



International approaches to population ageing and decline

Eleanor MacKillop, Amanda Hill-Dixon, Cate Hopkins and Charlotte Morgan

December 2023

Our Mission

The Wales Centre for Public Policy helps to improve policy making and public services by supporting ministers and public service leaders to access and apply rigorous independent evidence about what works. It works in partnership with leading researchers and policy experts to synthesise and mobilise existing evidence and identify gaps where there is a need to generate new knowledge.

The Centre is independent of government but works closely with policy makers and practitioners to develop fresh thinking about how to address strategic challenges in health and social care, education, housing, the economy and other devolved responsibilities. It:

- Supports Welsh Government Ministers to identify, access and use authoritative evidence and independent expertise that can help inform and improve policy;
- Works with public services to access, generate, evaluate and apply evidence about what works in addressing key economic and societal challenges; and
- Draws on its work with Ministers and public services, to advance understanding of how evidence can inform and improve policy making and public services and contribute to theories of policy making and implementation.

Through secondments, PhD placements and its Research Apprenticeship programme, the Centre also helps to build capacity among researchers to engage in policy relevant research which has impact.

For further information please visit our website at www.wcpp.org.uk

Core Funders



Cardiff University was founded in 1883. Located in a thriving capital city, Cardiff is an ambitious and innovative university, which is intent on building strong international relationships while demonstrating its commitment to Wales.



Economic and Social Research Council (ESRC) is part of UK Research and Innovation, a new organisation that brings together the UK's seven research councils, Innovate UK and Research England to maximise the contribution of each council and create the best environment for research and innovation to flourish.



Welsh Government is the devolved government of Wales, responsible for key areas of public life, including health, education, local government, and the environment.

Contents

Summary	4
Introduction	6
Section 1: Fertility	13
Key Messages	14
Introduction	15
Socio-economic interventions	17
Medical and health interventions	21
Policy mixes for boosting fertility	25
Section 2: Retaining people	29
Key Messages	30
Introduction	31
Graduates	32
Retaining people in rural areas	37
Section 3: Attracting people	45
Key Messages	46
Introduction	47
Repopulation projects	48
Visas	51
Attraction programmes	53
Conclusion	58
References	62
Appendices	66

Summary

- » This report explores the effectiveness of international policy responses to population ageing and decline. There are many drivers of population changes. This report focuses on fertility, retaining people and attracting people.
- » The Office for National Statistics projects that there will be around 77,000 more deaths than births in Wales between mid-2020 and mid-2030. Almost all of the growth in the Welsh population will be among the over 65s; the number of under-18s in Wales is predicted to start falling from the mid-2020s. Population ageing and decline present Wales with a range of challenges and opportunities.
- » The particular concerns underpinning this research are the fiscal and economic risks. This could be to be balanced with broader policy and well-being goals.
- » There is strong evidence to suggest pro-family policies, such as more generous childcare and parental leave, are associated with increased fertility. There is significant scope in Wales and the UK for expanding childcare and paid parental leave.
- » There is some scope in Wales to enhance access to assisted reproductive technology, and this could be cost-effective over time. Longer-term environmental factors, such as air pollution and 'forever chemicals', which affect fertility, could also be considered.

- » There is less strong evidence for policies targeting retention and attraction of people. A range of factors determines population retention and immigration, including work, education and training, housing, public services, transport and connectivity. Job opportunities are the most important factor for working-age people. Overall there is less robust evidence related to retention and immigration; policy pilots and evaluations are needed.
- » Graduate retention schemes could focus on work placements, simplifying processes for coming to and remaining in the country. The schemes could involve other relevant partners.
- » Policies to retain or attract people could take a place-based approach, building on an understanding of local assets and challenges. There also needs to be an understanding of the motivations of the group of people whom an area is seeking to retain or attract.
- » Local authorities can play a key role in attracting people to their areas through relocation grants and other incentives, and by putting in place strong pull factors such as public services and leisure.
- » When devising repopulation schemes, many local stakeholders could be involved in determining what and whom the local area and economy needs. Making the schemes well-known and easy to navigate and access, and offering appropriate support, improves their uptake and effectiveness.

Introduction

Wales's population is ageing and whilst its overall population has been increasing, its underlying natural population (the number of **live births** minus the number of **deaths**) is falling. It is projected that there will continue to be more deaths than births, with a total of 77,000 more deaths than births between mid-2020 and mid-2030 (Welsh Government, 2022a). In 2022, there was a 3.1% decrease of births in England and Wales, corresponding to 28,296 births for Wales (ONS, 2023), the lowest birth rate in two decades (Financial Times, 2023).

The population growth that Wales has experienced since 2011 has been due to positive net migration, which is predicted to fall (ONS, 2019). The Welsh Government thus predicts that the working-age Welsh population will start to plateau from around the mid-2020s, with an accompanying decrease in the number of children and young people and an increase in the number of over 65s (Welsh Government, 2022a).

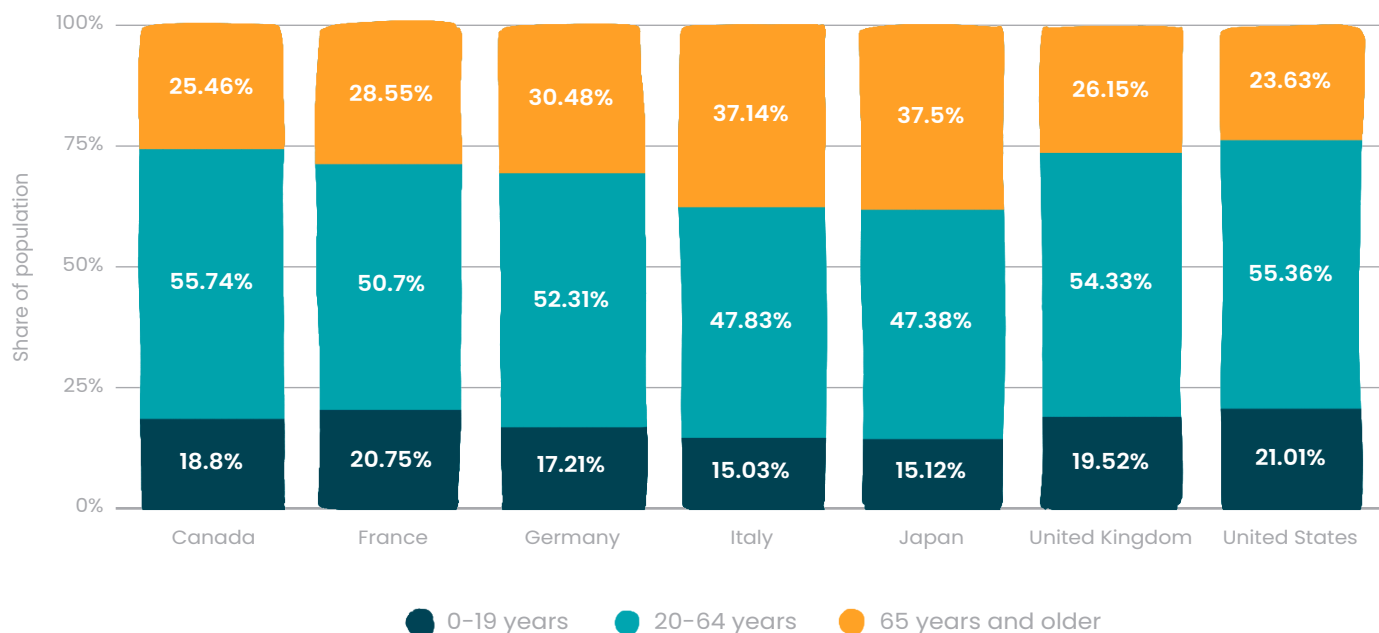
A combination of factors – including people living to older ages, the transition of the post-war baby boom generation into retirement and women having fewer children – means the number of pensioners is set to increase relative to the population of working age.

The trends of population ageing and decline are not unique to Wales. Two-thirds of all countries and territories in Europe are expected to experience population decline by 2100. Africa is the only world region projected to have strong population growth for the rest of this century (Cilluffo & Ruiz, 2019). Some countries, most famously Japan, and many European regions, have already started witnessing population decline and have begun experimenting with a range of policies to address this (Clark et al., 2010).

These policy experiments have been spurred by the recognition that population ageing and decline have significant implications for the socio-economic wellbeing of countries and regions.

From a policy perspective, population ageing and decline are cross-cutting issues with multiple economic, public service and societal impacts. On the positive side, vastly improved life expectancy was one of the great triumphs of the last century, for example, and population decline could also translate into lower carbon emissions and other environmental benefits. Older people bring with them a wide range of talents, assets and skills, and research shows that they are less likely to commit crimes, are more likely to provide financial and care assistance to their wider families, and are more likely to volunteer in their local communities (Harper, 2022; Welsh Government, 2020a).

Some of the risks and challenges posed by population ageing and decline include increased demand for health and social care services as people age, the prospect of falling house prices and services for younger people closing due to reduced demand, and a possible shrinking of the tax base, and with it, available funds for investing in public services. The state pension is already the largest single item of welfare spending in the UK, forecast to make up 42% of the total in 2023-2024 (Office for Budget Responsibility, 2023). The figure below demonstrates that all G7 countries are predicted to have a higher share of people above 65 years than people between 0-19 years by 2050, with people aged over 65 and 0-19 years forecast to comprise 30.48% and 19.52% of UK inhabitants respectively.



Additional information: Worldwide; Canada; France; Germany; Italy; Japan; United Kingdom; United States; 2022

Source: Statista, 2023

Figure 1: Forecasted age distribution of inhabitants of G7 countries in 2050, by country

The particular concerns underpinning our research are the fiscal and economic risks posed by population ageing and decline. These were highlighted in an earlier WCPP report, 'The Welsh Tax Base: Risks and Opportunities after Fiscal Devolution' (Ifan & Poole, 2018). A major risk that has been identified is the likelihood of a shrinking labour force, and what this might mean for the size of the tax base, overall productivity, and the availability of, and demand for, goods and services. In addition, the Barnett Formula mechanism, which determines the size of the block grant received by the Welsh Government from the UK Treasury, will adjust Wales's block grant to decrease if its population declines relative to England's population (Ibid.). These two factors constitute significant risks to the revenue potentially available to the Welsh Government.

The likely economic impacts of population ageing and decline could be considered in the context of existing characteristics of the Welsh economy, which already weaken the tax base relative to England: Wales has a lower GDP per head than all other UK regions (apart from the North East), a higher proportion of low-skilled workers, and 75% of the workforce working in the service sector (where automation is limited) (Portes, n.d.).

Population ageing and decline are separate but often connected phenomena, presenting some shared and some distinct risks and opportunities. As the birth rate falls, the number of children and younger people decline relative to the number of older people in the population, which creates an overall 'ageing population'.

As these older people die, the population starts to decline, unless the falling birth rate can be increased or mitigated through inward migration. In this report, some of the international policies we explore are related to population ageing, whereas others are related more to population decline, and some to both. Underpinning all the policies we review is a concern with how to boost the size of the population and current/future workforce, with the aim of protecting and even enlarging the Welsh tax base and government revenue.

However, as we explore below, this policy aim will need to be balanced with, and considered in relation to, broader policy considerations, such as those embedded in the Well-being of Future Generations Act (Wales) 2015 (Welsh Assembly Government, 2015). This means that the international policies reviewed in this report should be considered from this broader perspective, as well as from the economic perspective.



Policy context

Wales does not have an overarching and cross-cutting population strategy, unlike Scotland, which published its first strategy in 2021 (Scottish Government, 2021). However, several policy initiatives linked to the policy issues underpinning this report.

The Welsh Government's 'Our Strategy for an Ageing Society' (2021) commits to a number of policies to support older workers, including the re-skilling of older workers and encouraging age-friendly workplaces. As Welsh society ages, policies to boost the employability of older people will be key to mitigating workforce decline.

The Welsh Government's Programme for Government 2021–2026 includes a commitment to consider new ways to address any future funding gaps, grow our tax base and consider the funding implications of any recommendations from the Constitutional Commission (Welsh Government, 2021a).

In terms of retaining young people in Wales, and supporting fertility, the 'Children and Young People's Plan' puts forward policies and programmes designed to make Wales a "wonderful place to grow up, live and work", including the provision of increased funded childcare (Welsh Government, 2022b).

Whilst responsibility for immigration and asylum rests with the UK Government, there is still much that the Welsh public sector can do to successfully integrate those who do migrate to Wales. The 'Nation of Sanctuary – Refugee and Asylum Seeker Plan' (Welsh Government, 2019) includes a range of actions for ensuring that refugees and asylum seekers in Wales are supported to rebuild their lives and make a full contribution to Welsh society.

For example, refugees from Ukraine and Hong Kong could present opportunities for Wales to grow its population. Another related document, the 'International Strategy for Wales', seeks to attract international students to study in Wales (Welsh Government, 2020b).

Other key policy areas that are likely to affect the economic activity and size of the population, and which are devolved to the Welsh Government, include health, education and training, and housing. Other devolved competencies, such as culture, environment, highways and transport, local government, social welfare and tourism, may also all play a role in retaining and attracting people.

The Well-being of Future Generations (Wales) Act 2015 also provides a legislative framework for policy-making in relation to the challenges of population ageing and decline, because it is concerned with long-term well-being across a range of goals which policies in this arena are likely to affect. For example, the goal of "a healthier Wales" will rely on there being sufficient working-age people to care for the growing number of older people in Wales.

It will also be worth considering how some international policy approaches to population ageing and decline, which often focus on prosperity – such as encouraging inward migration – may have unintended consequences of undermining other well-being goals, such as "a globally responsible Wales". For instance, if Wales is attracting skilled workers from countries from the Global South countries, this could undermine the well-being of these countries.

This research

Given the potential implications of an ageing and declining population in Wales, the Welsh Government commissioned WCPP to review international policy approaches to ageing and declining populations. This work sits within the context of the commitments made in the Welsh Government's Programme for Government 2021-2026; namely to address any future funding gaps, grow the Welsh tax base and consider the funding implications of any recommendations from the Constitutional Commission (Welsh Government, 2021).

Population change has two components:

- **natural population change** (the number of **live births** minus the number of **deaths**);
- **net migration** (the number of **immigrants** minus the number of **emigrants**)

A positive population change, when the result of net migration plus live births minus deaths is positive, is referred to as population growth, a negative one is called a population decrease.

This provides a broad classification for examining the evidence on the international use and effectiveness of policies to policy approaches to ageing and declining populations.

The present report focuses on the following three policy approaches:

- **Enabling and encouraging fertility** through medical and health interventions, as well as social and financial support.
- **Retaining people** within Wales, particularly younger people and people living in rural areas.

- **Attracting people** to live in Wales through inward migration.

Other areas with impact on population ageing and decline and the economic climate – such as labour market force participation – were not included as they were beyond the scope of this report. In relation to these three policy areas, in this report we seek to explore the following four research questions:

1. What policies have developed countries used to address population decline and population ageing?
2. How effective have those policies been?
3. What policies could be most applicable to the Welsh context?
4. What can be done in Wales where many of the relevant policy levers are reserved to the UK Government?

Questions 3 and 4 were addressed during a roundtable in September 2023. This research recognises that many developed countries have already begun experimenting with a range of policies to respond to population ageing and decline. In considering its response, Wales can learn from what has worked well or less well elsewhere in the world. However, as with any research of this nature, policies which worked well in other countries or regions will not necessarily transfer easily to Wales, which has its own unique context.

So when assessing the applicability of international policies to Wales, the ease of 'transferability' and the potential need to adapt the policies will need to be considered.

Our methodology

Rather than conducting a systematic and exhaustive search, we conducted a rapid search for, and assessment of, the available evidence base related to answering these questions. For this rapid review, we used key words and key phrases such as 'boosting fertility' and 'promoting immigration' in the Google Scholar search engine as well as searching specific sites such as the OECD's. The review aims to contribute to the evidence base on the topic of policy solutions to population ageing and decline from an economic perspective.

The review was informed by twelve scoping conversations we held with international research experts, who helped us to define the research parameters and to identify relevant examples and sources of information. Because of the vast scope of this report, which includes broad themes as varied as upskilling, childcare, and repopulation, we have focused on summarising the most relevant evidence for each section. We have supplemented this with evidence provided by the experts that we were able to consult throughout the duration of the project. The report was peer reviewed by Professor Gerry Holtham.

A roundtable was also held in September 2023 which brought together Welsh Government officials and academic and policy experts to provide an opportunity to discuss how learning from elsewhere could be applied in Wales in relation to these responses, what could be done where policy is reserved, as well as where there might be opportunities for innovation in policy and practice.

Learning from the international evidence review and the roundtable has been combined into this final report and an accompanying policy briefing.

The structure of the report

The rest of the report is organised around the three themes of our research: fertility, retaining people, and attracting people. Each section starts with a summary of the main findings, which are covered in greater depth in the rest of the section. The conclusion ties up the bigger questions raised in the report and discusses the implications for future policy development.



