summarised in Figure 1.

Figure 1. The dual binary problem in studies of innovation in the periphery



While these perspectives on innovation in the periphery and the role of actors contain an element of truth (the firm is at the forefront of many major innovations which can often be found in urban regions) (Florida et al. 2017), they are also problematic in that they hide the nuance and complexity surrounding innovation in the periphery and core areas (Hansen 2021). There is emerging evidence, however, that such binaries are beginning to break down, not least in the reappraisal of the level of innovation in peripheral firms (Fritsch & Wyrwich 2021), and growing focus on concepts such as social innovation (Coenen & Morgan 2020; Morgan 2019). These development suggest that peripheral actors may need to adopt different ways of framing of these policies when seeking funding support (Edler & James

2015), relying less on science and technology and commercialisation and more on its place-based character and problems (Flanagan et al. 2022). We seek to contribute to this research by challenging the binaries of innovation in the periphery research and addressing the underdeveloped research area of the FE and its role in innovation in the periphery. Here we ask how might FE actors provide a source of innovation activity aimed at novel social and technological innovations aimed at addressing social challenges in peripheral regions? What form might FE innovation take in the periphery? And what mechanisms might FE harness to innovate in their services in the periphery? In doing so we seek to shed light on the foundational economy actors that may have an important role to play as catalysts of innovation in less developed regions.

3. Research case and method

In this article we draw on evidence from Carmarthenshire, a rural county in South West Wales. Here we follow calls for researchers to specify the type of periphery that they are researching (Nilsen et al. 2022; Pugh & Dubois 2021). Carmarthenshire's status as a rural periphery is reflected in some 61% of its population living in a rural area. The county exceeds Welsh averages for employment in sectors such as agri-food and tourism (StatsWales 2022), but has the lowest level of GVA in Wales, and is far below the UK averages (National Statistics 2020). Given Wales' position as one of the UK's less developed regions, this situates Carmarthenshire as a periphery of a periphery. The county does, however, have Wales' major southern road artery running across its southern coastal boundary, providing good road connectivity to other urban centres of South Wales and England. The justification for selecting this case is not only that Carmarthenshire is a peripheral area through its relative remoteness and rurality, but it is also one in which the FE represents one of the area's strongest sectors, with sectors such as water and sewerage, construction, health and social care, education, and public administration, accounting for 42% of total jobs in the area (2021)¹.

¹ Based on the authors' calculation - SIC categories E,F,O,P and Q (Nomis - Official Labour Market Statistics 2021).

The article employs a case-study approach, seeking to explore the potential role of mundane innovation in FE sectors in peripheral areas through inductive reasoning. Such methods are well established in regional studies and have been employed in recent research on innovation in the periphery (e.g. Eder & Trippel 2019). In the case research we draw on documentary analysis of annual reports, strategy documents and web resources produced by both local and national level actors. Interviews with 21 stakeholders in Carmarthenshire over the period June to December 2021, were also undertaken including participation in several 'round tables' with FE and other business groups (See Supplementary information). This activity formed part of a study undertaken by the authors, in support of a new innovation strategy for the county (Morgan et al. 2022) and provided the authors with access to both interviewees and documentation. Such an insider approach has recently been used to good effect in studies of regional policy processes (Larrea & Estensoro 2021), and more widely has been found to be particularly relevant for researching 'local subjects and concerns and ground-up processes' (Pain 2007, p. 2807).

4. Foundational cases

The case findings are presented in the form of short case-studies that examine innovation activities in two FE service areas in Carmarthenshire, namely health and food. Each of these represents sectors where Carmarthenshire County Council (the Council), the local health board (Hywel Dda University Health Board²) and other place-based actors have been active in seeking to innovate both during and before the study period. In each case we focus on the case challenges, the innovation activities introduced in response and the role of FE actors and the factors they are able to harness in support of such activities.

