



Tackling digital poverty in rural communities

REGIONAL POLICY BRIEFING

Trinley Walker

June 2022

About the Work Foundation

The Work Foundation is a think tank focused on improving working lives across the UK through applied research and new ideas. For over a century, we have worked to break down the barriers individuals and communities face in accessing good work.

We believe everyone should have access to secure, rewarding and high-quality work. By engaging directly with workers, employers, policymakers and leading academics, we deliver rigorous applied research to tackle structural inequalities in the labour market and improve working lives across the UK.

We are part of Lancaster University's Management School, and work with a range of partners and organisations across our research programmes.

Citation

If you are using this document in your own writing, our preferred citation is: Walker, T (2022) Digital Poverty Transformation: Accessing Digital Services in Rural North West Communities - Regional Policy Briefing. Work Foundation, Lancaster University.

Permission to share

This document is published under the Creative Commons Attribution Non Commercial No Derivatives 3.0 England and Wales Licence. This allows anyone to download, reuse, reprint, distribute, and/or copy this publication without written permission subject to the conditions set out in the Creative Commons Licence.

For further information, please contact: info@theworkfoundation.com.

Acknowledgements

A number of individuals and organisations help made this work possible. The market research agency, Blue Marble, carried out the survey of rural residents in North West England. This briefing sets out findings from a study undertaken in partnership between the Work Foundation and academic colleagues within Lancaster University's Management School: Professor Katy Mason. Dr Sharon Wagg, Professor Niall Hayes and Dr Bingbing Ge, with the research kindly supported by the British Academy. An expert policy workshop was convened for the project and thanks are extended to the attendees that generously contributed at the event. DCMS, The RSA, Good Things Foundation, Digital Unite, Digital Poverty Alliance, Liverpool University, Rural Services Network, Age UK Lancashire, Cumbria LEP, Ofcom, Citizens Online.

Glossary

Digital poverty:

The inability to interact with the online world fully, when, where and how an individual needs to.

Rural North West England:

Areas across Cheshire, Cumbria and Lancashire which are not major metropolitan areas or larger cities and towns but settlements with a population of less than 10,000, such as villages or more isolated hamlets or dwellings.

Universal Credit:

A means-tested benefit for people of working age who are not in employment or on a low income. Universal Credit replaced six means-tested benefits previously available.

Executive Summary

A variety of interrelated factors drive digital poverty, including cost, connectivity and confidence. Our research focussed on the experiences of those living in rural communities in North West England found that digital poverty presents in specific instances. Individuals can face real barriers when attempting to navigate the welfare system or applying for a job online for the first time. Rather than categorising people as either being in digital poverty or not, interventions must be designed to meet the specific moments of digital poverty that people face.

Across our quantitative survey of over 500 rural residents living in the North West, and qualitative interviews, we found:

- 28% of the entire sample aren't confident completing a key digital task
 - The two skills that respondents had the most trouble with were: looking for work or applying for jobs online (26%) or video calls using Zoom, Microsoft Teams etc (23%)
- In responding to these challenges, one in five (22%) of our survey sample would ask family or friends for help, with older participants and those on lower incomes even more likely to do so
- Survey results found that while 95% of the sample have access to the internet through broadband or WiFi, just a quarter of respondents are unable to make the most of it

 either having trouble doing the things they want to do on the internet or wanting to use online services more
- Older people (aged 65+) and those on lower incomes are more likely to experience digital poverty in rural areas.

Informed by this evidence, local and regional Government should take a strategic approach to tackling digital poverty at a local level.

This briefing outlines policy recommendations that could catalyse such approaches and ensure that digital services are inclusive.

We call for digital poverty interventions to focus on:

- Distinct needs experienced through life stage transitions such as retirement or entering the world of work for the first time;
- Specific tasks and services where confidence is low, rather than digital literacy or inclusion as a whole;
- Supporting peer-to-peer learning models.