Section 1: Fertility



Fertility

Key Messages

- » **We found relatively strong evidence relating to the policy interventions that we discuss in this section.**
- » **There is now a gap in European countries between fertility expectations – desired family size – and actual family size. People are unable to have the number of children that they would like. In Wales, the average number of children per woman is 1.47, which is well below the replacement rate of 2.1.**
- » **Policies to encourage and enable fertility may focus on socio-economic interventions, which encourages people to make the choice to have children, or on medical and health interventions, such as assisted reproductive technology (ART), which aim to physically enable people to have children.**
- There is strong evidence to suggest that pro-family policies such as those promoting more generous childcare and parental leave are associated with increased fertility, to the extent that this could help countries with low fertility to increase fertility to the replacement rate. There is significant scope for expanding the provision of childcare and parental leave in Wales and the UK.
- Pro-natal policies, such as financial incentives or “baby bonuses”, seem to affect when people decide to have children, rather than whether they decide to have children. They therefore have little overall impact on the longer-term total fertility rate (TFR).
- Comparative evidence from European countries suggests that there is scope in the UK to enhance access to ART and that this could be cost-effective once lifetime taxes are taken into account. This would also support people’s human right to choose whether or not to have children. However, there is also evidence that expanded public ART provision can delay women’s decision to have children with the risk of a decreased overall fertility rate.
- » **Longer-term environmental factors, such as air pollution and “forever chemicals”, which affect fertility, could also be considered.**
- » **Policies targeting fertility must take account of other factors, such as social norms and values, gender roles and the welfare context. What works in one country might not work in another.**
- » **Policy-makers must also consider how one policy will interact with any other policies introduced to address fertility decline. Packages of policies covering related issues – such as ART, childcare, and parental leave – are likely to have a greater impact than a single-themed, isolated policy.**
- » **Fertility policies are limited in their ability to address population ageing and decline in two key ways: a) they will not impact upon the size of the working age population for at least 18 years, and b) they will only have the desired affect on the tax base if those people decide to stay in Wales during their working years. As such, population retention and attraction are also key.**

Fertility

Introduction

A focus on fertility is a key medium- to long-term strategy for boosting the size of the working-age population, especially as immigration policy is largely determined and controlled by the UK government. Worldwide for the last 50 years, the total fertility rate (TRF) – or the average number of children per woman – has decreased. It is now below the replacement rate (of 2.1 children per woman), which would allow the population to remain constant. Governments, particularly in countries in the global North, are grappling with the question of encouraging and boosting fertility. For example, 66% of European countries have adopted policies to improve fertility levels (United Nations, DESA, 2017). The share of countries with pro-natal policies – that is, aiming to increase birth rates – has risen from 10% in 1976 to 28% in 2015 (ibid.). There is now a gap in European countries between fertility expectations – the desired family size – and actual family size, which suggests that people are unable to have the number of children that they would like. A [2019 cohort study of UK women](#) found that they had on average 0.3 fewer children than the number they said they desired (Brough and Sheppard, 2022).

In 2020, the TFR for England and Wales combined was 1.58, with Wales having a TFR of 1.47. In the UK, Wales had the lowest overall conception rate (the percentage of all attempts that lead to pregnancy), with 66.6 conceptions per 1,000 women. Wales has also seen the largest decrease in conception rates since 2009 (down 11%) (ONS, 2022,c). The infertility rate in the UK is estimated at 1 in every 7 adults (NHS,2020).¹

As we explore below, policies to encourage and boost fertility follow two main approaches: socio-economic measures, which encourage parents to make the choice to have children, such as baby bonuses, parental leave, and childcare provision; and physical measures, which include medical interventions designed to ensure that parents are physically able to have children once they have made the choice, such as fertility treatment. Longer-term environmental factors affecting fertility also need to be considered by policy-makers. In the Welsh and UK contexts, there are limits to which it is socially and politically acceptable for the state to involve itself in the sphere of fertility. The focus here is on policies that enable people to have the number of children that they desire if physical and socio-economic barriers were removed.

Several experts in attendance of the roundtable highlighted that there is no clear-cut way to increase fertility rates. Countries across the world have found that policies to increase fertility are not always as effective as we would hope for them to be. In the context of Wales, it was noted that if the problems needing to be addressed are an ageing population, increased healthcare costs and a reducing tax base, increasing fertility rates alone will not solve these problems, certainly not in the short term. Instead, fertility policies will need to be considered alongside other policies, such as those aimed at attracting and retaining people.

¹ Infertility is when a couple cannot get pregnant (conceive) despite having regular unprotected sex.

Below, we summarise the international evidence on these two kinds of policy approaches: socio-economic interventions, and medical and health interventions. When assessing policies and whether they would affect fertility in the same way in one country context or another, it is important to consider factors such as the welfare context, social norms and values, and gender roles. As one scholar suggests:



Ultra-low fertility is not an inescapable fate, but a reflection of the policies, institutions, and norms prevalent in a society

(Doepke et al., 2022).

See Appendix 1 for a summary table of some of the international interventions reviewed on the theme of encouraging and enabling fertility.

The rest of this section looks at ways of boosting fertility, first in relation to socio-economic interventions, and then at medical and health interventions. The section concludes with a discussion on possible policy mixes for doing this.



Fertility

Socio-economic interventions

For many people, it is socio-economic factors that can determine whether they want to attempt to have children or not, and, if so, how many. Many governments have therefore looked to social and economic services and incentives to make the prospect of having children more feasible and desirable, as well as to improve parent and child outcomes in the longer term.

A systematic review examining the relationship between family policies and fertility across Europe, the United States, Canada and Australia found a strong positive relationship. It notes:



lasting and substantial effects on fertility both for large reforms of public childcare and parental leave. These two policies go a long way in alleviating the conflict between women's roles as workers and mothers, and evidence of effects is particularly present from contexts where this conflict presumably was quite high (Norway in the 1970s and Central Europe in the 2000s)

(Bergsvik et al., 2021).

Below, we explore the international evidence related to parental leave, childcare, and financial incentives.

Parental leave

A significant consideration relates to the logistical, financial and quality of life factors that affect people's decisions around fertility is parental leave: the pay people can expect to receive while on maternity or paternity leave and the accompanying conditions, such as the length of leave and the right to return to work. Different countries and sub-national levels of some governments have established different policies on parental leave, including pay and duration. In the 2021 systematic review by Bergsvik et al., mentioned above, large increases in parental leave were found to positively impact fertility. For example, an Austrian reform doubling the leave period from 12 to 24 months led to a 5.7% higher likelihood of another birth. Studies conducted in Anglo-Saxon contexts such as the United States and Quebec support this finding (ibid.). In more than half the studies reviewed by the 2021 systematic review of policies' impact on fertility (ibid.), parental leave policies have a greater impact on fertility decisions of higher-earning women (who tend to have a greater attachment to their employment and have financially more to lose by leaving work). It is also worth noting that an increase in parental leave for mothers tends to have a higher effect on fertility than increasing parental leave for fathers.

Entitlement to maternity leave is generous in the UK (including in Wales²) in terms of how much time women are entitled to take off work compared to other OECD countries, with mothers being able to take up to nine months of maternity leave.

² Parental leave is not devolved as it falls within employment law which is reserved to the UK government.

However, compared to other OECD countries, payment rates are lowest in the UK and Ireland, with only one-third of gross average earning being replaced by maternity benefits. **“As a result, despite lengthy maternity leave entitlements, full-rate equivalent paid maternity leave in these countries lasts only seven and eleven weeks, respectively”** (OECD, 2022).

Childcare

In countries where it is easy to combine family and work, women tend to have both, whereas in countries where it is difficult to combine family and work, women are likely to have fewer or no children. The availability and affordability of childcare is one of the key factors determining how easy it is for women to combine family and work. Evidence from across countries in the global North shows that public spending on early childhood education and care (ECEC) is closely related to both fertility rates and women’s employment (Doepke et al., 2022). For example, the 2021 systematic review by Bergsvik et al., of 335 studies, including quasi-experimental designs, finds that childcare expansion – including an increase in availability, ease of access and reduced cost of childcare – “increase[s] completed fertility” (Bergsvik et al., 2021: 913). In the case of Norway, “each percentage point increase in childcare coverage for pre-school age children increased the number of children per woman (at age 35) by 0.7%” (ibid. pp.924-8). Similar increases were noted in other countries, such as Belgium, France and Germany. For example, an expansion in the provision of childcare among Belgian dual-earner couples found an increase in first-birth rates of 2.3% per percentage point increase in childcare coverage. And in Germany, a study examining the staggered local implementation of a new federal childcare policy ensuring any child under the age of three years has access to free childcare slots led to a de facto randomised control trial (RCT).

The study found “consistent and robust evidence of a substantial positive effect of public childcare expansion on fertility”, and specifically that, a 10% increase in childcare coverage led to an increase in the number of births per 1,000 woman of 1.2 (Bauernschuster et al., 2014). That would be equivalent to roughly 1,256 more children being born in Wales (based on estimating the number of women able to conceive at two thirds of the female population in Wales which stands at 1,586,600, when two thirds of the whole population of Wales is aged 15 to 64)³. The 10% increase in childcare coverage could include a mix of availability of nursery spaces, greater time slot availability (e.g., before and after work), widening availability of nursery spaces to more parents.

Such increases can make a real difference to the overall national TFR. For example, a statistical modelling in Norway over the period 1973–1998 estimates “that moving from having no child-care slots available for pre-school-age children to having slots available for 60 percent of pre-school children leads the average woman to have between 0.5 and 0.7 more children” (Rindfuss et al., 2010). For countries struggling with the ramifications of very low fertility, **“increases of this magnitude would be sufficient to approximate replacement-level fertility”** (Rindfuss et al., 2010).

In contrast with the provision of affordable ECEC in the countries identified above, in the UK, childcare costs are some of the highest among OECD countries (see Figure 2). Childcare provision and policies in Wales are similar to the UK.

³ This calculation is a very rough estimate based on two thirds of the Welsh female population being aged between 15 and 64 (even though fertility in the higher age groups will be much decreased). Here, two thirds of the Welsh female population (1,586,600) is equal to 1,047,156. Increasing childcare provision by 10% could lead to 1.2 more children per 1000 women, or for 1,047,156, 1256 more children.

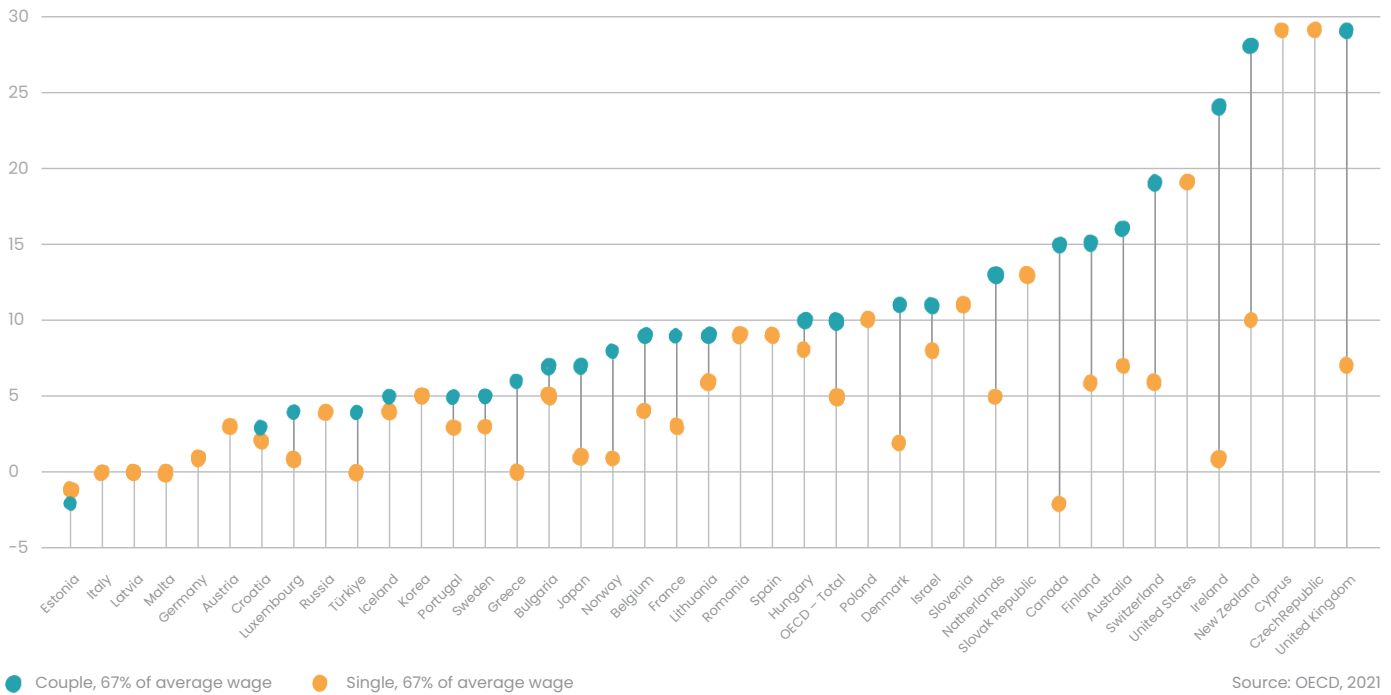


Figure 2: Net childcare costs

For instance, the Welsh Government’s ‘Flying Start’ programme offers parents from disadvantaged backgrounds up to 12.5 hours of childcare a week per child for children between the ages of 0 and 4 years. This is about to be made universal in the Welsh Government’s Programme for Government. For working parents and those in training, the Welsh Government offers up to 30 hours a week for children between the ages of three and four years. The UK, including Wales, faces particular challenges regarding childcare: this is traditionally a low-pay sector, with people being paid the minimum wage or below, leading to difficulties in both hiring and retention. Another factor hindering hiring and retention in the sector is that there is little opportunity for career progression. In addition, the working patterns are also often shift patterns, which requires coordination and flexibility.

Research by the Bevan Foundation shows that full-time childcare in Wales costs 52% of a lowest-quartile earner’s salary (Bevan Foundation, 2005).

More recent analysis by Business in the Community (BITC) using Coram Family and Childcare survey results also found that across the UK, full-time nursery for children under the age of two is costing some parents more than half of one parent’s weekly take-home pay (Business in the Community, 2022). In Newport, for example, the median weekly take-home pay is £396 but full-time nursery costs total at £247 a week which is 62% of one parent’s weekly take-home pay (Business in the Community, 2022). This evidence and the situation in Wales strongly suggest that there is scope for the Welsh and UK Governments to invest more heavily in ECEC as a way of making the prospect of having children more financially feasible, and thereby boosting fertility (Social Market Foundation, 2021). It is also worth considering the additional positive outcomes, which evidence shows are supported by affordable high-quality ECEC provision, such as reduced poverty and enhanced childhood development (Bucelli & Mcknight, 2022).

Recognising the importance of ECEC, the Welsh Government has already committed to expanding Flying Start, its early years programme, to all children aged 2 and 3 for 12.5 hours per week for 39 weeks per year (Welsh Government, 2022). It remains to be seen whether this is sufficient expansion and investment to boost fertility, as well as parental workforce participation and childhood development.

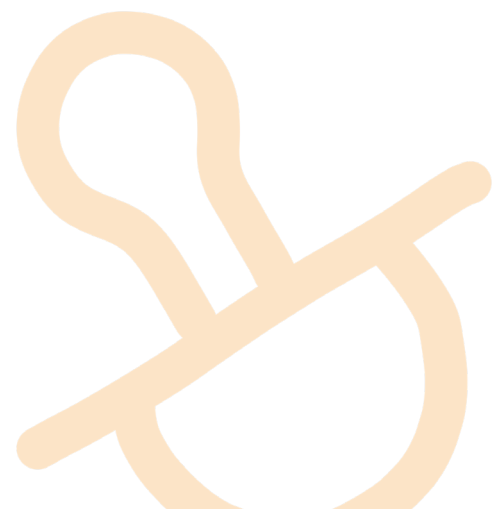
Financial incentives

Some countries and sub-national governments have opted for cash transfers from the state to parents, such as child benefits, to encourage fertility (among other intended outcomes, such as reduced child poverty). These payments may be made when the child is born, within the first year of the child's life, or they may be paid on a monthly basis. Other countries opt for tax deductions for people having children, with some offering greater tax deductions for every extra child born in a family.

The effects of these incentives, especially the cash payments, are often transitory rather than long-term. For instance, an increase in transfers in Quebec, Canada was implemented in 1988, being especially sizeable for third births. The strongest increase in fertility was visible on third births (Milligan, 2005). However, research comparing how these transfers affect fertility in the long term generally show a relative fall in births to follow the short-lived "boom" (Parent and Wang, 2007). The effect of cash payments is usually on *when* people have children, rather than on *whether* they have children. Longer-term perspectives, of five to fifteen years after the policy is introduced, show that there is little impact on the overall number of children that people choose to have.

In 2016, the Polish government adopted a cash transfer policy called the 'Family 500+'. This policy provides parents with 500 zloty (or around £95) tax free per month for second and subsequent children until they reach the age of 18. A separate benefit for first-born children exists for families earning below a certain threshold. The programme covers 55% of children. A recent evaluation of the policy found the lack-of-income threshold led to unnecessary expenditure on some families (Hrytsai, 2021), and that it led to a decrease of Polish women's participation in the labour market (2.5 to 3% less participation) (Brandt, 2018.). An announcement in 2020 by the Polish government confirmed that the programme had not led to an increase in birth rates, which in fact fell back to levels seen before the programme was implemented (Koschalka, 2020).

In comparison to other socio-economic policies aiming to boost fertility, cash payments, especially one-off payments, have been evaluated as less effective. In the countries that we reviewed, the effect of one-off cash payments was often limited and transitory, with the positive effect being on *when* people have children rather than *whether*. This suggests that pro-family policies that support child and parent wellbeing in the longer term, such as childcare, are likely to be more effective than pro-natal policies, which aim to incentivise more births. This is not least because pro-family policies are also likely to support child development and women's participation in the labour force.