Health and wellbeing

Carmarthenshire, like other parts of Wales, is facing the twin challenge of long term health problems (associated with an ageing population, presence of long-term chronic illnesses and mental health problems) reflected in Welsh Government's policy priorities to create a

² <https://hduhb.nhs.wales/>

healthier Wales (Welsh Government 2019b). The local health board – Hywel Dda University Health Board - has sought to respond to these challenges through innovation to improve the delivery efficiency of its services and its health outcomes. Health and social care represent the largest employment sector in the County, accounting for 21% of all jobs (14,000 jobs) (Nomis - Official Labour Market Statistics 2021). This is reflected in the sector's presence across the county, and its focus on services delivered locally to all citizens. Key employers in the sector are the local health board (responsible for healthcare) and the Council (social care). These partners have worked individually and collectively to develop new, more integrated models of delivering health and social care to overcome the crisis-ridden structure in the UK, where health and social care are treated as separate sectors:

*Pentre Awel*³ represents an example of this new approach based on the Health Board's knowledge of the specific needs of its dispersed population. It is an 83-acre health and wellbeing village under development in the county, in close proximity to one of its most deprived communities (South Llanelli⁴). With (part) funding from the Swansea Bay City Deal (Hywel Dda University Health Board 2021), the development intends to provide facilities to support community health and wellbeing (assisted living, gym, hydrotherapy pool, health and social care services and skills development) located alongside clinical R&D and innovation activities for business, with a focus on the evaluation of medical technologies and community trials. It represents a social innovation, first and foremost, as it seeks to provide a novel solution to addressing the healthcare of the local population based on a novel place-based organisational innovation for delivering support for health and wellbeing, innovation and skills development, contrasting with traditional centralised hospital provision in the County. To this end, Pentre Awel aims to harness community focused health and wellbeing to improve health outcomes and bring innovative solutions to bear on the wider determinants of health such as education, employment, housing, access to services and community cohesion. In developing Pentre Awel, the Council recognised the importance of collaborative working with partners (such as the health board, the Council and Cardiff University) and amplifying its reach through hub and spoke arrangements with

³ <https://www.carmarthenshire.gov.wales/home/business/development-and-investment/pentre-awel/> (accessed 23rd May 2023)

⁴ <https://www.ons.gov.uk/census/maps/choropleth/population/household-deprivation/hh-deprivation/household-is-not-deprived-in-any-dimension?oa=W00010673> (accessed 23rd May 2023)

partners and healthcare facilities across Carmarthenshire. This includes support for science and technological forms of innovation through the Health Board's technology development arm – Trittech – which plans to locate activities for health-related support for innovation in medical device firms in Pentre Awel, where more flexible and responsive trailing could be possible. Such services have the potential for several benefits, offering opportunities for innovations to be tested in a comparatively deprived local community and a focus on preventative support for citizens' health and wellbeing. While innovation services such as those intended for Pentre Awel contain elements that reflect traditional forms of science and technology innovation, such as R&D support for medical device firms, their wider focus in bringing social innovation to bear on foundational services highlights their potential to address the everyday health and wellbeing needs of citizens in a rural county with widely dispersed settlements.

The development of Pentre Awel has not been without challenges. As a peripheral area it needed to partner with distributed public and private actors across the county and wider region to provide services, and to ensure the reach of its services throughout its more remote communities. In making the case for this novel organisational innovation in a comparatively peripheral area, the partners have framed Pentre Awel as addressing multiple public priorities (health, wellbeing, deprived communities and innovation) alongside an equally innovative approach to its procurement. To this end the Council has adjusted its procurement guidelines for the price - quality ratio of tenders, to allow for the inclusion of community benefits in the Pentre Awel procurement. This demonstrates how procurement - the power of purchase - can be a vehicle to support multiple forms of value generation through an innovative approach to health and wellbeing and community benefits. A consistent challenge faced by Pentre Awel has been the need to secure financial inputs from within the county and wider city-region to support the development of the site. Here the partners have had to be agile to respond to funding opportunities from multilevel partners, including the health board, local authority and wider city-deal, securing over £70 million in public investment for its initial activities⁵. The ongoing delivery of its services has also required the addition of further income generation possibilities through the introduction of