In driving these initiatives forward, Local Government should work with charities and other bodies to:

- Harness social value investment from commissioned large-scale connectivity partnerships, to target educational outreach to the rural residents at the greatest risk of digital poverty;
- Incentivise job platforms and recruiters to conduct outreach to assist rural residents with online job searches and applications;
- Undertake peer-to-peer outreach to boost confidence in accessing digital services.

Figure 1. Digital Poverty in rural North West England: summary

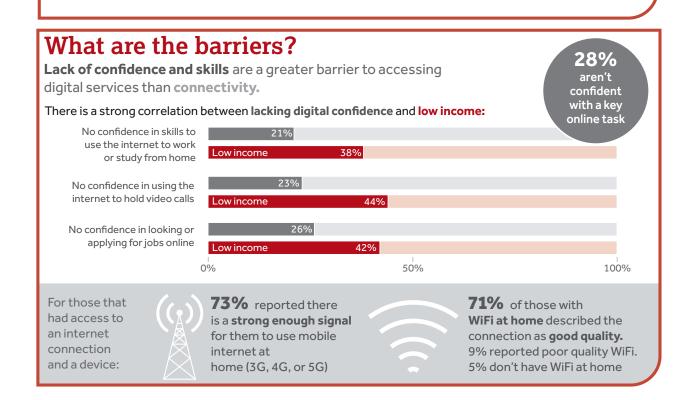
Digital poverty in the North West Digital Poverty is a significant issue across the UK with specific challenges for individuals living in rural areas. In a survey of 500 adults we found... 25% are unable to make the most of their internet connection, with 16% struggling to do the things they want to online, and 14% want to use more online services

What is it like to experience digital poverty?

"I live in a small village and being online is like fumbling around in the dark and I just can't do it.

When I wanted to be part of my choir online during lockdown, I didn't know who to ask or where to start, so I felt left out and let down."

"Being a forester can be dangerous.
When I'm in some of our forests
there's no mobile signal, so no
safety net. If something goes
wrong, I'm stuck until the estate
manager comes to check
up on me – that could be
two or three hours."



Introduction

More than ever, public services require users to engage with digital platforms. Across welfare, health and housing, the 'Digital-by-Default' policy agenda has become the standard approach for service delivery. As a consequence, individuals without a secure digital connection or confidence to carry out tasks online, are at severe risk of not being able to access to critical services.

This risk is heightened in rural areas. Research from the Good Things Foundation indicates that on average 80% of rural households in the UK have standard broadband availability compared to 98% in urban households.² Individuals experiencing digital poverty in rural areas are less likely to have alternative ways to access services within their local community. 17% of England's population live in rural areas according to research by DEFRA3 and this segment of the population have persistently been at a disadvantage with regard to digital connectivity. Government have recognised the importance of increased connectivity within its Levelling Up White Paper - pledging that by 2030 the UK will have nationwide gigabit-capable broadband and 4G coverage, with 5G coverage for the majority of the population.4

Connectivity barriers could be impairing business growth in rural areas, which contribute 16% of England's economy with small businesses key to economic activity – 71% of workers across rural areas are employed by SMEs, compared to 41% in urban areas.⁵

In the North West of England, progress towards closing the digital divide has been slow in comparison with other regions. The UK's Digital Inclusion Strategy, published in 2014, set out a target to reduce the number of people offline by 25% every two years. But across 2017-2019, the North West only achieved a 15.4% reduction rate, with the region ninth out of twelve in in making progress to bridge the digital divide.

The UK is one of the most geographically unequal economies within the OECD. Equal access to digital services will be essential to the Government's ambitions to address this.⁶

It is also worth noting that employment rates are 3% higher in urban settings compared to rural areas, within England. Predominantly urban areas in England also enjoy higher workplace-based earnings over rural places - at £25,400 (excluding London) to £22,900 outside of urban places.⁷

This briefing is based on a study undertaken to understand the drivers of digital poverty among rural communities in the North West, an area home to large rural areas and a diverse local economy. Evidence generated through this research will be relevant to policy development in the North West, but also for other regions and at a national level. An accompanying national policy briefing sets out how our evidence should inform Central Government policy.