Fertility

Medical and health interventions

Assisted reproductive technology

There is a range of medical and health interventions that can be provided for those who would like to have children but are currently unable to because of fertility problems. The most common medical intervention is assisted reproductive technology (ART), which includes in-vitro fertilisation (IVF) (which represents 99% of ART), and other procedures working with eggs or embryos. Regarding cost-effectiveness from a state perspective, it is claimed by some researchers in the field that:



The average £13,000 that it costs to create a baby using IVF is far exceeded by the average of £160,000 in taxes and insurance that will be paid by an adult in full-time employment

(Smajdor, 2007)

Clearly, however, any further investment in ART in Wales will place an initial additional burden on health budgets in the short term, and other costs such as schooling will need to be taken into account in these calculations.

There have been a number of initiatives in different countries or at sub-national levels, where ART has been partly or fully publicly funded. Two Canadian provinces – Quebec and Ontario – have been offering publicly funded ART since the mid-2010s.

In Ontario, anyone under the age of 43 years, regardless of gender, sexual orientation or family situation, is eligible for one cycle of IVF, with a maximum of 5,000 cycles being funded per year across the province. An expert panel convened by the Ontario government stressed that publicly funded IVF would address the main barrier to IVF access, which is its cost. Since the policy was implemented, the use of IVF by women between the ages of 40 and 43 years has doubled, with a cumulative live birth rate (meaning births resulting from fresh and frozen embryo transfer) of over 10% (Healthy Debate, 2019). In the case of Quebec, the overall birthrate decreased during the funded period, arguably because people decided to delay having children because of improved access to IVF (Bissonnette et al., 2019).

The Economist conducted research (including a literature review and interviews with experts) into [the relationship between ART and fertility rates](#). It found that after Taiwan passed a law improving support of ART, the rate of ART-enabled new-borns increased by 50%. (EIU, 2018). A 2007 RAND study did a modelling exercise that showed that if the UK funded similar access to ART as Denmark, the fertility rate could increase from 1.64 to 1.68. (Hoorens et. al., 2007) A review of 23 European countries shows that the most important factor in the ART fertility rate relation is reimbursement – that is the extent to which ART is publicly funded. It also depends on the age profile of women seeking to conceive.

As more births happen in women in their late 30s in high-income countries, the potential for ART to impact overall fertility increases, with for instance Spain seeing its share of babies conceived through IVF rising from 6% of total babies in 2014 to 9% in 2019 (Sobotka et al., 2020).

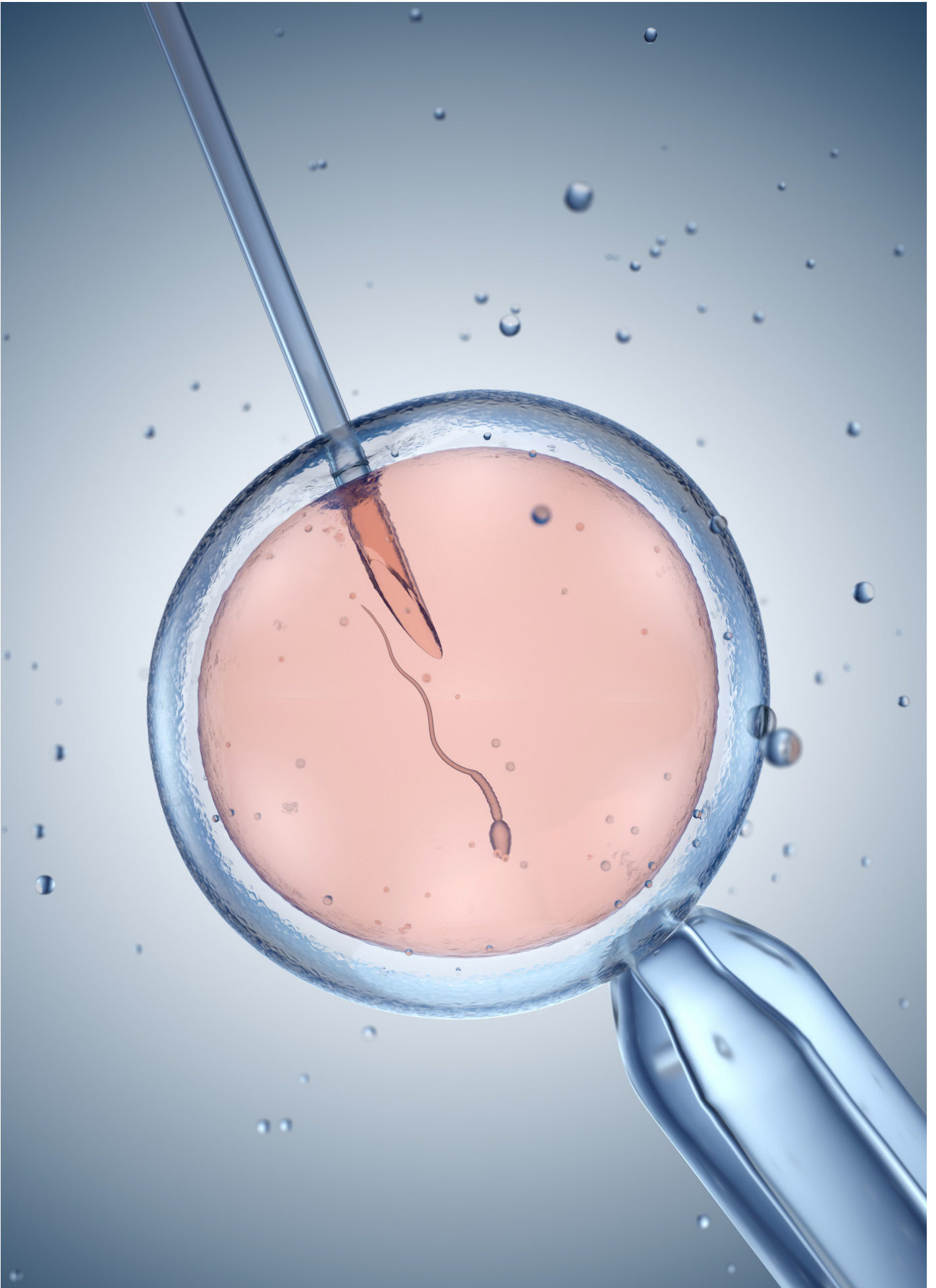
An analysis of trends in the average age at which women in Wales are conceiving and giving birth could help to shed light on the extent to which greater access to ART could help to increase the overall fertility rate.

Although the English NHS states that women under the age of 40 can have access to up to three cycles of IVF (NHS, 2023), many regional differences exist. Some English counties, such as Cambridgeshire, offer no funded IVF cycles at all, and other areas offer three cycles, even for couples who already have children (BBC, 2018). In Wales, the state funds up to two cycles of IVF for all women who meet the Welsh Health Specialised Services Committee criteria (the body that plays a similar role to NICE for Wales) (Senedd Wales, 2021). However, the target timeframe from referral to treatment is 26 weeks, compared with an 18-week target in England. IVF is offered on the NHS in Wales in line with the following criteria (NHS, 2023):

- Women aged under the age of 40 can be offered two cycles of IVF covered by the NHS if they have been trying to conceive for two years.
- Women between the ages of 40 and 42 are offered one cycle of IVF if they have not been offered IVF previously, they show no evidence of low ovarian reserve, and they are informed of the risks of IVF and pregnancy at their age.
- Couples must have been cohabitating for over two years.
- Men must be under 55 to be available for an IVF programme.
- Patients must not have existing biological or adopted children (same for single women).
- Women's body mass index must be between 19 and 30.
- Neither patients nor their partners must be smokers.
- Patients must have not undergone three or more IVF treatments previously.

This compares with Denmark, where women have up to three funded IVF cycles until the age of 46, and couples are referred for treatment after one year of trying to conceive (Time, 2019). The various country approaches to access to funded IVF highlight the discrepancies, especially regarding access for single women or same-sex couples.

A European atlas of fertility policies ranked the UK tenth among 44 countries in Europe in terms of how far people are supported and enabled to access fertility treatment (Fincham, 2021). This suggests that there are ways in which provision could be enhanced. For example, the atlas uses the benchmark of six fully funded IVF cycles to judge levels of provision across Europe.



Longer-term environmental factors

Longer-term environmental factors affecting people's health and fertility could also be considered. There is growing evidence globally that male sperm counts are rapidly declining: a recent meta-analysis of sperm counts from 1973 to 2018 found a 51.5% average decrease (Levine et al., 2022). While the causes of this decline are not fully understood, researchers are increasingly pointing towards environmental factors. For example, a systematic review of human and animal studies found that air pollution leads to a drop in reproductive capacity among men and women (Carré et al., 2017). This is linked to different pollutants such as polycyclic aromatic hydrocarbons (PAHs) and heavy metals, which may be endocrine disruptors, and nitrogen dioxide, ground level ozone and particulate matter, which may generate oxidative stress.

Data suggests that some parts of Wales have some of the highest levels of air pollution in the UK – Cardiff was fourth from the bottom in the UK regions and cities in 2019 (University of Birmingham, 2019). Another study found that it is people in more deprived areas who are likely to be more exposed to this environmental hazard (Senedd Wales, 2021).

Another environmental factor that may be a cause of declining male fertility is “forever chemicals”, or per- and poly-fluoroalkyl substances. A Danish study found that men whose mothers had been exposed to these chemicals while pregnant had lower semen quality as young men (Hærvig et al., 2022). A Senedd study (2021) reports that one in three sperms injected during IVF fails to fertilise an egg because the sperm is defective, illustrating a relatively high level of infertility (at least in the male part of couples undergoing IVF). A recent study from Singapore measured “forever chemicals” in the plasma of 382 women trying to conceive and found that higher levels of such chemicals were associated with a significantly lower chance of becoming pregnant (Cohen et al., 2023).

The Welsh Government may therefore wish to consider policies to reduce the Welsh population's exposure to air pollution and “forever chemicals” as a way of protecting the long-term reproductive health of the population and ultimately as a way of tackling population decline. This approach could achieve longer-term savings due to improved health, fertility and reduced demand for health services in the future. In terms of air quality, this could be achieved in a number of ways. It could include efforts to decarbonise the economy, such as policies on vehicle ownership and charging, industrial biomass burning and ensuring that air pollution is integrated in Net-Zero plans (Clean Air Fund, 2022).



Fertility

Policy mixes for boosting fertility

Whether the intervention is medical or socio-economic, the evidence highlights the many factors determining people's fertility choices and outcomes and suggests that a combination of policies is likely to be most effective in increasing fertility.

Scotland, which has the lowest fertility rate of all UK nations (1.37 versus 1.54 for Wales), has devised a number of policies in 'Scotland for the Future' (2021), which aim to boost fertility directly or indirectly, including: the provision of a baby box for all expecting mothers; doubling the hours of funded childcare and early learning (through a £3 million Access to Childcare Fund); payment for eligible claimants with children under six years old; a women returners programme; improving the family friendliness of the workplace and flexible work opportunities; working with local government to improve access to childcare in rural areas; individualised maternity care; and potential measures such as improving access to NHS fertility treatments, for example, for single people and couples with children (Scottish Government, 2021). As yet, there is no evaluation evidence of these policies, as they have only been recently introduced. But it gives an idea of the range of policies that devolved governments in the UK can consider and experiment with.

It is important to note that the implementation of a combination of policies does not in and of itself lead to the desired outcome. What matters is which policies are implemented and how they interact with the local context. Singapore is a case in point.

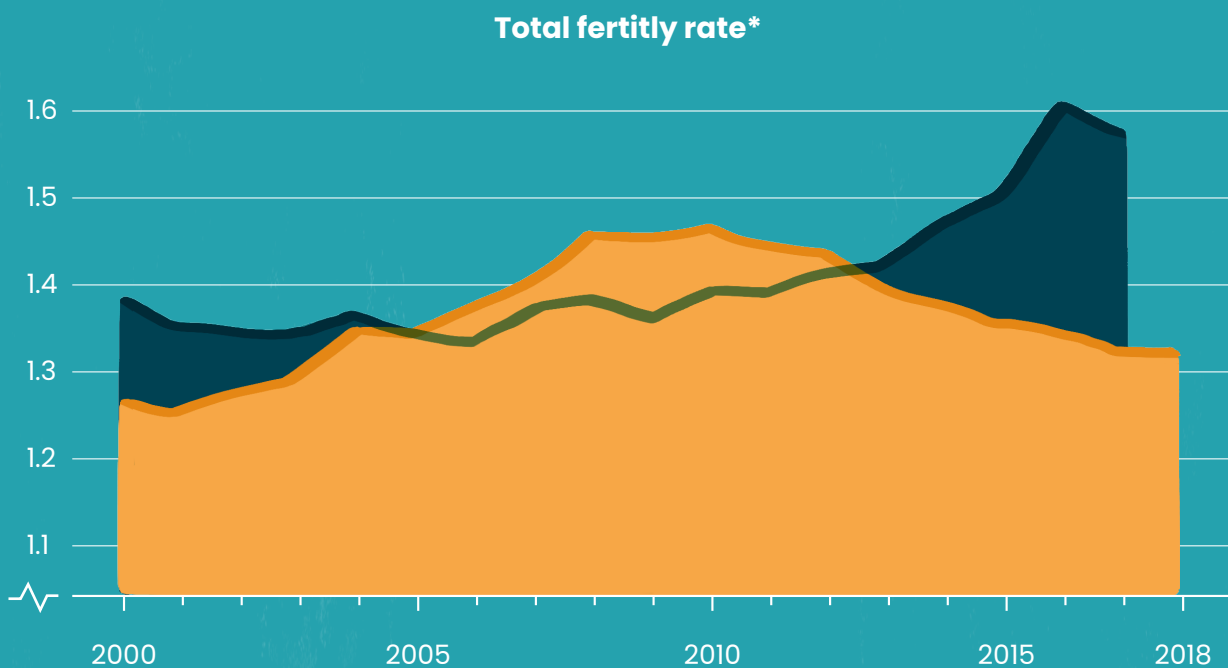
In 2001, Singapore introduced an array of pro-natalist measures to respond to a falling fertility rate, including "paid maternity leave, childcare subsidies, tax relief and rebates, one-time cash gifts, and grants for companies that implement flexible work arrangements" (IMF, 2020). However, by 2018, the fertility rate had dropped further, from 1.49 in 2001 to 1.16. An IMF blog on this subject draws four lessons from Singapore's experience:

- Policies could focus on targeting different age groups with different strategies.
- Targeting ART at older women is not enough to stem a generally declining fertility rate.
- There is a need for parental leave, flexible work arrangements and easy access to cheap childcare.
- A society's focus on high performance (such as work and study) impacts on people's attitudes about having children. (IMF, 2020).
- Singapore's experience highlights the importance of tailoring policy interventions to particular age groups of women, as well as to particular national and cultural contexts.

The experience of Japan, which has faced one of the most acute challenges in population decline globally, highlights the importance of sufficient investment in pro-family and pro-natalist policies to affect people's fertility decisions.

Germany: a case study

Following Nazi pro-natalist policies, the topic of boosting fertility was avoided in German policy debates. Germany had been experiencing low fertility for decades, compounded by the 1989 reunification, which saw economic insecurity lead to women delaying or avoiding having children. However, in the last two decades, Germany has succeeded in becoming one of the only European countries with an increasing fertility rate – from 1.3 TRF in 2006 to 1.607 in 2022, as shown in the diagram below.



(Source: The Economist, 2019)

Italy Germany

*Births per woman

There are two main reasons for Germany's fertility "turnaround": immigration and pro-family policies. Over the last two decades, Germany has been the country of arrival for many immigrants from Afghanistan, Iraq and Syria, and female immigrants from these countries tend to have more children on average than German-born women. A fertility expert from the University of Vienna, Tomas Sobotka, estimates that half of the rise in the TRF in Germany in recent years (2015 onwards) is linked to immigration (Sobotka et al., 2020).

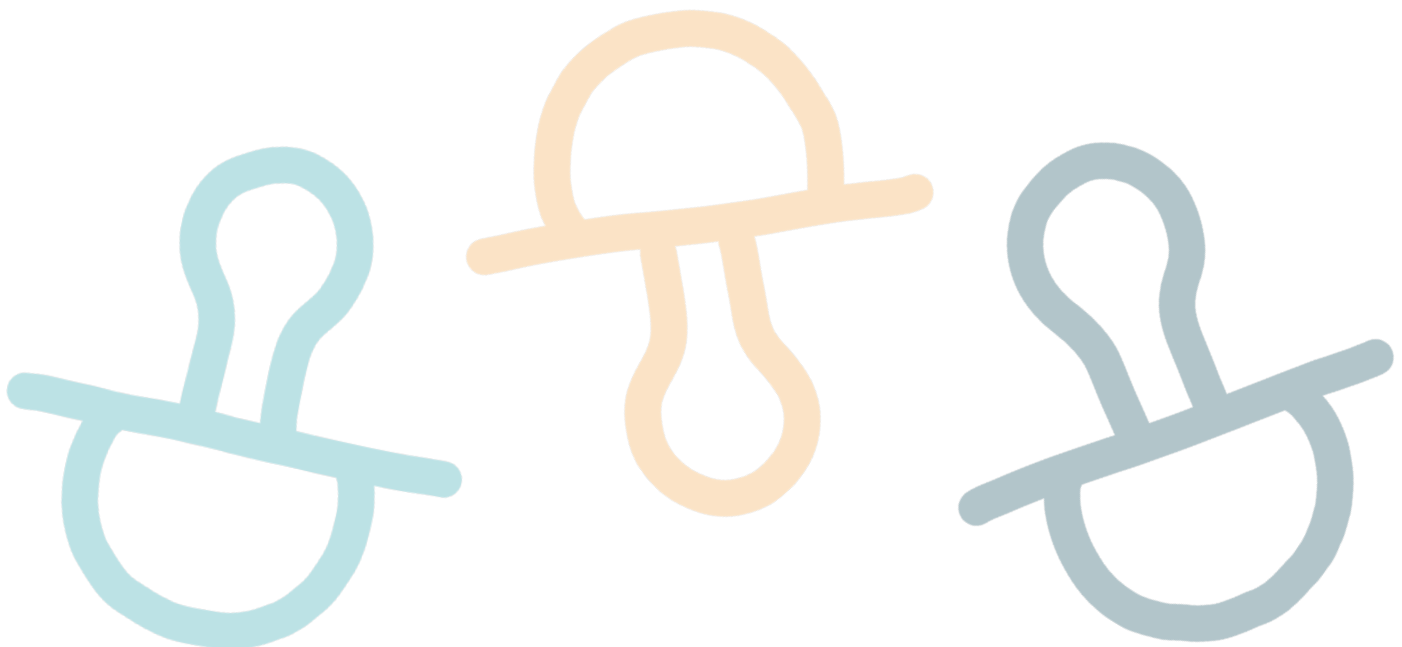
In addition, from the 2000s, Germany started adopting Nordic style family policies, including: more gender equality; more generous childcare provision for children under the age of three; the right of parents to work part-time or to take part-time parental leave, with subsidies for part-time workers who have children (two-thirds of lost income); the right of parents to have childcare for children over one year old; greater provision for fathers to take parental leave; and the late opening of schools after hours. According to the Economist (2019), these measures have led to a sharp growth in enrolment of children in nursery over a decade (2006-2017), from 286,000 to 762,000.