⁵ <https://newsroom.carmarthenshire.gov.wales/2022/03/exciting-update-on-transformational-pentre-awel-scheme/#.ZAmt7nbLeUk>

a hotel and private housing, but also a strong focus on commercialising innovations. The Pentre Awel project has been extolled by the Future Generations Commissioner for Wales in a national review of how public bodies are using the new Well-being of Future Generations goals to inform their local procurement strategies (Future Generations Commissioner for Wales 2021). In addition to its health and wellbeing benefits, it is anticipated that Pentre Awel will contribute an additional £467 million to the Swansea Bay City Region over the next fifteen years, plus 1,853 net additional jobs (Swansea Bay City Deal, 2021), suggesting the potential for mundane innovation in the FE to produce both social outcomes (and potential spin-off commercial benefits) in peripheral regions.

Local foodscapes

As a foundational sector, food has the potential to contribute to a number of important societal challenges that Carmarthenshire faces along with other FE actors, from producing healthier products (such as horticulture) to promoting consumption patterns that are more conducive to the health and wellbeing of local citizens (Morley & Morgan 2021). The food sector, however, is facing its own sectoral challenges – generic threats such as climate change as well as more granular challenges like the fragmentation of its small supplier base and the disconnect between what it supplies (meat and dairy) and what is increasingly in demand (fruit and vegetables). Dairy producers in Carmarthenshire account for 28% of the all Wales total (Carmarthenshire Rural Affairs Task Group 2019), with the sector strongly associated with high CO₂ emissions (Foundational Economy Research 2021). Furthermore, historically much of the public sector’s food procurement budget has tended to leave Wales (CCC 2019; Wright & Cook 2021).

In responding to these challenges the county and its public sector partners sought to draw on the Welsh Government’s increasing prioritisation of the foundational economy (Welsh Government 2023). This included securing one of the first projects to be announced under the Welsh Government’s Foundational Economy Challenge Fund, drawing on their local knowledge of the nature of the area’s challenges by developing a more innovative approach to the county’s £5 million procurement budget, with the aim of tapping more social and community benefits (Welsh Government 2019a). In contrast to previous individualised

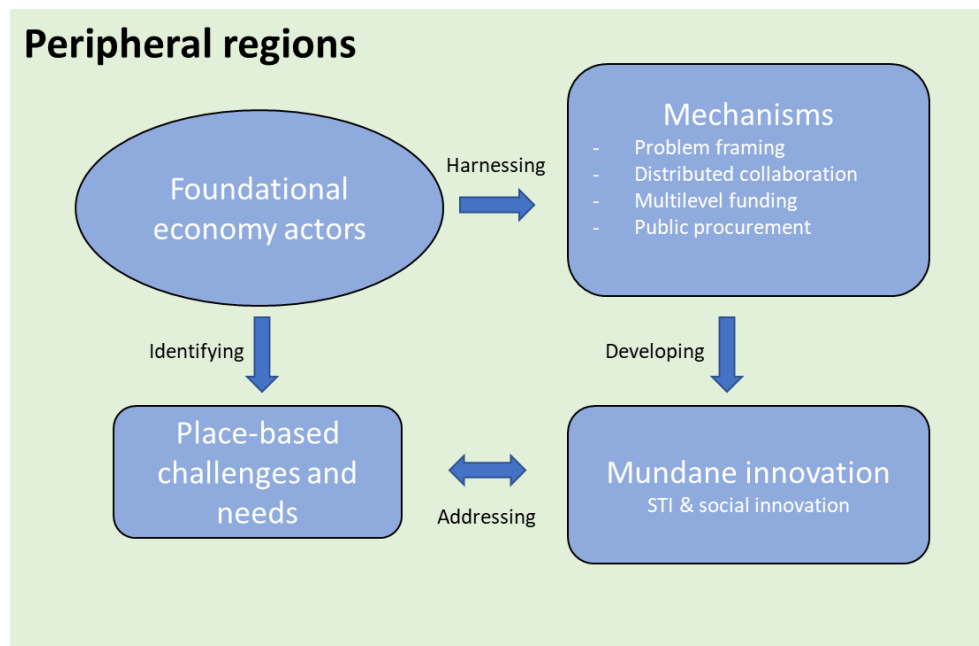
approaches to the food system the partners worked collectively to conduct research into the health benefits for pupils, develop more locally attuned procurement practices and raise awareness of the potential community and environmental benefits that could be generated from more local contracting. This modest foundational pilot project has enabled the partners to establish an innovation process through which a suite of local public support policies have emerged to calibrate supply and demand of healthier food products, and inform a 'public plate' strategy that aims to deliver health and wellbeing outcomes for children through the school meals service as well as commercial dividends for local farmers and producers.