The statistics cited are based on a survey of 501 individuals living in rural areas in the North West, between 25th February and 13th March, with further depth interviews conducted with 16 survey respondents experiencing digital poverty. Output from an expert policy workshop is also included within the briefing.

What is digital poverty?

We draw on a Digital Poverty Alliance definition of "digital poverty" for this research - as "the inability to interact with the online world fully, when, where and how an individual needs to." 8

Context is essential here: digital poverty occurs where a specific need cannot be achieved through digital engagement.

While for one individual this might be around engaging in social media, another person may experience digital poverty in relation to needing to access Universal Credit online. Although digital poverty is closely linked with socio-economic conditions, it is distinct from economic poverty. Individuals who are not on a low income may face other barriers to digital services⁹, including confidence and connectivity. Digital poverty can be

experienced despite having a good income. As this briefing sets out, besides costs, there are broader drivers of digital poverty which include confidence and connectivity.

This research has explored the ways that digital poverty is impacting rural residents in North West England. Survey results found that 95% of the sample have access to the internet through broadband/WiFi, and nine in ten agreed that the internet provides advantages in every-day life. However, just a quarter of respondents were able to make the most of that, with 14% saying they would like to use more online services and 16% reporting they have trouble doing things that they want to do online. 24% of the sample have a perceived lack of digital fulfilment, in that they would like to use more online services, but have trouble doing so.

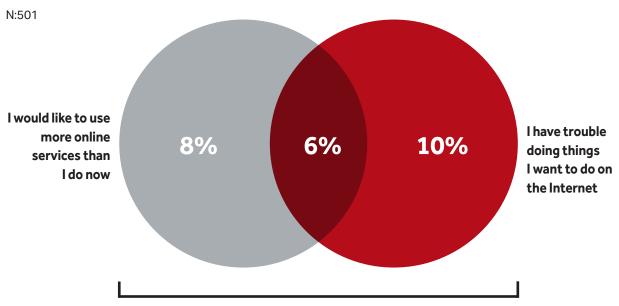


Figure 2. Proportion of rural North West residents who aren't able to do the things they want to online

Any perceived lack of digital fulfilment: 24%

Age, income and education are linked with digital poverty

There are strong demographic and socio-economic drivers underpinning attitudes to internet use and fulfilment. For example, while the overall proportion of respondents who had trouble doing things they wanted to do online was 16%, this rises to 28% among respondents of 65 years and above and 32% of those whose household income is £20,000 or less.

Older people, those on a lower income and those who had completed fewer years of formal education are at greater risk of experiencing digital poverty. There is a strong correlation between lacking digital skills and being on a low income.

Our research found that digital poverty is exhibited

in moments in which there are multiple connections between different drivers, such as accessibility and cost.

Digital poverty is preventing individuals from making the most of key online services. 79% of the sample stated that they were confident to work or study from home, with this dropping to 62% among the respondents from a household which has an income of £20.000.

There are similar differences across other digital skills, with survey respondents who report a household income of £20,000 or less demonstrating less confidence:

Figure 3. Digital Skills by Income Full sample, N:501; lower income, N:115

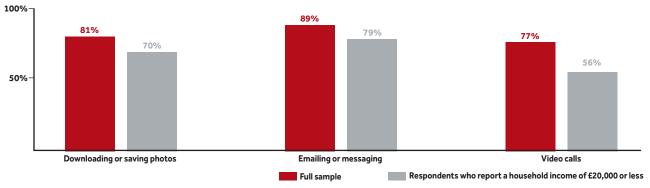
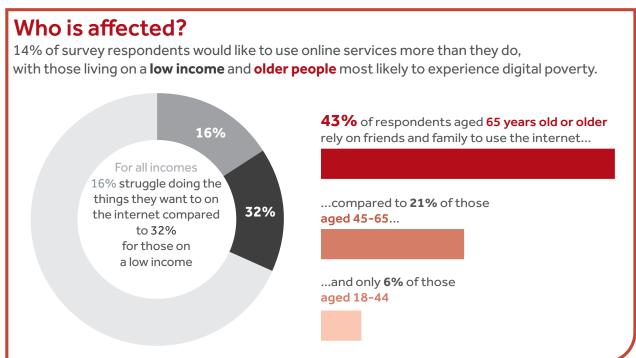