Since the 1990s, Japan has adopted a number of policies to combat declining birth rates and an ageing population. According to the Centre for Public Impact (2017), the impact of these policies has been limited, with the fertility rate increasing slightly to 1.37 in 2008 and 1.42 in 2014. Women's participation in the labour force since the 1990s has decreased and day care access has improved, but is still insufficient for children under the age of two years. More spending continues to be allocated to the elderly than families with children (55% of spending versus 3.5% of spending in 2021). Overall, the evidence gathered from Japanese academics and local authorities suggests that insufficient resources have been dedicated to these policies, and this is supported by a research project on Japan carried out by the Economist Intelligence Unit (EIU). In contrast, one locality in Japan – Nagicho – invested more heavily in both pro-natalist and pro-family policies, with promising results (EIU, 2018). Policies included an increase in the budget for fertility services and birth gifts of 100,000 yen (or £587) for the first child, 150,000 yen for the second child and 400,000 yen for the fifth child (CNN, 2019). In addition, more volunteer-led nurseries, subsidised housing, and baby-sitting services were introduced.

The area saw its fertility rate increase from 1.4 to 2.8 children per women. The success of this case is linked to a “well-funded package of complementary policies”, making having a child easier and more affordable (ibid.). These policies were funded by increasing the proportion of the city's 4-billion-yen annual budget which is dedicated to pro-natal and pro-family policies from 2% to 3%, or equivalent to an extra £240,000 spent annually on family policies (ibid.).

Overall, evaluations of family policies across France, Japan, Singapore and South Korea suggest that “individual family policies generally have small effects on fertility rates” and that “packages of complementary interventions” such as on childcare, IVF, work-life balance and flexible work have more impact (EIU, 2018). The recommendations in the EIU report are to make the country's society more family-friendly, think “fertility in all policies”, improve access to fertility treatments, and for policies to be appropriately funded and implemented.

See Appendix 1 for a summary of interventions reviewed on the theme of boosting fertility.





Section 2: Retaining people



Retaining people

Key Messages

- » **The evidence base related to policies to retain people was not strong, with no systematic reviews, evaluations or randomised controlled trials to support the interventions that we explore here. Instead, the evidence base is constituted of single non-experimental studies and individual uses of a same policy tool. This does not mean that these policies are not effective, but rather that we don't know whether or not they are effective.**
- » **Many factors determine population retention. These include work, education and training, housing and access to public services. The most important factor highlighted by research, especially for graduates, is the availability of diverse and appropriate work opportunities. This means that there needs to be a dynamic local economy.**
- » **Most young people (75%) enjoy living in Wales, but 40% feel that they will have to leave the country for work or study or because there is a lack of affordable housing or appropriate transport in their area. Addressing these push factors is crucial.**
- » **Different groups of people are likely to respond differently to different push and pull factors, and policies could be tailored to particular groups.**
- » **Rather than focusing on a single group, the local economy should consider and seek to attract different types of individuals – such as graduates, experienced and high-skilled workers, and local residents looking for training opportunities.**
- » **The phenomenon of rural depopulation could be a focus of attention because people leaving rural areas often leave Wales, not just their local community.**
- » **Retaining people in rural areas requires a holistic approach that builds on what the assets and challenges are in a specific area. The availability of job opportunities, affordable and suitable housing, and access to broadband and transport, as well as training and education opportunities are key factors affecting rural depopulation.**

Retaining people

Introduction

People choose to stay and live and work in a country or region for a range of different reasons. Understanding those reasons is fundamental to retaining people. Some of the factors that have been identified by the research reviewed in this section include work and training opportunities, housing, schooling and health services, as well as access to leisure opportunities and transport. Other factors that can influence people's decision to stay in a place are the desirability of an area, proximity to family, and access to the countryside and nature. Many of the factors that determine retention – though not all – are the same factors that determine people's decision to migrate to another area.

Although the overall population of Wales grew (by approximately 44,000 people) between 2011 and 2021, there was a drop in the proportion of people aged between 15–19 years' old and between 40–44 years' old (ONS, 2022a). This demographic shift is being felt particularly acutely in some local areas: in Ceredigion, the decrease in those respective categories was 28% and 26%. In addition, several regions in Wales have experienced overall population decline in the last decade, with Gwynedd (-3.7%), Blaenau Gwent (-4.2%) and Ceredigion (-5.8%) having lost the most inhabitants between 2011 and 2021 (ibid.)

Other regions are also at risk of population imbalances. Areas with the highest proportion of people over the age of 65 years are Powys (27.8%), Conwy (27.4%) and the Isle of Anglesey (26.4%).

Policies to encourage people to stay in Wales can focus on different groups of people, such as young people, graduates and working people. Policies may also focus on the different factors that may influence a person to stay, such as work or training opportunities or housing availability. Below, we review and summarise the international evidence on these different types of policy interventions developed to retain people in particular nations or regions. Many of these focus on retaining people in rural areas, which are particularly vulnerable to outward migration. Rural depopulation is of particular concern to the Welsh Government, and it has been an area of policy concern for some time internationally, so there is also more policy research to draw on from this context.

The two broad areas of discussion in this section are first, retaining graduates, and second, retaining people living in rural areas.

Retaining people

Graduates

University graduates constitute a group often targeted by governments seeking to retain people. Graduates are mostly highly skilled, often young, of prime employment age, and because they can move into high-skilled employment, they have the potential to contribute to the regional economy and its productivity. In relation to the UK as a whole, in 2014, university students represented one-fifth of internal migration flows (Centre for Cities, 2016), thus representing the potential for Wales to capture them (or lose them). However, in recent years Wales has been experiencing negative net migration of graduates with around 20,000 more graduates leaving than moving to Wales between 2013–16 (Resolution Foundation, 2017). More recent data from the Higher Education Statistics Agency (HESA) gathered using a new geographical graduate mobility marker shows that 31% of graduates based in Wales prior to beginning their higher education course are found to have left the country for study or work and did not return (HESA, 2022). This is in comparison with lower figures across parts of the UK: 21% leaving and not returning to Northern Ireland and 13% leaving and not returning to Scotland. As such it is useful to look at policy approaches to graduate retention adopted in other regions of the UK and abroad.

A 2019 study by the Centre for Cities undertook a case study of Glasgow, which, with 46% of graduates remaining in Glasgow, has one of the highest graduate retention rates in the UK. Scottish students being exempt from fees means that three-quarters of Glasgow students are from Scotland, with a third being from Glasgow itself.

The study found that, across the UK, universities with local students had, unsurprisingly perhaps, a higher retention rate of graduates. However, Glasgow and Strathclyde universities had a lower graduate retention rate (of around 40%) than lower-ranking universities. Interestingly and in contrast, the Glasgow higher education institution with the highest retention rate was the Glasgow School of Arts (59%), which also has the lowest share of local students and the highest share of international students. The report concludes that it is the availability of jobs that encourages graduates to stay, with creative industries and the arts being an important sector in the Glaswegian economy.

Examining in more depth *why* graduates stay or leave after graduating, a 2016 UK Government Office for Science report on the future of cities looks at a number of UK cities, including Cardiff:



Employment available in Cardiff and its surrounding labour market is also often of a lower quality as measured by pay or anticipated career pathways, than that on offer in other parts of the UK. This is particularly the case for STEM subjects. The weakness is most acute in the private sector, with the public sector employing around half of the post-1992 graduates who were both born in and now live in Wales.

(UK Government Office for Science, Future of Cities, 2016: 42)

The report found that even though student numbers have risen in Cardiff since 2000 – by 60% for undergraduates and trebling for postgraduates, the majority of students who graduate tend to leave Cardiff, even though Cardiff is listed among the top liveable cities in the UK (Cardiff Public Service Board, 2017).

The centrality of job market opportunities and the proportion of high-skill jobs as factors in retention are emphasised by another Centre for Cities report, entitled ‘The Great British Brain Drain’



The patterns of graduate migration appear to be primarily driven by job opportunities. If a city wants to attract and retain a greater number of graduates, then it needs to support economic growth, rather than rely on narrower policies specifically targeted at graduate attraction and retention. Cities should aim to support the creation of more jobs, and particularly high-skilled knowledge jobs.

(Centre for Cities, 2016: 1-2).

Beyond job opportunities, opportunities for progression, or the “escalator effect” appear to determine graduate decisions to remain or leave their city of study (Gordon, 2015). Putting graduate retention into context, and drawing from a Higher Education Statistics Authority survey, ONS data, and examples from other countries, ‘The Great British Brain Drain’ report suggests that a focus on the job market more broadly should be prioritised, rather than on the narrower focus of the retention of graduates. The report asserts that to retain graduates and attract other highly skilled workers, the local economy needs to have some basic conditions in place.

These include a reliable and efficient transport system, an affordable housing market with a variety of available properties, and a planning system that can respond to changing employment patterns and residential demands. Cities and their partners could also focus on boosting the demand for high-skilled jobs and improving the educational attainment and workforce development of local residents.

As well as learning about graduate retention from Glasgow as a city, Wales could look to the whole of Scotland, particularly regarding work placements. Work placements are a way of connecting graduates to the local economy and employment opportunities. From the mid-2000s, the Scottish Government established a scheme to encourage students to stay for an extra two years after their degree by facilitating work placements. From 2010–2013, more than 2,200 students registered for the scheme (Kuptsch et al., 2006). The growing success of this system led to the creation of TalentScotland, a graduate placement programme, which facilitated the employment of 610 graduates by 458 Scottish-based companies in the period 2010–2013. In 2013, this became the ScotGrad scheme, which brought together different partners, such as the Scottish Government, Scottish Enterprise, and the Association of Graduate Careers Advisory Service to help Scottish employers recruit graduates. Assistance was mainly through the part-funding of their salary for fixed-term projects of up to 12 months. According to ScotGrad, 92% of their graduates go onto full-time employment after their placement. (Scottish Enterprise Newsroom, 2013). The sectors most represented in the ScotGrad scheme are the creative industries, enabling technologies, and the energy, food and drink, and textile industries. In 2021, the Scottish Government allocated £3.5 million to the Graduate Career Advantage Scotland programme to help highly skilled graduates between the ages of 18 and 29 find employment in their specialism.

The aim of this pilot programme was to provide well-paid internships for 300 highly-skilled graduates. Following this pilot, further funding was allocated to deliver the service until 2023.

There are also policy initiatives outside the UK that could be of relevance to Wales in seeking to retain graduates.

A 2019 EU Commission-funded study by the International Centre for Migration Policy Development examined how three countries among the most popular study destinations for international students – Canada, Germany and the Netherlands – have developed regulatory and practical measures to retain graduates after they complete their degree. These schemes often involve a relaxing of bureaucratic processes for foreign graduates to access employment and obtain permanent residency. These are summarised in Table 1.

Table 1: A comparison of four legal frameworks for graduate retention: Canada, Germany, the Netherlands, and the United Kingdom

Aspect of legal framework	Canada	Germany	The Netherlands	United Kingdom
Post-study scheme name	Post-Graduation Work Permit (PGWP)	Section 16 subs. 5 Residence Act	Orientation Year	Post-study work visa
Maximum duration of stay	Up to 36 months (depending on length of study programme)	18 months	12 months	24 months (36 for PhD graduates)
Permitted working hours	Full-time employment, self-employment	Full-time employment, self-employment	Full-time employment, self-employment	Full-time employment, self-employment, and looking for work
Labour market test	Not required	Not required	Not required	N/A
Target group	All international graduates of eligible Canadian colleges and universities	All international graduates of German universities	All international graduates of Dutch universities and highly-ranked universities abroad	All international graduates not eligible for EU settlement scheme already residing in the UK
Eligibility period	Within 180 days of completing a full-time study programme in Canada	Until 4 weeks before study permit expires	Within 3 years of graduation	Before student visa expires, no need to have graduated as long as education provider approved Home Office request
Special privileges for international graduates	Priority access to permanent residence (extra points in Express Entry application)	Fast-track permanent residence (after two years of skilled labour/self-employment)	Lower salary requirements for subsequent work permit	The graduate route does not count towards settlement rights

One of the most important findings from the research is that government policies alone do not work. All organisations involved in retaining graduates need to work together:



In order to help international students and graduates transition to host country employment, universities, employers, local governments, employment services, and other relevant local actors need to reassess and better coordinate their job entry assistance

(Morris-Lange, 2019: 2)

The report also reviews the practical initiatives put in place by 208 universities and local partners in the three countries. Informal barriers such as inadequate language skills, insufficient knowledge of the local labour market, and lack of networks prevent international graduates from accessing jobs in their country of study. The authors thus recommend that:

- Universities could provide as much help as possible in addressing the language skills issue and offering training for job applications.
- Employers, especially small organisations, could include international students in their recruiting pool, notably via internship schemes and scholarships.
- Policy-makers could ensure that graduate retention schemes are in line with anticipated labour market needs, and make processing times for visas and permits as short as possible.
- Municipalities where graduates will choose to work could be integrated into this collaborative infrastructure.

Finland is another country worthy of attention. It has the third-highest proportion (12%) of people aged over 85 of all countries, as well as a high retention rate of international students, with 66% staying in Finland for three years after graduating. Similarly to the Morris-Lange study cited above, the Finnish Government has focused on smoothing the graduate visa application process as much as possible, with a target of one-month processing time. In 2017 it established the 'Talent Boost Finland' project, aiming to support the attraction and retention of international employees, students and graduates (Finnish Government, 2023). In line with this, universities such as the University of Helsinki, provide services such as career management training, language courses, and networking, mentoring and traineeship opportunities. Some of these initiatives are mandatory. For example, some master's degree programmes require students to take a career planning course and undergo a traineeship. The 'Talent Boost Finland' initiative also includes the creation of "ecosystems" that include other crucial partners such as national and local governments, as well as employers, which all collaborate in attracting and retaining foreign candidates.

Another policy tool tested by some countries in retaining their graduates and reducing 'brain drain', is establishing agreements with students whereby their degree is paid for by the state in exchange for a number of years of service in that country's public sector once the degree has been completed (known as 'bonding'). The Bill and Melinda Gates-backed University of Global Health Equity was founded in 2015 in Rwanda to train students from across the sub-region in medical and healthcare. In exchange for free tuition and accommodation, each student signs an agreement with their respective ministry of health to commit to work for six to nine years in their home countries once they graduate (Wenger, 2022).

One study reviewing 'brain drain' of healthcare workers in several African countries found that 'bonding' or compulsory schemes of that nature hadn't worked well because, notably, of the poor ability of HR management systems in those countries to enforce the agreement and lack of coordination between the education and health sectors in enforcing them (Dove, 2003). A review of a two-year bonding scheme for medical graduates in Nepal, whereby new graduates are deployed to remote areas of Nepal to provide medical services, found, based on a survey conducted with 69 graduates, that the bonding agreement was perceived by participants as having stunted their professional development potential without adequate compensation. The graduates felt that they had been located in rural areas where there weren't enough investments or resources for them to deliver proper healthcare to the local population (Tamang et al., 2020). This suggests that such bonding policies need to be designed in a way which carefully considers the post-graduation professional development needs of graduates, as well as the needs of local areas in which they may be placed.

To summarise the evidence regarding successful graduate retention, it appears that a combination of regulatory and practical initiatives is required. On the regulatory side, particularly in relation to international students, a seamless and easy-to-use system for applying for and renewing visas and permits is necessary.

At the level of universities, the provision of language skills training, job application and career management training, and mentoring and traineeships are beneficial to graduates staying on after their studies.

Above all and looking at student retention in the UK and internationally, there are two crucial factors to consider.

- the provision of appropriate jobs in the local area or country, both in terms of specific skills area and skills level, with opportunity for career progression.
- cooperation between all actors involved in the retention of graduates – mainly universities, employers and government – is of paramount importance for helping students navigate a complex system and ensuring that their skills are easily matched to the local or national labour market.

The Welsh Government's powers to determine graduate retention, especially in terms of permitting graduates' residency or visas, are limited due to immigration being determined and controlled by the UK government. However, as Scotland does with the ScotGrad scheme by encouraging and supporting employers to sponsor international students when applying for visas to the UK Home Office, the Welsh Government could also enable international students to access and participate in postgraduate placement schemes in Wales.