While the collective size of food procurement by the public sector in Carmarthenshire is significant, there are limitations. Broken down by categories of funding, the sums are too small to have sufficient leverage for local small and medium-sized enterprises. Wider policy changes from the Welsh Government may, however, have allowed the county to further frame its activities in support of local objectives, but also national priorities. Here the Labour Government and Plaid Cymru Cooperation Agreement has prioritised a new offer of free school meals to all primary pupils across Wales (Welsh Government 2022). This social innovation has been described as 'a transformational intervention in terms of child hunger and child poverty, which will support educational attainment and child nutrition and local food production and distribution, benefiting local economies' (Welsh Government 2021). It offers the opportunity for further social innovation processes by the public sector partners to build on the work of the FE Challenge Fund to better calibrate the demand (schools and hospitals) and supply (farms and growers) for food in the county. But this problem will not be easily overcome given the disconnect already noted between what is currently being produced (e.g., red meat) and the diets recommended for school children (e.g., more fruit and vegetables). Far from being a purely local problem, however, the systemic disconnect between the supply and demand sides of a healthier foodscape is a major challenge for the UK's neoliberal approach to food policy, not least because it is the European country that is most closely associated with the 'fast food nation' culture of North America, where ultra-processed foods have been allowed to colonise the market (Lang 2021; Morgan et al. 2006).

5. Discussion

The findings introduce the concept of mundane innovation as a way in which FE actors in the periphery may be able to engage in innovation. Here the case results indicate that this may take the form of STI *and* social innovations (e.g., Pentre Awel as a new way organising health and wellbeing provision, and in public value food procurement) and have the potential to address place-based challenges found in peripheral areas. Although the distinctive nature of peripheral innovation processes have begun to be examined (Eder & Tripp 2019; Glückler et al. 2023; Shearmur 2015), the concept of mundane innovation alerts us to both new actors and diverse, non-market objectives that address the specific needs of a place. In highlighting mundane innovation, the findings do not deny that peripheral areas in less developed regions face challenges in innovating (Eder 2018). On the contrary, they highlight the challenges of supporting innovation in constrained fiscal contexts, and the need for both creative and pragmatic responses. Nor do they deny that actors from the traditional traded sectors (such as the R&D active firms likely to engage in the Pentre Awel project, and food suppliers) are likely to play a role in supporting innovation at the heart of mundane innovation. Here the findings highlight four mechanisms by which FE actors may be able to develop mundane innovation to address these place-based challenges and needs (see Figure 2). These represent interlinked, causal linkages with the potential for mundane social challenges faced by places. As with other forms of commercial innovation Figure 2 does not presuppose that these innovations will be a success. As innovation theorists have long pointed out, innovation activities may not lead to the successful introduction of an innovation. The role of FE actors in identifying place-based challenges may be similarly imperfect and may lead to needs being incorrectly specified or other priorities ignored. This represents a risk that FE actors will need to guard against. However, our findings suggest that they may draw on their position of being in close proximity to such challenges and collaborative responses in this role.