Figure 4. Using Digital Services



Based on a survey of 501 adults in rural northwest communities, between 25th February and 13th March

The degree to which rural residents can access devices and the extent to which affordability constraints hinder their usage, are closely related to having more limited digital skills. Confidence is also strongly correlated with age - 28% of the entire sample lack a form of digital skills but this rises to over half of those aged 65 and above.

Our evidence highlights a set of factors which drive digital poverty, manifesting in relation to specific digital tasks, creating moments of digital inclusion and exclusion. In navigating potential moments of digital poverty, individuals will weigh up decisions and actions in ways that could either be enabling or disabling; evaluating where engagement with the digital world offers sufficient benefits to outweigh the risks; and assessing trade-offs and remedial action for poor connectivity against carrying on without taking remedial measures. Policy measures must be based around these key 'touch points' and moments at which lacking engagement can result in poor outcomes for residents who require online public services.

Labour market characteristics of Rural North West communities

With a rich industrial heritage, manufacturing remains a prominent sector within the North West, with 9% of the region's jobs overall. Other big employers include service sectors such as retail and logistics (21%), health (14%) and accommodation and food services (7%). While not as large, the agricultural sector is significant in the region with more than 80% of the land area in the North West designated as rural. The region is also host to a cluster of high-tech industries which link closely to Higher Education Institutes, notably the aerospace

sector which, at £7 billion, contributes one quarter of the UK's overall turnover from the sector. Across the board, the majority of firms (83%) in the region are micro-sized with fewer than 10 employees. 16% are SMEs employing between 10 and 249 people, and just 0.4% (or 1,300 firms) employ 250+ people.¹¹

Across the three counties that comprise the North West, our survey had more respondents from Lancashire, at 43% of the sample, followed by 23% and 34% for Cumbria and Cheshire respectively.

What are the drivers of digital poverty in the Rural North West of England?

Lacking confidence is a strong driver of digital poverty

Our research found that inability to effectively carry out key online tasks and services was a key driver of digital poverty:

- 28% of the sample lack one form of digital skills across the measures asked about: e.g. installing apps, online banking.
- The two skills that respondents had the most trouble with were:
 - looking for work or applying for jobs online (26%) or
 - video calls using Zoom, Microsoft Teams (23%)

What are the barriers? 28% Lack of confidence and skills are a greater barrier to accessing aren't digital services than connectivity. confident There is a strong correlation between lacking digital confidence and low income: with a key online task No confidence in skills to 21% use the internet to work Low income or study from home 23% No confidence in using the internet to hold video calls Low income No confidence in looking or applying for jobs online 50% 100% 71% of those with 73% reported there For those that had access to is a strong enough signal WiFi at home described the an internet for them to use mobile connection as good quality. connection internet at 9% reported poor quality WiFi. and a device: home (3G, 4G, or 5G) 5% don't have WiFi at home

Figure 5. Confidence using digital technology

Based on a survey of 501 adults in rural northwest communities, between 25th February and 13th March

Again, older respondents and those on low incomes exhibited even further struggles with these tasks.

Given the shift to remote working resulting from the Covid-19 pandemic, it is concerning that such a high proportion of the rural population within the North West struggle with these skills. Data taken from the Annual Population Survey in 2020 shows that rural areas have a higher rate of home working than urban places (25% to 16%).¹²

Those lacking confidence in online job searches and applications may well struggle. Even for jobs that are not computer-based, such as customer service within the hospitality industry, recruitment will predominantly be conducted online. Evidence also shows that strong digital skills are associated with higher wages – with proficiency shown to lead to an increase in earnings of between 3% and 10%.¹³