Retaining people

Retaining people in rural areas

Policies targeting the retention of people often focus on retaining people in areas at risk of depopulation. These are often rural areas (though not always) and different countries and regions have instituted an array of relevant initiatives. Retaining people in these areas, especially young people and working people, is key to maintaining a balance in age groups and economically active/non-active people. It helps to ensure that there is sufficient workforce available to fill vacancies in hospitality, agriculture and public services such as schools, health and social care. Retaining people also matters for keeping local communities alive from a social and cultural perspective, as well as the economy that supports them. A particular factor concerning Wales is that when people leave rural areas, they often also leave the country. Addressing rural depopulation is thus a crucial issue for Wales. Finally, there is a specific Welsh language dimension to this issue. Rural areas at risk of depopulation tend to be those with a high proportion of Welsh speakers (Welsh Government, 2020c). Between 2011 and 2021, there was a decrease in the number of usual residents in Wales who speak Welsh, from 19% to 17.8% (ONS, 2022). The only place where this decrease didn't materialise was in urban areas such as Cardiff or Merthyr Tydfil. As such, tackling the issue of rural depopulation is also key to ensuring a thriving Welsh language.

Many of the policies we review in this section stress the need for a holistic and localised approach to the issue of rural depopulation.

For instance, the Horizon 2020 project 'Social Innovation in Marginalised Rural Areas' (SIMRA) has examined policies implemented by different European states in addressing depopulation of rural areas. Crucially, all successful initiatives were said to be built on '**a realistic analysis of the existing situation**' (SIMRA, 2019). A database of good practices is available on the SIMRA website. The Scottish Government evidence review on push and pull factors for people in rural areas also stresses the need for area- or region-specific policy-making. Rather than developing one-size-fits-all policies for rural areas, policies could be targeted at particular age groups, such as young people, middle-aged people and older people (Scottish Government, 2010). Finally, ensuring that vocational and training courses are available online would allow young people to study from more remote areas in Wales, without the need to relocate to urban centres and risking them not returning when their studies end.

Retaining young people in rural areas

Young people (commonly defined as between the ages of 15 and 25 years) are particularly likely to relocate, for study or work. A Welsh survey of 1,056 people between the ages of 14 and 25 years old, found that while 75% of young people enjoy living in rural Wales, 40% (equivalent to 40,000 individuals in Wales) believe that they will have to leave Wales within the next five years, even though they would prefer to stay (Woods and Utz, 2022).

When asked about what policy changes would make them stay, the young people surveyed responded similarly to the findings outlined in the graduate retention section. They emphasised access to more appropriate types of jobs, followed by more affordable housing, wage levels and better paid jobs, and transport.

This supports evidence from other research reviewed in this section that identifies local labour market opportunities as fundamental to retaining people in a given area. The concern about finding a job locally was especially evident in respondents from Pembrokeshire (68%), Conwy (68%) and Carmarthenshire (66%). In addition to the above factors, only around one-quarter of respondents agreed that public services meet their needs or that social and cultural opportunities are “good” or “better”.

The study categorises respondents in three groups: likely stayers (who would like to continue living in their local area and do not think they will need to move away); intending leavers (who want to leave their local area, at least for a period); and potential stayers (who would prefer to continue to live in their local area but believe they will need to move away). It is worth nothing that the “potential stayers” are likely to be particularly responsive to policy interventions geared at retaining them. The report notably outlines how increasing the availability of affordable housing, improving pay levels, and expanding the variety of jobs available in rural Wales could have an impact. Improving leisure and entertainment facilities and transport access to towns and cities would also help to retain people in rural areas.

Diversifying the rural economy, for example in growing sectors such as green technology and hi-tech manufacturing, as well as promoting self-employment and entrepreneurship, could also have an impact – although such sectors and the skills they require would need to be promoted in schools and colleges. Interestingly, following the Covid-19 pandemic, which led to more opportunities for remote working, only one in ten respondents showed an interest in working remotely.

Similar findings were outlined in a 2010 review of the evidence of factors influencing rural migration decisions conducted in Scotland, which covered published work on the topic for the Scottish Government. Examining the 16-24-year-old category, the study finds similar push and pull factors to the study by Woods and Utz cited above. Key pull factors encouraging young people to move out of rural areas are the availability of high-quality jobs, affordable housing, and encouragement from friends and family. Push factors encouraging young people to stay in rural areas are the availability of higher education and employment opportunities, social and family pressure to stay, and lack of resources to move. Similarly to the Welsh study, the Scottish study summarises policy implications based on the reviewed studies on Scottish rural migration. Top of this list are the need for high quality jobs in rural areas, affordable housing options, advice and support for people moving to or returning to these areas, and encouraging return migration. A 2021 survey in the USA of 2,000 middle- and high-school youth in two rural forest-dependent communities in in Maine and Oregon also found that educational attainment was negatively related to remaining in the rural area, whereas community perception and place attachment were strong pull factors for remaining in the rural area (Bernsen et al., 2022).

Retaining workers in rural areas

There are several key factors which evidence suggests are worth considering in relation to retaining workers in rural areas. The Scottish Government review of evidence on pull and push factors for people to remain in rural areas in Scotland found that for people who are economically active, the push factors away from rural areas are a lack of high-quality jobs, a gap between pay and cost of living in the local area, and a lack of leisure facilities and opportunities to socialise (Scottish Government, 2010).

In terms of pull factors attracting economically active people to rural areas are the availability of high-quality jobs compatible with their skills, the local environment and ease of access to it, the availability of low-cost housing, and social and family connections. The factors are similar for returning migrants. In this section, we examine two areas that play a part in these push and pull factors: broadband and communications access, and housing.

Broadband and communications access

As well as facilitating remote working, access to broadband is crucial to people living in rural areas being able to connect with others and for businesses located in rural areas to be productive and competitive, all contributing to rural economic growth and population retention. A 2018 Ofcom-commissioned report found a positive relationship between broadband investment and economic growth (Ofcom, 2018). Analysing 35 OECD countries over a 15-year period, the report linked a 0.3% annual GDP increase to broadband investment. For the UK, this was equivalent to 5.3% over the 2002–2016 period covered.

Broadband speed was also important, with “[t]he contribution of broadband speed improvements to UK GDP [being] higher than the average for the OECD: the UK’s average increase of around 0.1% per annum over the period compares with the OECD average of around 0.08% per annum. Taken together, the impact on UK GDP of broadband investment and speed improvements was on average 0.47% per annum. The cumulative total was an addition of around 6.7% to UK GDP as a result of improvements in broadband networks over the period.” (ibid., 2018). Broadband is also key to ensuring people, especially young people, in remote areas can have access to education and training, which could then in turn dampen the need for people to move out of those areas towards urban centres.

Because of Wales’ topography and sparse population distribution, the cost of establishing broadband coverage is significantly higher than the UK average. Although important progress in connectivity has been made, full fibre broadband is only available to 27% of premises and 15,000 people are still without access to at least 10Mbit/s upload and download speed. Also, the cost of providing broadband for this latter group might be too prohibitive. However, there remains a gap between the availability of broadband and actual take-up, meaning that some people are unaware that they can have access to broadband and/or they do not want it. Ofcom (2021) suggests that to address this, “greater awareness of availability might help increase the take-up of services in Wales”. There are also particular challenges to providing rural broadband, such as lower population density, difficult-to-access land, more areas to cover, and a greater risk of weather conditions (UK Government, 2019).

While there appears to be limited appetite among young people to work remotely in Wales, as they may want to gain experience of face-to-face work and may be less likely to have home working space, remote working may be of greater appeal to older workers. Here, internet access is vital. An OECD analysis of Canada, France, Italy, the UK and the USA found that the Covid-19 pandemic provided an opportunity for remote working for people living in rural areas, especially for female workers whose work tends to be more conducive to remote working. However, for this to happen, the analysis stresses the need for quality and equal access to broadband (OECD, 2021). A 2022 University of Oxford study looked at remote working for digital work with 1.8 million jobs analysed between 2013 and 2020 across different countries. The study illustrates how a move to remote working actually emphasises geographical and labour divides between urban and rural areas, notably because of poor broadband connectivity in rural areas. The pre-existing lack of opportunities for this kind of work in rural areas are in fact exacerbated by the move to remote working:



People with access to specialised education, vocational training and local business opportunities – in other words urban dwellers – will be more likely to have in-demand, digital skills. They will find ample opportunities in the remote labour market. People who don't have the same access to enabling institutions – in other words, people in rural regions – tend not to have the most relevant digital skills. They will have a hard time finding good remote jobs

(University of Oxford, 2022)

Clearly, the provision of reliable and high-speed broadband connectivity is not in itself enough to enable remote working opportunities, especially in remote areas which may not have the necessary infrastructure to support people to gain the skills needed for this kind of work. Nevertheless, access to broadband is essential for living and working in different areas, including rural ones.

Housing

Another key factor determining people's choice to remain in or leave rural areas is the availability, affordability and suitability of local housing supply. Even though housing in Wales is, on average, cheaper than in England, Wales has a dearth of affordable and suitable housing. A mixture of the effect of the Right to Buy, the growth of one-person households, second homes and a growing population has led to a housing shortage in Wales. A 2015 Public Policy Institute for Wales (PPIW) report, entitled 'Future Need and Demand for Housing in Wales', estimated that there would be a need for an extra 240,000 homes over the period 2011–2031 for the whole of Wales (PPIW, 2015).

On average, over the period 2011–2022, 6000 homes were built per year, meaning that only 120,000 homes would be built by the 2031. This is half of what is projected to be necessary (StatWales, 2022).

Because of the very specific context of housing in Wales, it is important to consider some of the evidence emerging from that context. A 2021 Shelter Cymru commissioned report showed that there were over 60,000 people on social housing waiting lists in Wales, with several other thousands in overcrowded and temporary accommodation (Alma Economics, 2021). The Nationwide Foundation has, for instance, been investing over £700,000 into several projects which it argues could help deliver affordable housing for Wales. One is to pair faith groups with housing associations to develop land attached to churches for affordable housing, with 100 affordable houses being built in three years.

Another model that has now become famous in Wales and the UK is Communities Creating Homes which Cwmpas has been managing, with funding from organisations such as the Welsh Government for a £3 million pilot to test community-led housing such as Tir Cyffredin in Machynlleth. In 2019, an Independent Review of Affordable Housing Supply was conducted which made a number of recommendations to the Welsh Government (Independent Review of Affordable Housing Supply, 2019). Notably the need for regularly refreshed Local Housing Market Assessments to understand local housing need, the need for clear and simple standards for new build grant funded and S106 homes, with a requirement for EPC A or net zero carbon housing, rent increases could be based on old rationales such as value for money as well as new ones such as affordability, provide more help for local authorities to be enablers as well as builders of affordable housing such as via government grants, a new agency to help develop public land assets, and improve financing for affordable housing such as via consolidating existing funding, exploring private finance and alternative models.

There are particular challenges related to rural housing in Wales, such as the difficulty of obtaining appropriate land and site supply (for example, the lack of alignment between local earnings and house prices, notably because of in-migration driving prices up), planning policies and practices that are unresponsive to changing needs in local communities, and the availability of financing for affordable rural housing (Welsh Government, 2014).

Second-home ownership is seen as an important issue in Wales in relation to the availability of housing in rural areas. It is particularly the case in small pockets of scenic and popular rural areas. Some of the largest decreases in population in Wales since the 2011 Census have been in coastal areas, with high numbers of holiday lets and second homes such as Abersoch (-14%), Tenby South ward (-12%), and New Quay (-8%) (ONS, 2022).

While second-home ownerships can stimulate tourism and seasonal trade in an area, people are concerned that they could reduce the number of dwellings for permanent residents and push up house prices. A 2021 Welsh Government-commissioned evidence review found evidence that second homes can raise demand for houses and thus the price of local housing. However, it concluded that there is currently insufficient evidence to accurately quantify the overall impact of second-home ownership on the housing market and local communities (Welsh Government, 2021b). Published research on the topic, and our conversation with an expert on the topic, stress the need to look at wider problems that impact the availability of housing, such as a restrictive planning system that hinders house building, the growing number of people retiring to Wales, and weaknesses in the local economy. To address the second homes issue, the Welsh Government now allows local authorities to set council tax premiums up to 300% (up from 100%), as well as providing funding to bring long-term empty properties back into use (Welsh Government, 2023).

To address a specific rural area's changing housing needs, it is also useful to have an idea of potential housing solutions. A joint project carried out in 2015 by Aberystwyth University and the Wales Local Government Association (WLGA) in Montgomeryshire examined the dynamics of change in four villages. Inland areas in Wales do not tend to have issues with second-home ownership (Woods & Strub, 2015). Instead, the depopulation is a result of population shrinkage due to older generations staying and ageing in larger houses, which reduces the opportunities for other people to move or stay there, because there is not enough other appropriate housing. This study highlights the need for the provision of different types of housing, including smaller houses that make it possible for older people to downsize.

Case study: STAY(ing) Rural

A European research project called 'STAY(ing)Rural' examines why people stay in rural areas in countries such as Germany, the Netherlands and the United Kingdom. An evidence briefing produced for one of their case studies, County Tyrone in Northern Ireland, uses household survey, focus groups and interviews to elicit why people make the decision to stay in that rural area, as illustrated by the figure below (Figure below from evidence briefing, Queens University Belfast)

Clogher Valley in County Tyrone was identified as having a large proportion of stayers. The two most common reasons for people to stay were the preference to live in a rural area, and the natural landscape and quality of life, with over 4 out of 5 respondents opting for those two options. The project also examined why people stayed, with reasons such as commutable distance to regional towns and the capital city, adequate transport and communication infrastructure, villages with plenty of services, sufficient opportunities and openings for people to access the local labour market, and housing markets also being cited.

The study also highlighted obstacles to staying in this rural area, such as: limited choices and availability of employment in the local area beyond the main sectors (such as farming and retail); restrictive planning permission, which leads to a limit on new housing being built, especially outside of defined settlements (Combined with a high demand for housing, this has led to unaffordable housing prices.); the centralisation of services such as banking and health services, which may threaten the viability of rural centres; and unreliable internet access. (Staying Rural, 2022).

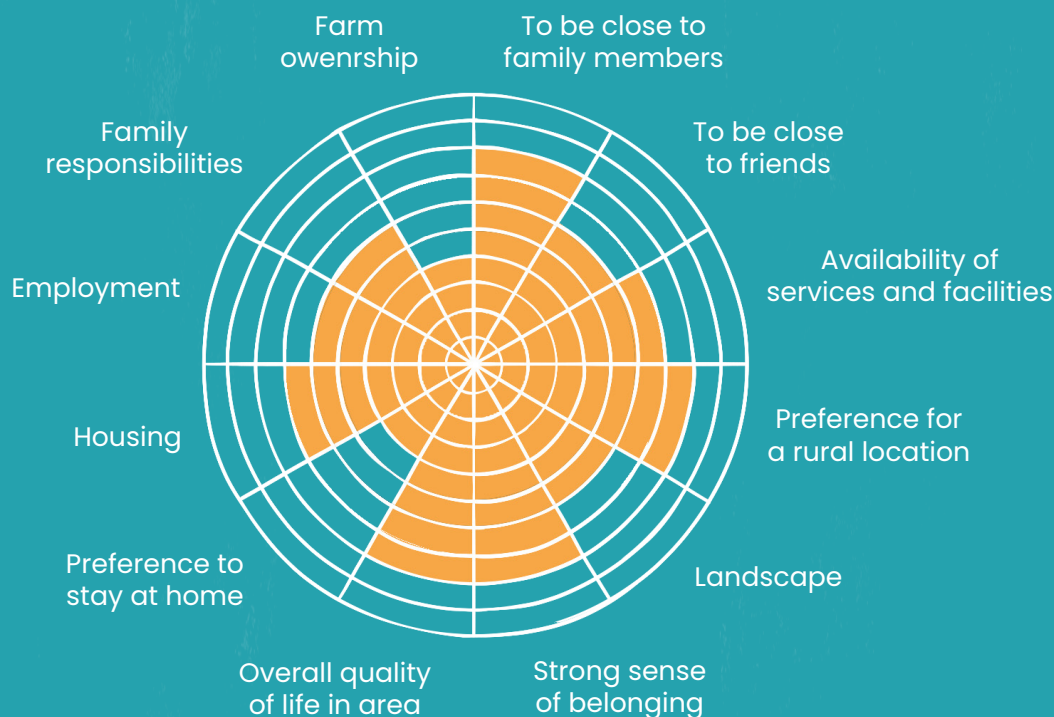


Figure 3: Infographic showing how important various factors are in determining people's decision to stay or leave the rural area of County Tyrone, Northern Ireland.

Source: Evidence briefing, Queen's University Belfast.

See Appendix 2 for a summary of initiatives reviewed on the theme of retaining people.

Retaining people who already live in Wales will be a key way for the Welsh Government to mitigate the effects of population ageing and decline, especially retaining young people. As immigration policy is a reserved matter for the UK Government, the Welsh Government's ability to act in that policy area is limited.

This makes the need to retain people currently living in Wales even greater.

As well as boosting the population by targeting fertility and retention of people in Wales, the Welsh Government can also seek to attract people from outside of Wales to come and work and live in Wales. This is the subject of the final section.