Figure 2. FE actors, mundane innovation and place-based challenges in peripheral regions



First, the findings highlight how peripheral areas may be able to use *problem framing* to both identify and develop mundane innovation solutions that address important policy and legislative objectives. Such framing of problems tends to be under-emphasised in the regional innovation literature, but one that may be important to identifying new sources of industrial growth (Flanagan et al. 2022). The process of framing in government and policy settings has, however, highlighted the role of actors and agency in drawing on expert inputs in creating the rationale for innovation actions as well as aligning actions to wider policy priorities in settings such as the European Commission (Edler & James 2015). The findings of this research, however, suggest that FE goods and service provision in peripheral areas, drawing on their intimate knowledge of place-based problems and their connections to other FE goods and service providers in a region may be able to develop the legitimacy and authority to act. Here the findings suggest that this process of framing mundane innovation is one that seeks to build shared understanding of place-based problems and solutions. This can have a multilevel dimension, and both may be important in securing authority for action. Organisationally, the findings suggest that this can incorporate multiple FE responsibilities (e.g., in the case of Pentre Awel – health and procurement) and aligning to multiple priorities. External framing of mundane innovation actions can also provide

additional support to reinforce local problem framing, as it can link mundane innovation actions to much wider policy priorities, offering the potential for greater access to funding. Policy framing, however, is more than simply implementing national priorities, but one that allows for the development of innovative responses to peripheral needs and challenges based around FE actors' local knowledge and understanding of needs.

Second, rather than actors working unilaterally, our findings suggest mundane innovation in the periphery is more effective as a form of *distributed collaborative agency* in which FE actors work together to design solutions horizontally with neighbouring areas, and vertically with multilevel partners (e.g., Welsh Government). This can be also important as potential solutions are multidimensional and require expertise and resources from distributed partners (e.g., the addition of health, wellbeing and research activities within Pentre Awel). Although such collaboration can form part of the problem framing process (as discussed above) it is equally important to the implementation of mundane innovation actions and the outcomes achieved. This can help to ensure that solutions are understood from multiple perspectives (e.g., FE actors with different priorities and geographic remits). Here the results also illustrate how FE actors in the periphery can work together to bring resources to support this process, for example, Pentre Awel's network links to social care and wellbeing activities of other public actors in the area. However, mundane innovation does not rely exclusively on public service interactions and resources. The food and health cases highlight the potential for mundane innovation activities to engage with private sector actors, and the potential for social outcomes to be complemented by an economic dividend. Moreover, while the importance of local knowledge has been identified in studies of firm-based innovation in the periphery, the key point here is that FE actors' understanding of regional issues and place-based responsibilities provides unrivalled knowledge on which to convene mundane innovation activities in peripheral areas. This may be particularly important for peripheral and less developed regions lacking the density of typical innovation actors (e.g. advanced firms or knowledge providers) in urban areas (Eder 2018).

Third, *funding for innovation* represents a challenge for FE goods and service providers, particularly in an era of austerity (MacKinnon et al. 2021). To this end the funding that FE actors draw upon to support mundane innovation may not be the typical sources of the innovative firms in urban areas (e.g., profits, venture capital funding), but instead

harnessing *multilevel funding* sources. As highlighted above, and in the case studies, this can draw on the framing solutions to national policy priorities. Responding to such funding opportunities may, however, require agility on the part of FE actors to develop responses to opportunities that arise at multiple levels of government. The increasing institutional turbulence of sub-national governance arrangements in the case study region and wider UK (MacKinnon et al. 2022; Waite & Morgan 2018), attests to the importance of this agility in aligning to multiple policy priorities and funding sources. While this can help to provide funding for experimentation (e.g., in the food case) as well as more substantive capital costs (e.g., Pentre Awel), FE actors may have limited control about the timing and use of such resources. Therefore, peripheral areas may require actors to be agile in responding to alternative sources of funding, as well as flexibility in the implementation of innovative solutions.