There appears to be a compounding dynamic occurring with those with limited digital skills struggling to engage with vital online services. And lacking confidence and familiarity with key digital tasks such as making online payments can have wider impacts for financial wellbeing. Recent

reports found that council tax rebates of £150 that Government has made available to low income households to manage rising energy prices, are being delayed for consumers who do not pay council tax by direct debit.¹⁴

Low confidence and willingness to engage with digital activities may also be influenced by a lack of trust which prior research has shown to be a driver of digital exclusion.¹⁵

16% of the survey sample lacked confidence in engaging with online banking services and these reservations were also evident within the qualitative interviews:

"I should do [online banking] because it saves you money in the end just getting information is so much easier but I'm just old-fashioned... But I know at some stage I will have to because I suspect that even cheques will get faded out soon."

"I changed bank because they closed my branch in my village. I don't want to be doing it online." In responding to these challenges, a high proportion of the survey sample would ask family or friends for help – 22%, with older participants and those on lower incomes even more likely to do so.

"Family or friends help. I've got neighbours that are pretty good upstairs... and a friend just round the corner sorted something out on my phone for me."

Lacking confidence with digital technology could also limit engagement with online social groups, which during the pandemic sprung up to replace in-person meetings:

"During lockdown I joined the isolation choir, but I didn't feel I could go ahead with it, because I didn't feel I could do the... where you have to send in what you're singing, record yourself singing and send it in. I couldn't go the full way with that, which I was a bit sorry about really....... I just hadn't got anybody to ask about it, so I didn't continue with that. Never mind, I enjoyed the rehearsals anyway."

Lacking access as a driver of digital poverty

Access is one element of digital poverty among rural North West communities but is far from the only factor that prevents people from engaging with digital services. There are, however, barriers to access experienced by individuals in rural North West. Our survey found that:

- 13% of the sample have poor quality or no Wi-Fi
- 1 in 5 have no mobile broadband

High speed internet access has been persistently lower in rural areas compared to urban ones. Ofcom data shows that 98% of urban areas in the UK enjoy a superfast broadband connection which drops to 83% among rural places. 16 Research shows that the absence of digital infrastructure in rural areas can negatively affect communities, with young people drawn towards cities in order to pursue lifestyles which are closely related to digital technology. 17

Qualitative findings highlighted that participants with poor digital connectivity could be vulnerable in the event of their connectivity being cut-off, lacking a 'plan B'. This could result in people needing to adapt their approach in ways that are not conducive to the task at hand, such as when working from home:

"I have to have the hub in a certain place [in my house] otherwise it's very difficult for me to pick up a signal. I tend to work in the kitchen where I've got a goods surface to work on but I have to go where the walls aren't too thick to make a call."

Adaptive practices also included individuals relying on their mobile phone data at home, over and above their Wi-Fi connection. For lower paid workers in particular, lacking access or unreliable broadband or mobile signal could be a key cause of concern as disruption to work may result in a loss of salary or not being paid, as our qualitative research found.

Qualitative findings also showed how uncertainty about the reliability of their device or connection also impacted both people's ability and willingness and ability to work from home, which in the context of Covid-19 and the health challenges it presented, could give rise to challenging situations.

"I literally have to go into an office, during lockdowns principally because working from home was not an option for me. Which was very frustrating because we do have clinical vulnerability in the house. So, it's not without consequence.... It's two trains... more than one hour away"

"I probably wouldn't be able to hold down a job that relied on the internet... I am not confident in working from home... the internet is fine, most of the time. It's the phones, the phones are bad. I'm not confident that I would be able to work a job where I would have to use the phone, because it would just be so unreliable."

Accessibility challenges also included mobile coverage and reliability, which could result in everyday working practices needing to be altered. Mobile phone coverage was important to participants who were aware of 'not spots' in their area:

"You really have to go to the top of the drive if you want to use that [mobile signal]. It dramatically improves at the top of the drive...... I think people are used to it. People who know us are used to it and they probably email us before they'd text us."