Section 3: Attracting people



Attracting people

Key Messages

- » **As with retaining people, the evidence base for policies related to attracting immigrants is not strong, with no systematic reviews, evaluations or randomised controlled trials to support the interventions that we list. Instead, the evidence base is constituted of single non-experimental studies and individual uses of a same policy tool. Again, this does not mean that these policies are ineffective, but rather that we don't know whether they are effective or not.**
- » **In areas where depopulation is combined with significant ageing, inward migration sometimes presents the only means to rapidly increase the working-age population.**
- » **Policies to attract people need to be based on an understanding of the characteristics and needs of a particular geography and community, along with an understanding of the motivations and needs of the group of people whom an area is seeking to attract.**
- » **Policy-makers must reflect on what the primary purpose of an attraction policy is: whether it is focused on the economy and/or on the community will imply a different logic and policy solution, though the full range of well-being goals could be considered. Ultimately, national and community well-being, rather than demographic or economic growth, could be the outcomes of interest.**
- » **Local authorities can play a key role in rolling out policies to attract people to their areas. These can include: relocation grants and incentives, such as empty properties and land, as in Scotland, Ireland and the United States; and putting in place strong pull factors, such as public services, leisure opportunities and "experience economies", such as in Denmark.**
- » **Core infrastructure – such as housing, transport and broadband connectivity – is also necessary to enable relocation.**
- » **Successful approaches in determining what and whom the local area and economy needs in devising repopulation or visa schemes (as in Scotland and Canada) frequently involve multiple local stakeholders, including local employers and the local community.**

Attracting people

Introduction

Attracting people via inward migration is one of the key policy levers the Welsh Government has at its disposal to boost the Welsh population and possibly to shift its skills composition. As Professor Rebecca Kay points out in her think piece for WCPP: while retaining existing residents is of course also key, in areas where depopulation is combined with significant ageing, migration is sometimes the only means to rapidly increase the working-age population (Kay, 2023). Although immigration policy is a function of the UK government, the Welsh Government plays an important role in the delivery of immigration policy, in ways that can affect whether people choose to move to Wales and for how long.

Between April 2011 and March 2021, the only reason that the population of Wales grew was due to positive net migration of around 55,000 usual residents (Welsh Government, 2022c). These migrants come from within as well as from beyond the UK. Every year, on average one million people choose to make a significant geographic move from one part of England and Wales to another (Swinney and Williams, 2016). There is no legal limit to movement within the UK so Wales can potentially attract more of these people.

In 2019, 6,921 people left London for Wales, whereas 7,196 people moved from Wales to London. This represents the highest number of people moving to London from Wales based on the years of available data (ONS, 2022). While the number of residents in Wales born outside of the UK has increased by 28.3% since the 2011 census, in England the number of residents born outside the UK has increased by 33.6% (Welsh Government, 2022c).

This suggests that there is scope for Wales to attract more immigrants to the UK to settle in Wales.

In devising policies to attract people to Wales, it is also important to consider the ways in which the policy goals of a thriving Welsh language may interact with immigration dynamics. Rural areas most at risk of depopulation are often the areas with a high proportion of Welsh speakers, so policies to support and enable Welsh language learning are necessary.

Some countries and regions have been particularly successful in attracting people to come and live and work. Since 2020, a number of countries have put in place financial incentives for individuals and businesses to relocate to depopulated (often rural) areas, such as Italy, Australia and the United States (World Economic Forum, 2022). Different policies have been adopted to attract people, which focus on different groups of people, such as workers, refugees, families, and graduates and students. Some schemes have prioritised streamlining the bureaucracy for people settling in a new country or region, such as the visa process, others on marketing campaigns and talent attraction programmes to target specific groups of people.

This section looks at repopulation projects in Scotland, some regions in Europe, and Japan. It then goes on to discuss different visa programmes, followed by an exploration of some dedicated programmes for attracting people.

Attracting people

Repopulation projects

A first approach to attracting people that we examine is specific to repopulating areas that are at risk of, or already experiencing, depopulation, such as Wales. For instance, an audit report commissioned by Powys County Council in 2019 found that the county was losing on average 1,000 people per year to outward migration (County Times, 2021).

Below, we explore the way Scotland, some regions in Europe, and Japan have approached repopulation.

Scotland

Even more than Wales, Scotland is susceptible to depopulation, especially in rural and remote areas, such as the Highlands and the Islands. Scotland and its regions have developed different policy tools to address this.

Overall, Scotland has benefited from inward migration of people from the rest of the UK. Scotland's Expert Advisory Group on Migration and Population has released a report examining these internal flows and their relevance to Scotland (Scottish Government, 2020). It notably examines the measures taken by Scottish local authorities for impacting within-UK migration, such as policies addressing the issue of empty homes, or encouraging new families or businesses to move to their local area. The report finds that, in the last 20 years, Scotland has benefited from a positive inflow of about 20,000 migrants per year from the rest of UK. Most are between the ages of 18 and 29 years and tend to have higher qualifications than those already living in Scotland. In spite of this, some local areas are at risk of losing population, especially young people who are attracted to bigger towns and cities.

Three main strategies for attracting people to areas facing depopulation are: financial grants, empty properties, and crofting.

Financial grants

Scotland's Argyll and Bute Rural Resettlement Fund made three specific grants available to encourage economically active young people and their families to take up employment in the region and to encourage the growth of small and medium enterprises (SMEs) (Glass et al., 2020). Allocated money included a £5000 personal relocation grant, a £5000 self-employment grant, and a £10000 business relocation grant. In the 18-months that the scheme was running, between October 2016 and May 2018, there were 79 successful applicants, resulting in a total of 193 new residents (including 56 children), and net employment gains of 74.61 full-time equivalent jobs in Argyll and Bute. This does not include jobs acquired by the partners or family members of applicants, so it is possible that the figure is higher in real terms. There was poor uptake of the business relocation grants, with very few enquiries and no applications progressed.

As it was largely seen as a success, the fund was relaunched in 2021, but with different emphases. The fund now comprises £25 million each from the Scottish and UK governments, and at least £20 million from Argyll and Bute Council and partners. This will be used to create opportunities for people living in the region and attract further investment. Key focus areas include aquaculture, tourism, housing, digital connectivity and skills for a rural economy. The 2021 scheme is yet to be evaluated.

Empty properties

Another repopulation project sought to attract people to Orkney, a remote area of Scotland. The focus was on filling empty properties (a similar approach to Japan, which is discussed below). The Orkney Gateway Homes project saw the creation of an Empty Homes Officer with a Property Matchmaker Scheme, designed to attract citizens to the small island community (Glass et al., 2020).

Empty Homes Officers, supported by the Partnership, have reported that 1,152 empty properties have been brought back into use. This compares to 851 homes coming back into use for 2020 and 1412 in 2019 (Scottish Empty Homes Partnership, 2021).

Crofting

Scotland has also made a concerted effort to revitalise the Scottish tradition of crofting, a system of landholding that is a mixture of small-scale land tenure and food production, which is unique to the Highlands and the Islands. The Crofting Commission was created in 2012 in response to a rapid decline in the tradition due to depopulation and relocation to urban areas. The Commission supports people to occupy and manage crofts, either as landowners or as tenants, through skills and training support to allow landowners to comply with the rights and responsibilities of croft ownership. This was supplemented by Scottish Government interventions such as good broadband access to facilitate remote working, good transport links, and infrastructure. As of 2023, there are just over 20,500 crofts registered with the Crofting Commission, according to the Register of Crofts (Crofting Commission, 2022). Although crofting is a model particular to Scotland, the Welsh Government could consider whether a similar model of encouraging and enabling people to take up small-scale land tenure and food production in rural areas could be viable.

European regions

A multi-faceted approach to rural repopulation is explored in several other communities in Europe. It is widely agreed that citizens require both support to relocate to rural areas as well as strong infrastructure – such as affordable housing, good transport links, access to schools and hospitals, and the digital infrastructure to support remote working or entrepreneurship. For example, in Denmark, the community of Friederikshavn developed its offer of an ‘experience economy’, to incentivise relocation to this area, and implemented a Settlement Service, to enable settlement here. The local economy was revitalised by the establishment of ‘experience economy,’ with offerings such as festivals, cultural events, and tourist attractions. This was followed by a Settlement Service that offered housing and job opportunities to people moving to the area, including language-learning opportunities for non-naturalised citizens. An academic review of the initial experience economy scheme found it to be a positive way of supplementing a largely service-based economy (Therkildsen et al., 2009). Subsequent reviews do not provide detailed statistics, but local government figures claim that between 2012 and 2019 the settlement service saw an 82% increase in population. (It should be noted that the impact of Covid-19 on the programme is not yet known.) A similar venture is being implemented in the remote Faroe Islands. This is the Vágur experience economy, which is based on tourism, adventure activities and sports. No evaluation evidence is available (Glass et al., 2020).

As mentioned above, the importance of digital infrastructure is emphasised in several initiatives focused on attracting people to remote areas. In Ireland, the Arranmore Offshore Digital Hub is an offshore digital hub that provides shared workspace with good broadband connectivity for residents and visitors to the island.

This makes it an affordable and available space for entrepreneurs and remote workers, as well as for local residents (Glass et al., 2020). In Canada, the Fogo Island Inn and the Shorefast Foundation is a social enterprise that supports local communities to create employment opportunities in a post-industrial community in Newfoundland. Residents and settlers are provided with the infrastructure and support to create their own economic activities, making the space available for people who wish to relocate (Glass et al., 2020).

Japan

Japan's approach to attracting people has shifted from an emphasis on infrastructure investments to a "softer" approach that includes tourism-led and culture-based projects building on local resources. However, more recently, questions have been raised about how desirable the revitalisation of some or all depopulated areas is in the context of a net zero agenda. This is why the trends of population ageing and decline need to be considered as part of a broad well-being agenda.

A review of Japan's approach to island depopulation by the Scottish Government (2022a) identified several key policy approaches. These include initiatives to: provide support for people settling in island communities; encourage those who regularly visit island communities to contribute more to their sustainability and vibrancy; make empty buildings available for re-use; develop teleworking and "parallel work" opportunities; and launch education-focused programmes to encourage more young people to remain in island communities for their education.

The review concludes by highlighting the following learning points for Scotland, many of which are likely to be relevant to the Welsh context:

- Acknowledging the importance and diversity of the islands [or areas of focus];

- Understanding the demographic contexts and trends in the islands [or areas of focus];
- Ensuring clarity about the goals of demographic-focused policy interventions;
- Designing a flexible policy framework to allow for locally tailored solutions;
- Taking a holistic approach that combines "hard" solutions such as infrastructure and digital connectivity with "softer" initiatives, such as community-led medical care projects;
- Engaging with local communities to co-produce initiatives;
- Combining initiatives for retain and returning young people with celebrating ageing and the elderly;
- Building on the shifts in values, lifestyles and practical work and living preferences that emerged during the Covid-19 pandemic;
- Using islands appropriately as test-beds for innovative policy responses;
- Recognising and building on the resources and positive benefits of depopulated/depopulating areas;
- Providing a range of support for in-migrants, such as stipends to encourage newcomers to participate in activities linked to the local history, culture and nature; and
- Incorporating renewable energy and digital investment considerations into demographic initiatives.

While some of these recommendations are less applicable to non-island life, or would need to be adapted, most of them are likely to be applicable to policies designed to attract people to Wales.

Attracting people

Visas

Making visas easy to apply for and obtain, and implementing visa schemes targeted at particular groups of people, is another tool that countries and regions have deployed to attracting people to relocate. However, as mentioned above, immigration and the issuing of visas are reserved matters for the UK Government, so the Welsh Government cannot make decisions at this level.

Some regions that are not as popular with newcomers to a country have sought to apply innovative approaches for how they can evaluate their characteristics and attribute as well as welcome them.

An initiative in Canada illustrates this. In 2019, the Canadian Federal Government launched the Rural and Northern Immigration Pilot (RNIP) (Hagar, 2021). The pilot project aimed to provide local communities with a greater voice in immigration matters by allowing them to select newcomers. Eleven communities were recruited across Ontario and Western Canada. This was to counter the trend of half of newcomers to Canada settling in the major cities, such as Toronto, Vancouver or Montreal. This programme was the first in Canada that sought to address rural immigration shortages. The programme notably includes 'matching' a newcomer with an established member of the local community who will act as a mentor. There is also a dedicated officer who can provide the community with any information about the RNIP and support in establishing the scheme. Unlike other schemes, the RNIP allows communities to target the occupations that they would like to see more of in their local area and identify the necessary attributes of people fulfilling these roles.

The communities assess newcomers themselves, selecting members of local economic development organisation to form a panel. While some aspects of this programme would be beyond the competence of the Welsh Government, most notably around issuing visas, others – such as offering support to newcomers would be possible. Where policies are reserved, there is potential for the Welsh Government to lobby the UK government for policy change or for expanded powers.

Scotland has taken a similar approach in the way it has devised its Rural Visa Pilot Scheme, which was announced in 2022, and is being considered by the UK Government. The scheme would represent a new community-driven approach to local migration, based on the following characteristics (Scottish Government, 2022b):

- The scheme would allow rural and remote communities to attract migrants in line with their distinct needs.
- Participating employer-sponsors within designated geographic areas, referred to as community pilot areas, would advertise vacancies (using bespoke entry criteria).
- Employers and communities would then be able to assess prospective candidates, before recommending chosen candidates to the Home Office for final approval and security checks.
- Once a decision is approved, community partners – including employers, local statutory, and third-sector services – would offer a package of integrated settlement support services for newcomers.

- Participating employers, in collaboration with Scottish Government and UK Government organisations, would also be responsible for ensuring that terms and conditions of the scheme continued to be met.

An advantage of this community-driven approach is that it is intended to take into account the full range of assets and needs of a particular community, which extend beyond the goals of economic and demographic growth to include broader community well-being. The scheme provides some interesting insights into how devolved governments could potentially be proactive in a sphere which is a reserved matter for the UK government. If the Scottish Rural Visa Pilot is approved by the UK Government, similar initiatives could be explored in Wales.

The Immigration Health Surcharge (IHS) was introduced by the UK Government in 2015 and is payable by persons subject to immigration control who apply for a visa to enter the UK for more than six months or who apply to remain in a temporary capacity. Payment of this surcharge is mandatory and entitles the payer to access NHS services and is an integral part of the visa application. Some visa applicants are either exempt from the surcharge or pay a reduced fee e.g. students.

The IHS has seen a series of rate increases since its introduction in 2015 (see Table 2). In July 2023, the UK Government announced that after a three year freeze, the main rate of the surcharge is planned to increase again, jumping from £624 to £1035 per person in January 2024, which is a 66% increase. It has been asserted that the surcharge will help to fund a pay rise for doctors (UK Parliament, 2023), but others have criticised the rise, arguing that it will have direct ramifications on the UK economy as the surcharge, alongside application fees, diminishes the UK's appeal to foreign workers, including those from high skilled sectors (Grove, 2023).

Table 2: Increase to the Immigration Health Surcharge rate by year and cost

Immigration Health Surcharge (IHS) by year of introduced increase	Cost per person (without exemption)
2015	£200
2018	£400
2020	£624
2024 (announced)	£1035

A recent report by Wales Fiscal Analysis concludes that the surcharge poses a barrier to recruitment of inward migrants to priority sectors (2023). It recommends that while the Welsh Government can't remove or reduce the IHS, which is the purview of the UK Government, it could choose to return IHS funds to immigrants as an incentive to move to Wales.



Attracting people

Attraction programmes

Other countries and regions have sought to attract people through marketing campaigns and attraction programmes. These initiatives might be of interest to the Welsh Government as they do not require control over immigration but rely instead on building a 'brand' for the country or region that acts as the attraction point for potential migrants.

Some programmes have sought to attract skilled workers, including for within-country migration, through talent attraction programmes such as Scotland's 'Fresh Talent' initiative (Houston et al., 2008). Houston et al. argue that such place-marketing campaigns should be focused on the city rather than the national level, as a country focus can be too broad to provide a clear brand or specific "hook". These initiatives should be focused on attracting people with the potential to set up businesses and who can contribute to the development of key growth sectors (Ibid.). Jonathan Portes (n.d.) also points out that while focusing on *attracting* skilled workers seems like a logical option, there is also the need to focus on retaining those that have been attracted by improving connectivity (transport and digital) to allow those people to remain and often work remotely.

Another means of attracting people is to offer funding and help with visas and other bureaucratic processes to bring new entrepreneurs and start-ups to a country. A 2023 OECD report reviewed how different countries have put in place financial and other support to achieve this (2023).

This help can take the shape of helping entrepreneurs to navigate the visa application system, helping them navigate the process of creating a new business (which varies from country to country), and providing financial support to enable those businesses to begin trading. Canada was at the top of all OECD countries in providing a supportive environment for attracting start-ups, with France also highly ranked with access to funding attached to the start-up visa and a long period for start-up owners to develop their idea before they need to reapply for a visa. In contrast, Japan and Israel were ranked poorly due to stringent visa systems for start-up owners and their families, including when it comes to applying for permanent residency.

Some regions have sought to attract particular groups of people, such as remote workers, through programmes including the provision of relocation fees and access to hot desking facilities. The policy rationale is that these remote workers will contribute to the local economy. Two of the longest-standing remote worker attraction programmes in the USA – in Vermont and Tulsa, Oklahoma. Both programmes attracted above-average earners and have been evaluated as being effective in attracting and generating net economic gains at low cost (Smart Incentives, 2022). In the first round of the Vermont scheme in 2018, \$500,000 was allocated for the provision of grants to 140 applicants, at an average of \$3,751 each. The aggregate household income of the 140 applicants was estimated at \$16.5 million, exceeding the state average. (The same was observed in Tulsa).