Fourth, *public procurement* provides a potential resource for mundane innovation as well as an opportunity to address the potential weaknesses of FE goods and services providers if public bodies have the competence and the confidence to deploy it effectively (Morgan & Morley 2014). While procurement has been identified as an important mechanism to produce value for money generally, the case findings illustrate how the substantial procurement budgets can be brought to bear on innovation solutions to place-based needs in health and wellbeing and food production and consumption. Making use of procurement as a source of innovative funding, however, faces well established problems such as the lack of capacity within procurement teams (Uyarra et al. 2020). Yet the case results highlight that the problem framing process also includes engagement with a broad range of actors within public organisations, including procurement professionals, as well as research to inform the opportunities offered by procurement (e.g., food and Pentre Awel). In both cases this allowed the mundane innovation processes to incorporate adaptations to the procurement regulations, allowing public officials to develop a shared understanding (e.g. local health board, local authority and procurement officials (e.g. in Pentre Awel) for a greater focus on quality, in line with the objectives of Pentre Awel and the food case (Morgan 2019). Such policy adaptations are not without the challenges noted above, but in peripheral areas with limited funding for innovation activity in either the private or public sectors, our research

suggests that public procurement represents a hitherto untapped resource for promoting mundane innovation.

While these mechanisms may not be unique to mundane innovation activities in peripheral areas, our argument is that they are likely to have particular resonance for FE actors outside of core metropolitan regions. In this respect these mechanisms may be employed in both core and peripheral areas as a result of austerity cuts, although they may be disproportionately of benefit to peripheral areas lacking other sources of innovation.

6. Conclusions

This article examines the potential for FE actors to catalyse mundane innovation activities in peripheral regions. Drawing on research from Carmarthenshire, Wales, it contributes to the growing reappraisal of the nature and role of FE goods and service providers in regional economies (Morgan & Henderson 2023; Thompson 2020). In doing so it connects to the ‘innovating in the periphery’ literature that has started to challenge the view that peripheral areas are, by definition, laggards relative to core urban areas (Eder & Trippel 2019; Glückler et al. 2023). This, we argue, highlights a dual binary problem that casts peripheral innovation as distinct from urban innovation, and underplays the role that FE actors may be able to play in innovation in peripheral areas. These findings challenge such binary perspectives by examining the role that FE goods and service providers might be able to play, and developing the concept of mundane innovation, defined as innovation in the mundane goods and services of the foundational economy. Four interlinked mechanisms through which mundane innovation may be leveraged by the FE are identified and discussed, including problem framing, distributed collaborative agency, multilevel funding and public procurement.

These findings suggest that instead of emphasising compensatory strategies such as seeking access to knowledge and collaborative partners and exploitation in core areas (Brydges & Hracz 2019; Grillitsch & Nilsson 2015), the FE may provide a more localised, place-based route available to peripheral areas to innovate. Moreover, in contrast to innovation strategy processes that rely on science and technological innovation, the FE may also provide the basis for unusual actors to contribute to innovation because private firms are not the only agents of innovation in peripheral regions (Morgan 2019). Indeed, the presence of FE in

peripheral areas offers a non-exclusive basis for such areas to engage in innovation, particularly those that may lack many of the assets and processes identified in studies of urban innovation. In this respect, the potential for innovation in mundane FE goods and services is also open to urban areas. Our findings, however, suggest that this may have a potentially greater significance in peripheral areas. While we acknowledge the challenges facing FE goods and service providers, not least from austerity budgeting and neoliberal strategies designed to shrink the public sector, our results highlight the potential role that the FE may be able to play in peripheral areas, especially in promoting forms of innovation that serve the essential human needs of all citizens.

The article also highlights areas where the study of regional innovation in the periphery could be enhanced. First, the peripheral regions research agenda could be further advanced with studies of mundane innovation under different sectoral and peripheral contexts. As Pugh & Dubois (2021) note, there are multiple varieties of peripherality, and this may influence the different possibilities for FE actors to contribute to social objectives. Second, the role of power and control configurations in peripheries may be a further area for exploration, for example cases where FE actors do not have a lead role in the innovation processes. This might shape the governance of such initiatives as well as their localised outcomes and scale-up trajectories. Third, these research implications highlight the need to build on the single case-study approach adopted here, through multiple case designs in different peripheries. Finally, while the focus of this article has been on peripheral areas, the presence of FE in all geographical areas is likely to present opportunities for innovative development in core urban areas as well. This may offer researchers the opportunity to examine the potential for new synergies between urban and rural regions, perhaps tempering the age-old tendency to treat them in binary terms.

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