Affordability concerns and low consumer confidence are limiting digital engagement

People living in rural areas have to contend with higher prices for fast broadband connectivity, with previous survey evidence showing prices were 76% higher on average than urban areas. ¹⁸ Coupled with the cost of devices, this can present a disincentive to engaging with the digital world.

Our survey included a series of questions to gauge the affordability of getting online. We found that 19% exhibited some form of cost barrier, whether in relation to broadband access, mobile data or access to devices. Cost is certainly a driver of digital poverty and unsurprisingly, households on low incomes are more adversely affected, which will compound inequality with limited connectivity (more likely to be experienced in low income households) limiting earning potential. 19% of the sample found either their PC, home broadband, a smartphone headset or mobile data unaffordable, rising to 36% among households with an income of £20,000 or less.

"I would probably get a more modern phone [a smartphone] if it was more affordable But I have a limited income at the moment so I have to watch what I'm spending... I can't just go out and spend a few hundred pounds on a phone, I would maybe like to..."

Qualitative findings provide rich context around the ways digital costs can create a struggle to balance other costs and results in other forms of poverty. Given the current cost of living crisis, these expenses will be felt all the more severely with the costs of essentials outpacing wages and welfare benefits.

Personal circumstances were closely interwoven with choices that people had to make when deciding on how and to what extent they can afford to make use of digital technologies.

"Maybe if I didn't have a child, it wouldn't have bothered me so much."

"I felt really stuck where I was. The boiler kept breaking. The internet was ... always going off; and for a while, I was so skint, ... because I was paying two mobile phone contracts."

Qualitative findings also highlighted how low levels of consumer confidence and technical understanding could result in people committing to costly and sub-optimal contracts that they are then tied in to, such as product-service contract bundles that include Wi-Fi and mobile data services.

"My internet was terrible... loads of people didn't [have reliable connectivity] but the best one [connectivity] was if you went up to the third floor... you could kind of get signal there, or you could go outside and get signal. But that was about it. So, I changed my mobile phone connection, because I was in a contract with one company which I didn't get any signal for. So, I phoned them and said, "I don't get any signal here, you know, in my own home and I'm a new mum, a single parent, do you think I could maybe cancel this contract?", "not really, no". I just ended up paying out that whilst opening up another and at the time, ... I was really... yes, really skint...."

How can we best design interventions to address digital poverty?

It is vital that interventions are designed in relation to the local context and the range of services that are available, such as transport, community centres and local libraries.

If a rural area does not have access to frequent and reliable public transport, many residents will have difficulty travelling to support or training to access digital services. Rural bus services in particular have been declining, with local authority-supported provision falling by 54% between 2011/2012 and 2019/2020.¹⁹

This highlights ta key challenge in providing support to rural communities. Interventions will need to be designed so that they can be easily accessed and do not deter people from engaging; particularly as potential service users will already lack confidence or could experience other barriers, such as learning difficulties or poor mental health. Where limited public transport may hinder take-up, it will be necessary to reach people 'where they are', embedding interventions within community settings, such as village halls.

Our research has underscored the importance of highly tailored support to solve specific problems in getting online, as well as the value of peer to peer approaches over more formal top-down training in tackling digital poverty.

Tailor interventions and support to meet needs at specific points in time

Previous research has highlighted the need for digital initiatives to fully reflect the perspectives and behaviours of the local communities that use them, if they are to drive effective take up.²⁰ As someone enters retirement, becomes a carer or applies for benefits like Universal Credit, these transitions will each come with different digital requirements. Interventions should be focussed on supporting individuals to access the services they need to when they need them, rather than taking a more general approach.

Binary distinctions between people who are digitally included as opposed to the digitally excluded are not helpful in framing interventions to address digital poverty. Individuals experiencing a specific problem with digital access and engagement are more likely to engage with forms of education and support that speak to the nature of the challenge they face. Initiatives seeking to help people to search for work and submit job applications online would be more salient to job seekers than a more generic workshop on digital skills, for example. With just under a quarter (24%) of the survey sample indicating a lack of digital fulfilment, there are clearly a range of activities that people require support around, and interventions are best targeted towards working through these specific problems.