Based on the modelling developed by Smart Incentives, 65 jobs were created in addition to the remote workers, and an annual economic output of \$9.5 million was estimated from the scheme. The Tulsa scheme, which started in 2018, allocates individual grants of \$10,000 as well as help with resettlement, co-working space membership, and access to networking events. By the end of 2021, 1,200 workers had relocated to Tulsa. Based on a survey of the 394 remote workers who resettled in Tulsa in 2021, they were said to account for \$51.3 million in income, with a total impact of 592 full-time equivalent jobs and \$62 million in new local earnings. This means that every dollar spent on the programme yielded \$13.77 in new labour income for Tulsa. It was observed across the two schemes that the remote workers were younger than average in-state migrants and the vast majority held bachelor degrees. Retention rates were of 87.5% for the Tulsa scheme and 97% for the Vermont scheme.

Some governments have also focused on public sector pay and providing financial incentives for public servants to relocate to remote areas. NHS England for instance offers up to £20,000 for GPs to relocate to areas where there aren't enough GPs (NHS England, 2023). Beyond a statement by the NHS that this scheme had been successful, we did not find independent evidence that such a framework offers value for money. A report by the Nuffield Trust suggests that there aren't clear evaluations of these schemes in the UK or the US, be that premia schemes for healthcare workers or other public sector workers such as teachers (Rolewicz and Palmer, 2022). Further evaluations are needed to establish whether these schemes attract people, whether they change intended behaviours, and whether pay incentives are sufficient in and of themselves to attract workers to remote or other areas.

Scotland's Expert Advisory Group on Migration and Population examines how immigration systems in various countries can be used to offset demographic challenges, such as population ageing and decline. Looking at Australia, Canada, Spain and Sweden, it concludes that four factors are key in setting up effective inward immigration systems:

- the importance of a job offer to promote settlement and integration in the market;
- how systems manage the transition from a restrictive system for individual migrants to more rights and autonomy (such as job mobility and the right to settle);
- encouraging settlement, for instance by weighting selection criteria to those most likely to stay in the region; and
- working with employers and local communities to develop a support package to promote settlement. (Scottish Government, 2019)

The evidence reviewed therefore suggests that attraction programmes need to ensure sufficient incentives are in place to attract people to move to an area (for example through job prospects), the infrastructure in place to support settling (such as housing and connectivity), as well as the knowledge of a place amongst potential migrants (through effective place-marketing).

In summarising the evidence reviewed in this section on attracting people, the OECD Migration Policy Debates paper (2019) provides a comprehensive review of efforts by OECD countries to attract skilled workers and the management of highly skilled migration (OECD, 2009). The results are reported in Table 3. Australia, Canada and the Netherlands are the schemes that look the most effective.

Table 3: Comparison of skilled workers attraction programmes

Country	Policy Background	Strategy	Outcome and issues to monitor
Australia	Immigration as element of overall development strategy with target entry levels Immigration to meet skills shortages	Selection of higher skilled immigrants and their spouses for permanent migration Facilitation for international students	Targets met Some questions of language skills for international students
Canada	Immigration as element of overall development strategy with target entry levels Immigration to meet skills shortages	Selection of higher skilled immigrants and their spouses for permanent migration Facilitation for international students	Targets met Some problems with overskilling of those who arrive without a job
Czech Republic	Facilitate employment of high skilled foreigners by Czech employers	Accelerate access to permanent residence for highly qualified foreign workers	Most beneficiaries are already in Czech Republic Flows less than hoped
France	Protect native workers while meeting employer needs Increase 'economic migration'	Strict labour market test and occupation list	Limited immigration
Germany	Limit immigration while allowing high skilled to enter Compete with other destinations for the highest skilled	Permanent residence for high skilled and high paid foreigners Strict conditions for others Some possibility for former students	Limited immigration, mostly change of status of students and others Flows fall short of expectations
Japan	Accept high skilled migration while maintaining limit on low skilled immigration	Strict definition of skilled positions Allow foreign students to seek work	Little high skill migration despite openness Some students remain for employment

Country	Policy Background	Strategy	Outcome and issues to monitor
Netherlands	Reduce immigration by people with few skills and little Dutch language	Exemptions from strict language and labour market tests for high skill, high salary	Satisfactory use of high skill permit, meets expectations Some employers still use standard work permit
Norway	Protect native workers while meeting employer needs Free movement supposed to meet many labour needs	Quotas for most high skilled categories Job offer essential	Quota undersubscribed
United Kingdom	Rely on free movement as much as possible Allow highest skilled to enter while limiting immigration of less skilled	Points system for migration by highest skilled; no quota Shortage list for high skilled employees sought Access for international students	New system yet to be evaluated
United States	Protect native workers while meeting employer needs Prevent low-skilled immigration and limit immigration in general	Quotas for most high skilled categories Job offer essential Large temporary programme Little facilitation for international students	Programmes oversubscribed with long waiting lists Recourse to alternative visas (exchange, IC transfers, etc.)

Source: OECD, 2009

The studies examined in this section cover a variety of initiatives to attract people from different countries and regions, with varying degrees of success. According to the group of people that an area is trying to attract, different strategies can be considered. Overall, developing a detailed understanding of the particular demographic and population challenges faced by an area could be the first step in devising a strategy to attract people. For example, is it a particular age group that is declining or people with a particular skill set?

Once the issue is understood, then policy tools such as marketing campaigns, remote worker attraction programmes and other initiatives can be developed and implemented. There is still research being developed on the impact of the Covid-19 pandemic on rural migration movements, with countries such as Canada, Spain and Sweden being examined. These might yield useful information for Wales in the future.

See Appendix 3 for a summary of initiatives reviewed on the theme of attracting people.



Conclusion

Population ageing and decline have become crucial issues in a growing number of countries, and increasingly in Wales. Wales is at a high risk of population ageing and decline, with deaths exceeding births since 2011 and most population growth being among the over 65s. Population ageing and decline present a range of risks to the Welsh economy by potentially leading to a shrinking workforce and tax base, and a reduced block grant from the UK government. At the same time, it pushes up demand for health and social care services. Wales also has specific pre-existing challenges, such as a low-productivity, low-growth and low-skill economy compared to most other areas in the UK. This could be compounded by population ageing and decline. Certain areas of Wales, such as Ceredigion and Gwyneth, are at particular risk of depopulation and ageing, with consequences for their local economy and ability to attract or retain economically active people and young people.

In this report we have primarily focused on international policy responses to population ageing and decline from an economic perspective, with the goal of increasing the size of the working-age population through: fertility, population retention and attraction of inward migrants.

The evidence base is growing but variable across these three dimensions, with some strong evidence of 'what works' to draw on in relation to fertility, but less so in relation to retention and attraction. Part of the reason for this is the methodological challenges of designing and conducting robust evaluations over long periods of time, when the policy contexts of most countries make it difficult to isolate the 'cause and effect' of any one particular intervention or programme. As population ageing and decline continue to become more of a policy focus for an increasing number of countries, it is likely that the evidence base will grow. Because of the weakness of the evidence in relation to policies to retain and attract people, if the Welsh Government were to choose to develop a policy intervention in either area, small scale pilots and evaluations would likely be necessary.

There is nevertheless a range of effective international policy approaches to population ageing and decline, which are well-evidenced, and which could be implemented or built upon in Wales. In terms of fertility, for example, there is strong evidence to suggest that pro-family policies such as more generous childcare and parental leave policies are associated with increased fertility, to the extent that this could help countries with low fertility to increase fertility to the replacement rate.

There is significant scope for expanding childcare and parental leave in Wales (and the UK), not least because this is likely to have the additional benefit of enabling greater workforce participation amongst parents. Comparative European evidence suggests that there is also some scope to enhance access to assistive reproductive technology in Wales. This would also support people's human right to choose whether or not to have children. There is also some growing evidence about the detrimental impact of air pollution and "forever chemicals" so efforts to address these issues could have a long-term positive effect on fertility, though there is less evidence about what policy interventions are likely to "work". What is clear from international country examples is that a mix of strategic and mutually supportive policies is likely to be most effective, which encourage and enable fertility and parental leave, while also enabling parents to return to work through access to affordable childcare.

The evidence for international policy responses related to population retention and attracting immigrants is more mixed, although there are some useful insights which can be drawn out of the evidence base. Many of the key factors which are likely to determine population retention are those that will also determine inward migration decisions, such as work, education and training opportunities, access to high quality public services, housing, and digital and transport connectivity.

Different groups are likely to prioritise these push and pull factors to varying extents, although working-age people repeatedly cite job opportunities as paramount.

Evidence related to retention and attraction also highlighted *how* policies in this space should best be designed and implemented. In particular, international efforts to retain and attract people revealed the need for a *collaborative* effort between the various stakeholders that play a role in retaining and/or attracting people, for instance universities working with policy-makers and employers to retain graduates; or policy-makers at different levels working with employers, local governments and public service providers to target population decline in rural areas; combined with a joined-up strategy (Crow, 2010). Evidence also highlighted the value of governments and other institutional actors working in collaboration with citizens to understand the issues and collaboratively develop solutions, for example by working with graduates to understand what would enable them to remain, or by working with local communities to build on a close understanding of the local dynamics of change and needs of the local economy when designing retention or attraction policies.

Across retaining and attracting people, the importance of connecting and aligning national and local policy and practice were emphasised.

Evidence reviewed in relation to all three areas – fertility, retention and attraction – also emphasised the importance of considering policy mixes, both because single policies are unlikely to achieve the desired overarching change, but also because policies need to be designed and implemented in ways which are mutually reinforcing and supportive, rather than undermining. For instance, in relation to fertility, childcare, parental leave and financial incentives such as ‘baby bonuses’ need to be designed and implemented in mutually supportive ways which are based on knowledge of what parents need and want, and what will work in the Welsh context. In terms of retention and attraction, focusing on single issues, such as second homes or broadband, will be unlikely to create the necessary conditions for demographic growth. On the other hand, if the right combination of social, economic, and cultural conditions can be created, then Wales and its communities have the opportunity to create positive spiral effects in which increased fertility, retention and inward migration contribute to the community well-being of everyone.

While some interventions reviewed in this report, such as granting visas or citizenship to international immigrants, are beyond the scope of what the Welsh Government has power to do, the vast majority of the interventions are within the competence of the Welsh Government.

Even with immigration, whilst decisions over overarching quotas and entry requirements are reserved to the UK government, the Welsh Government does have control over some of the mechanisms which encourage (or discourage) people to move to Wales from the rest of the UK, such as attraction and settlement programmes, housing, public services, transport and connectivity. In addition, the effective international policies identified in relation to fertility are all within the competence of the Welsh Government, albeit in many cases the Welsh treasury would need to find the resources required to realise these.

While this report has focused on ways of addressing the economic and fiscal risks of population ageing and decline, these are not purely economic phenomena; population ageing and decline also pose risks to the social and cultural fabric of many Welsh communities, especially in rural areas. Evidence from other countries highlights the “negative spiral effects” which can emerge when communities age and decline; when people and businesses leave an area it can become increasingly difficult to either retain existing residents, attract potential newcomers or to create an environment in which it is possible or desirable to have children (Scottish Government, 2021b). Behind these policy concerns, are the human dimensions of people who feel they are unable to remain in or move to the community they’d ideally want to, and too many people who are unable to have the number of children they want.

Policy-making could consider the full range of well-being goals that could be affected by interventions in this area. While policies to increase the size of the population – such as talent attraction programmes – could enhance local and national economic prosperity, they could have unintended negative consequences for other well-being goals, such as global responsibility, Welsh culture and language and community cohesiveness. We suggest that national and community well-being, rather than demographic or economic growth, could be the key outcomes and measures of success. One advantage of developing a national population strategy, as has been developed in Scotland, is that it provides an impetus and ‘vehicle’ through which to consider this issue from a wider range of policy perspectives. The Scottish strategy sets out a programme of work to address its population challenges and harness new opportunities.

When considering demographic shifts, it’s also important to recognise and capitalise upon the opportunities, as well as risks, as explored in Scotland’s population strategy, that population ageing and decline may bring. Population decline could translate into lower carbon emissions, reduced resource consumption and reduced house prices, and older people bring with them a wide range of talents, assets and skills. For instance, we know that older people are likely to provide financial and care assistance to their wider families, as well as, on average, be more likely to volunteer in their local communities (Harper, 2022; Welsh Government, 2020a).

A thorough analysis of the risks and opportunities that population ageing and decline in Wales are likely to present, including for different groups and areas, would help to inform policy consideration and design in this area.

Wales itself also has some strengths and potential opportunities which can be capitalised upon as part of its response to population ageing and decline. Notably, its low population density, natural environment and distinct culture and history could be mobilised to emphasise the greater quality of life and well-being that people can enjoy in Wales in contrast to other places such as England. Furthermore, the shift towards remote working (WCPP, 2021) could mean that Wales is well placed to benefit from high-skilled workers relocating, especially as Wales house prices remain low in contrast to other UK areas (Portes, n.d.).

Population ageing and decline are long-term, multi-causal and complex demographic changes which an increasing number of governments around the world are seeking to address, with varying levels of success. Nevertheless, the evidence reviewed here has shown that there are concrete steps which the Welsh Government can take to enhance the extent to which Welsh communities are places in which people want and are able to have children, remain in, and are attractive destinations for migration.

References

Alma Economics (2021). **The right to adequate housing in Wales: The evidence base**. Available at: sheltercymru.org.uk/wp-content/uploads/2022/01/Alma-Economics-Back-the-Bill-Phase-1-Full-Report.pdf

Bauernschuster, S., Hener, T. and Rainer, H. (2014) **Children of a (policy) revolution: The introduction of universal child care and its effect on fertility**. CESifo Working Paper, No. 4776, Center for Economic Studies and ifo Institute (CESifo). Munich. Available at: www.cesifo.org/en/publications/2014/working-paper/children-policy-revolution-introduction-universal-child-care-and.

BBC (2018) **IVF: NHS couples 'face social rationing'**. BBC News. 20 Jul. Available at: www.bbc.com/news/uk-england-44884503

BBC (2019). **The doctor trying to solve the mystery of male infertility**. BBC News. 29 Oct. Available at: www.bbc.com/news/uk-scotland-tayside-central-50180235

Bergsvik, J., Fauske, A. and Kaldager Hart, R. (2021) 'Can policies stall the fertility fall? A systematic review of the (quasi-) experimental literature', **Population and Development Review**, 47(4): 913-964. doi: doi.org/10.1111/padr.12431

Bernsen, N.R., Crandall, M.S., Leahy, J.E., Abrams, J.B. and Colocousis, C.R. (2022). 'Do rural youth want to stay rural? Influences on residential aspirations of youth in forest-located communities.' **Community Development**, pp.1-19. doi: doi.org/10.1080/1575330.2021.1998170.

Bevan Foundation. (2005). **A childcare revolution in Wales**. Available at: www.bevanfoundation.org/resources/a-childcare-revolution-in-wales/

Bissonnette F, Phillips S, Sampalis J, Dahdouh EM, St-Michel P, Buckett W, Kadoch IJ, Mahutte N. (2019). 'Impact of government health coverage for ART: The results of a 5-year experience in Quebec'. **Reproductive Biomedicine and Society Online**, 16(8): 32-37. doi: [10.1016/j.rbms.2019.01.002](https://doi.org/10.1016/j.rbms.2019.01.002).

Brandt, N. (2018). **The "family 500+" child allowance and female labour supply in Poland**. Available at: ibs.org.pl/app/uploads/2018/03/IBS_Working_Paper_01_2018.pdf

Brough, M. and Sheppard, P. (2022). 'Fertility Decision-Making in the UK: Insights from a Qualitative Study among British Men and Women'. **Social Sciences**. 11(9):409. doi: doi.org/10.3390/socsci11090409

Bucelli, I. and Mcknight, A. (2022). **Poverty and social exclusion: review of international evidence on early childhood education and care**. Available at: www.wcppp.org.uk/wp-content/uploads/2022/09/211021-WCPPP-Poverty-Review-Early-childhood-education-and-care.pdf.

Cardiff Public Service Board (2017), **Cardiff Liveable City Report**. Available at: www.cardiffpartnership.co.uk/wp-content/uploads/2020/12/LCR-2017-English-Final.pdf

Carré, J., Gatimel, N., Moreau, J., Parinaud, J. and Léandri, R. (2017). 'Does air pollution play a role in infertility?: a systematic review'. **Environmental Health**, 16(1). doi: doi.org/10.1186/s12940-017-0291-8.

Centre for Cities. (2016). **The Great British brain drain: where graduates move and why**. Available at: www.centreforcities.org/publication/great-british-brain-drain-where-graduates-move-and-why/

Centre for Cities. (2019). **What lies behind Glasgow's graduate retention success story?** Available at: www.centreforcities.org/blog/what-lies-behind-glasgows-graduate-retention-success-story/

Centre for Public Impact (2017). **Tackling the declining birth rate in Japan.** Available at: www.centreforpublicimpact.org/case-study/tackling-declining-birth-rate-japan

Cilluffo, A. and Ruiz, N. (2019). **World population growth is expected to nearly stop by 2100.** Pew Research Center. Available at: www.pewresearch.org/fact-tank/2019/06/17/worlds-population-is-projected-to-nearly-stop-growing-by-the-end-of-the-century/.

Clark, R.L., Ogawa, N., Kondo, M. and Matsukura, R. (2010). 'Population decline, labor force stability, and the future of the Japanese Economy.' **European Journal of Population / Revue européenne de Démographie**, 26(2), pp.207–227. doi: doi.org/10.1007/s10680-009-9179-9.

Clean Air Fund (2022). **The pathway to healthy air in the UK.** Available at: s40026.pcdn.co/wp-content/uploads/The-Pathway-to-Healthy-Air-in-the-UK.pdf.

CNN (2019). **Inside the Japanese town that pays cash for kids.** Available at: edition.cnn.com/2018/12/27/health/japan-fertility-birth-rate-children-intl/index.html.

Cohen, N.J., Yao, M., Midya, V., India-Aldana, S., Mouzica, T., Andra, S.S., Narasimhan, S., Meher, A.K., Arora, M., Chan, J.K.Y., Chan, S.-Y., Loy, S.L., Minguez-Alarcon, L., Oulhote, Y., Huang, J. and Valvi, D. (2023). 'Exposure to perfluoroalkyl substances and women's fertility outcomes in a Singaporean population-based preconception cohort.' **Science of The Total Environment**, 873, p.162267. doi: doi.org/10.1016/j.scitotenv.2023.162267.

County Times (2021) **Rural depopulation 'one of the greatest threats' facing mid Wales.** Available at: www.countytimes.co.uk/news/19267252.rural-depopulation-one-greatest-threats-facing-mid-wales

Crofting Commission (2022). **Crofting Commission Annual Report and Accounts 2021 / 2022.** Available at: crofting.scotland.gov.uk/userfiles/file/annual_report_and_accounts/crofting-commission-annual-report-2021-22-english-gaelic.pdf

Crow, H. (2010). **Factors influencing rural migration decisions in Scotland: An analysis of the evidence.** Scottish Government Social Research. www.gov.scot/publications/factors-influencing-rural-migration-decisions-scotland-analysis-evidence/#:~:text=Factors%20Influencing%20Rural%20Migration%20Decisions%20The%20%27push%27%2C%20%27pull%27%2C,others%20to%20move%20into%20or%20return%20to%2

Doepke, M, Hannusch, F., Kindermann, F. and Tertilt, M. (2022). **The economics of fertility: A new era.** National Bureau of Economic Research Working Paper No. 29948, Cambridge, MA: NBER. Available at: www.nber.org/system/files/working_papers/w29948/w29948.pdf

Dove, D (2003), *The Brain Drain and Retention of Health Professionals in Africa, A case study prepared for a Regional Training Conference on Improving Tertiary Education in Sub-Saharan Africa: Things That Work!*. Available at: www.researchgate.net/publication/265108883_The_Brain_Drain_and_Retention_of_Health_Professionals_in_Africa_The_Brain_Drain_and_Retention_of_Health_Professionals_in_Africa

Driel, E. (2020). 'Refugee settlement and the revival of local communities: Lessons from the Riace model', **Journal of Modern Italian Studies**, 25(2): 149–173. Available at: www.researchgate.net/publication/340703774_Refugee_settlement_and_the_revival_of_local_communities_lessons_from_the_Riace_model

EIU (2018) **Fertile ground. How can Japan raise its fertility rate?** Available at: www.eiu.com/graphics/marketing/pdf/Fertility-in-Japan-EIU.pdf

The Economist (2022). **Richer societies mean fewer babies. Right?**. Available at: www.economist.com/finance-and-economics/2022/09/15/richer-societies-mean-fewer-babies-right

Financial Times (2023), **Falling birth rate highlights UK's demographic challenges**. Available at: www.ft.com/content/378253f2-a7a6-4c2d-a9e9-aa228f6ad547

Fincham, A. (2021). **European Atlas of Fertility Treatment Policies**. Fertility Europe. Available at: fertilityeurope.eu/european-atlas-of-fertility-treatment-policies/

Finnish Government (2023), **Talent Boost Finland**, Available at: tem.fi/en/talent-boost-en

Glass, J., McMorrán, R., Jones, S., Maynard, C., Craigie, M., & Weeden, A. (2020). **Case studies of island repopulation initiatives**. Scotland's Rural College (SRUC). Available at: pure.sruc.ac.uk/ws/portalfiles/portal/27030794/Case_Studies_of_Repopulation_Initiatives_Final_Report.pdf

Gordon, I. R. (2015). 'Ambition, human capital acquisition and the metropolitan escalator'. **Regional Studies**, 49 (6). pp. 1042-1055.

Hærvig, K.K., Petersen, K.U., Hougaard, K.S., Lindh, C., Ramlau-Hansen, C.H., Toft, G., Giwercman, A., Høyer, B.B., Flachs, E.M., Bonde, J.P. and Tøttenborg, S.S. (2022). 'Maternal exposure to per- and polyfluoroalkyl substances (pfas) and male reproductive function in young adulthood: combined exposure to seven PFAS.' **Environmental Health Perspectives**, 130(10). doi: doi.org/10.1289/ehp10285.

Hagar, H. (2021). **Just the Tip of the Iceberg: The First Few Months of the Rural and Northern Immigration Pilot**. Available at: www.northernpolicy.ca/upload/documents/publications/briefing-notes/hagar_rnip_researchreport_en.pdf

Harper, S. (2022) **The positive impacts of an ageing population**. Age International. Available at: www.ageinternational.org.uk/policy-research/expert-voices/the-positive-impacts-of-an-ageing-population/

Healthy Debate. (2019). **Funded IVF in Ontario: How the Ontario fertility program has changed IVF**. Available at: healthydebate.ca/2019/02/topic/funded-ivf-ontario/

Higher Education Statistics Agency (HESA) (2022), **'Getting a move on: The creation of a new graduate mobility marker'**. Available at: www.hesa.ac.uk/insight/29-11-2022/new-graduate-mobility-marker

Hoorens, S., Gallo, F., Cave, J. and Grant, J. (2007). 'Can assisted reproductive technologies help to offset population ageing?: An assessment of the demographic and economic impact of ART in Denmark and UK.' **Human Reproduction**. Available at: www.rand.org/pubs/external_publications/EP20070917.html

Houston, D., Findlay, A., Harrison, R. and Mason, C. (2008). 'Will attracting the "creative class" boost economic growth in old industrial regions? A case study of Scotland', **Geografiska Annaler: Series B, Human Geography**, 90(2): 133-149. doi: doi.org/10.1111/j.1468-0467.2008.00283.x.

Grove, J (2023). 'International Researchers eye UK exit over health surcharge hikes'. **Times Higher Education**. 31 August 2023. Available at: www.timeshighereducation.com/news/international-researchers-eye-uk-exit-over-health-surcharge-hikes

Hrytsai, L. (2021), 'Evaluation of the Family 500+ programme: National and international perspectives', **Annales Universitatis Mariae Curie-Skłodowska Lublin – Polonia**, Vol. xxviii, 2, doi:10.17951/k.2021.28.2.101-118.

Ifan, G. and Poole, E. (2018). **The Welsh tax base: risks and opportunities after fiscal devolution.** Available at: www.wcpp.org.uk/wp-content/uploads/2018/07/The-Welsh-Tax-Base-_WCPP-Final-180627.pdf

IMF (2020). **Lessons from Singapore on raising fertility rates – IMF F&D.** Available at: www.imf.org/en/Publications/fandd/issues/2020/03/lessons-from-singapore-on-raising-fertility-rates-tan.

Independent Review of Affordable Housing Supply (2019), **Final Report.** Available at: www.gov.wales/sites/default/files/publications/2019-04/independent-review-of-affordable-housing-supply-report_0.pdf

Koschalka, B. (2020). **No boost to births from Poland's flagship child-benefit scheme, government admits.** Notes From Poland. Available at: notesfrompoland.com/2020/01/23/no-boost-to-birth-rate-from-polands-flagship-child-benefit-scheme-government-admits/

Kuptych, C., Pang, E. F; Abella, M., (2006). **Global Competition for Skilled Workers.** International Institute for Labour Studies, International Labour Organization. Geneva: International Institute for Labour Studies. Available at: labordoc.ilo.org/discovery/fulldisplay/alma993856503402676/41ILO_INST:41ILO_V2

Kay, R. (2023). **Tackling Rural Depopulation.** WCPP. Forthcoming publication.

Levine, H., Jørgensen, N., Martino-Andrade, A., Mendiola, J., Weksler-Derri, D., Jolles, M., Pinotti, R. and Swan, S.H. (2022). 'Temporal trends in sperm count: a systematic review and meta-regression analysis of samples collected globally in the 20th and 21st centuries.' **Human Reproduction Update.** doi: doi.org/10.1093/humupd/dmac035.

Milligan, K. (2005). 'Subsidizing the stork: new evidence on tax incentives and fertility', **The Review of Economics and Statistics**, 87(3): 539-555. Available at: www.jstor.org/stable/40042947

Morris-Lange, S. (2019). **Retention of International Students/Graduates in Canada, Germany, and the Netherlands.** Available at: www.icmpd.org/file/download/48186/file/

Appendix 1: Summary of initiatives reviewed on the theme of boosting fertility

Country/ies	Initiative	Effect	Evidence
Europe, US, Canada and Australia	Family policies: funded childcare and parental leave	"lasting and substantial effects on fertility both for large reforms of public childcare and parental leave"	Systematic review of 335 studies, 2021
1970s Norway	Increase in childcare availability, access, and cost	Each % point increase in childcare coverage = increase women's number of children by 0.7%	Systematic review of 335 studies, 2021 Similar in Belgium, France & Germany
Germany	Staggered local implementation of childcare slots	10% increase in childcare coverage = 1.2% increase in births per 1000 women	Academic research with de facto RCT
Austria	Doubling parental leave from 12 to 24 months	5.7% higher likelihood of another birth, especially for higher-earning women	2021 systematic review of 335 studies Supported in Anglo-Saxon countries
Quebec from 1988	Cash transfers (universal benefits), especially high for third births	Up to 12% increase on fertility	Academic longitudinal study, but relative fall in long run
Belgium, France, Scandinavia	Childcare: cheap, available, wrap-around	Higher fertility levels than other high-income countries	UN report, no evaluation

Country/ies	Initiative	Effect	Evidence
Taiwan, Ontario	Assisted Reproductive Technology funding	More ART babies AND as more births to older women, potential of ART grows (e.g., Spain)	Small positive impact evaluated
Scotland	Baby box, free childcare hours, child payment, workplace flexibility, maternity care	Unknown: new policy	None
Singapore	Mix: paid mat leave, childcare subsidies, tax relief, gifts	Negative (1.49 child per women to 1.16 2001-18)	Various academic research
Japan	Mix: childcare subsidies, flexible work, gifts	Limited TFR (Total Fertility Rate) 1.37 to 1.42 (2008-14) + decreased female work participation	Think tank & government evidence
Nagicho	Mix of more generous policies: birth gift, volunteers-led nurseries, subsidised housing	Positive: TFR: 1.4 to 2.8 (2004-15)	Multiple evidence

Appendix 2: Summary of initiatives reviewed on the theme of retaining people

Country/ies	Initiative	Effect	Evidence
Japan	Addressing depopulation in remote areas with mix of policies	Unknown	Unknown
Scotland	Fresh Talent: retaining graduates by collaborating with employers to provide jobs	2200 students registering in 3 years but concern over types of jobs available	Evidence review by Scottish Government & academic evidence
UK	Better linkage between universities, govt and local employment markets	Employment of graduates in university locality	Academic research
Europe	Mix of policies addressing depopulation in remote areas: job creation in specific sectors existent in local area, transforming housing offer to suit inward migration and retention, improving transport	Positive	Horizon2020 project collating evidence from small case studies
Canada, France, Italy, US, UK	Remote working for women in rural areas	Opportunity to improve rural employment but need to ensure quality and equal access to broadband	OECD analysis

Country/ies	Initiative	Effect	Evidence
Australia	Graduate Skilled Migration Policy aimed at retaining university graduates into graduate schemes in rural areas	Successful in attracting and retaining students to areas such as teaching and healthcare, and in attracting workers to rural areas where the problem of ageing population is more acute, but has attracted criticism due to reported inequalities in quality of life between participants and naturalised citizens	<p>Academic review</p> <p>Francisco Rowe, Jonathan Corcoran & Alessandra Faggian (2013)</p> <p>Mobility Patterns of Overseas Human Capital in Australia: the role of a 'new' graduate</p> <p>visa scheme and rural development policy, <i>Australian Geographer</i>, 44:2, 177–195, DOI:10.1080/00049182.2013.789589</p>
Netherlands	National Network for Population Decline, a platform for professionals, public administrators and active members of the public to share knowledge and forge partnerships.	Unknown	None
Netherlands	National Association of Small Communities – an association with 12 member groups in smaller provincial areas. These in turn support initiatives by local residents, interest groups and village councils in small communities. Population decline is one of their main agenda items.	Unknown	Unknown

Appendix 3: Summary of initiatives reviewed on the theme of attracting people

Country/ies	Initiative	Effect	Evidence
Vermont & Oklahoma (US)	Remote worker attraction to rural areas (relocation, broadband, co-working space costs).	Above-average earners attracted; net gains to local economy.	Consultancy evaluation (Smart Incentives, 2022).
Scotland	Fresh Talent & Brand Scotland: attracting workers.	Unknown	Academic research (Houston et al., 2008): focus on local level, target talent pools for key sectors + business creators
Scotland	Rural visa pilot with local stakeholders defining jobs needed but also providing a framework for receiving new migrants and helping them settle.	Unknown: pilot beginning.	No evaluation (Scottish Government).
Finland & Netherlands	Attracting skilled workers & students via easing arrivals.	Unknown.	No evaluation.
France, Austria, Chile	Funding, visa, coaching and help-desk for attracting new start-ups.	Unknown.	OECD report (2015) but no evaluation.

Country/ies	Initiative	Effect	Evidence
Germany & Italy	Simplifying bureaucracy & using local community groups.	Integrating refugees and addressing depopulation.	Academic research (Driel, 2020).
United States	Housing and migration.	Social ties & amenities have stronger impact on migration decisions than wages or housing costs.	Intra-US 2009 study using census data (2011).
Scandinavia	Citizenship initiatives for immigrants.	Comparative analysis across Denmark, Sweden, and Norway. Different approaches to citizen participation and belonging informed the extent to which migrant populations felt that they could be active citizens.	Centre for Comparative Welfare Studies (2019).
Scotland	Argyll and Bute Rural Resettlement Fund. Launched in 2016 with the aim of attracting economically active citizens to relocate to a more rural area. There was a particular focus on developing SMEs.	Initial iteration of the programme, which closed in 2018, saw 79 successful applicants, with a total of 193 new residents (incl. 56 children) to the area. The fund was relaunched in 2021 (see below).	Scotland's Rural College

Country/ies	Initiative	Effect	Evidence
Scotland	Argyll and Bute Rural Resettlement Fund. A fund launched in 2021 that comprises £25 million each from the Scottish and UK governments, and at least £20 million from Argyll and Bute Council and partners. This will be used to create opportunities for people living in the region and attract further investment. Key focus areas include: aquaculture, tourism, housing, digital connectivity and skills for a rural economy.	No formal review as yet, as the project is still quite new.	
Scotland	Orkney Gateway Homes, Empty Homes Officer and Property Matchmaker Scheme, all of which are designed to attract citizens to the small island community.	The role of the 'Empty Homes Officer' has been regarded as a success with 742 homes brought back into use across all of Scotland in 2017 – 2018.	Orkney Government internal review
Ireland	Arranmore Offshore Digital Hub, an offshore digital hub that provides shared workspace with good broadband connectivity for residents and visitors.	Initiated in 2019 but interrupted by COVID-19 so no evaluation as yet.	Unknown.
Ireland	#cominghome campaign	Unknown.	Unknown.

Country/ies	Initiative	Effect	Evidence
Denmark	Friederikshavn experience economy and Settlement Service – local economy revitalised by establishment of ‘experience economy,’ offering festivals, cultural events, and tourist attractions. This was followed by a Settlement Service that offered housing and job opportunities to people moving to the area, including language-learning opportunities for non-naturalised citizens.	Academic review of the initial experience economy scheme found it to be a positive way of supplementing a largely service-based economy. Further reviews unclear, but local government figures claim that the settlement service has seen an 82% increase in population between 2012 and 2019 (impact of COVID unknown at present).	Academic Review: Hans Peter Therkildsen, Carsten Jahn Hansen & Anne Lorentzen (2009) The Experience Economy and the Transformation of Urban Governance and Planning, European Planning Studies, 17:6, 925–941, DOI: 10.1080/09654310902794059
Faroe Islands	Vágur experience economy based on tourism, adventure and sports	Unknown.	Unknown.
USA	<u>Maine Island Fellows</u> programme – a two-year Fellowship scheme available to graduates which offers affordable housing, skills training and professional development, for them to come and work on a project in the area.	No formal review found but the programme has won excellence awards.	<u>Press Release</u>

Country/ies	Initiative	Effect	Evidence
Canada	Fogo Island Inn and the Shorefast Foundation social enterprise that supports local communities create employment opportunities in post-industrial community in Newfoundland.	Six year academic inductive study found that the programme was successful in revitalising the local economy and providing employment whilst maintaining the integrity of the community.	Academic article The Conversation article
Canada	The Coasters Association employment and youth recruitment and retention initiative.	Unknown.	Unknown.

Report Authors

Eleanor MacKillop is a Research Associate at the Wales Centre for Public Policy

Amanda Hill-Dixon is a Senior Research Fellow at the Wales Centre for Public Policy

Cate Hopkins is a PhD candidate at Cardiff University's Data Justice Lab

Charlotte Morgan is a Research Officer at the Wales Centre for Public Policy

For further information please contact:

Amanda Hill-Dixon

Wales Centre for Public Policy

+44 (0) 29 2087 5345

info@wcpp.org.uk



Wales Centre for Public Policy

Cardiff University
Sbarc | Spark
Maindy Road
Cardiff
CF24 4HQ



www.wcpp.org.uk



029 2087 5345



info@wcpp.org.uk



@WCfPP



Economic
and Social
Research Council



Llywodraeth Cymru
Welsh Government



CARDIFF
UNIVERSITY
PRIFYSGOL
CAERDYDD