Policy recommendation 1

Job search websites and recruiters should work with local authorities, Local Enterprise Partnerships (LEPs) and other partners to conduct outreach with rural residents with low confidence in looking for jobs online to improve accessibility and user experience.

Moving in to a new job, or re-entering the workforce after having received Universal Credit is a significant transition. Our research found confidence to look and apply for work was low among survey respondents.

Job search platforms, recruiters and local bodies such as councils and LEPs should work in partnership to build confidence among rural residents in searching and applying for jobs online, through outreach activities in local settings and at home. This activity should be coordinated with job centres and employment support programmes, such as JETS and the Work and Health Programme. Local and regional authorities should embed this activity within digital strategies.

There will be a range of events that could facilitate this outreach. Job fairs could be one opportunity to help reach rural residents in need of support, bringing together employers, recruiters and job search websites. It will also be necessary to plan proactive outreach for to individuals who require support where they are. This could take the form of telephone calls to guide people in navigating online recruitment platforms, working directly with individuals identified as requiring one-to-one support, following initial outreach activity. Research has shown that standard digital awareness-raising strategies are less effective in rural areas due to the independent nature of the population and less footfall past community venues.²¹

A higher proportion of survey respondents were confident in using social media than searching or applying for jobs online. With this in mind, job search platforms should also develop digital resources, such as explainer videos, and promote them through social media.

Policy recommendation 2

Local authorities should harness social value investment from commissioned large-scale connectivity partnerships, to target educational outreach to the rural residents at the greatest risk of digital poverty, equipping them with the key skills needed to search and apply for jobs online.

Government-led initiatives to increase digital connectivity will involve social value within their procurement processes, and this offers an opportunity to generate new investment for digital outreach and support activities.

The Gigabit project is a notable example, given the scale of investment. Providers applying for Government grants under the Gigabit project are required to demonstrate their approach to delivering social value throughout the procurement process and Local Authorities will lead delivery of the social value component of the project, ¹

Under the Government's guidance, providers bidding for public contracts can focus the social value component of their proposals on a range of skills and employment activities, including involving local stakeholders in community-led initiatives, and the creation of training opportunities for those who face barriers to employment.²

It is vital that this investment is channelled to individuals in rural areas with the most acute digital engagement needs and tailored to address the key problems they face.

Policy recommendation 3

Local authorities should facilitate peer-to peer support to boost confidence in accessing digital services.

This should include Community Covenants, which were outlined in the Government's Levelling Up White Paper as a new form of public service delivery that will empower local actors, including public bodies and communities themselves, to identify and drive forward solutions to social issues through a series of pilots. ¹

With investment available through public procurement, finance must be coordinated and led by local Government. Local authorities have an important role to play in coordinating new investment and interventions with existing activity that is being undertaken by the third sector.

Our research found that intermediaries and trusted individuals are key to helping those most at risk of digital poverty to engage across a range of online activity. Interventions seeking to boost digital inclusion must build from this strong basis of trust.

It is easier to bring support and education to where people are. This may function in different ways, including workshops in community settings such as a village hall; lending tablets or other devices while offering over-the-phone support; or through models that draw on digital champions to reach people who are struggling with digital tasks. The overriding principal however, for peer-to-peer interventions, is that they are delivered by a trusted person in a trusted place.

Empowering local actors who are best placed to understand the nature of the issues in their area and how best to address them will be essential to ensure this approach is effective.

Peer-to-peer interventions can be the most effective way to reach people experiencing digital poverty

Across both the quantitative and qualitative research conduced, there were numerous examples of families and friends working to bring services, information and connections to those who would otherwise be excluded from them. Drawing on the trust and engagement that peer-to-peer interventions build and nurture could make a meaningful difference to those who are furthest away from engaging confidently with digital services.

A further benefit of peer-to-peer approaches is that, by design, they automatically account reflect the distinct needs of their local community. It is far easier to bring training into the context of people's lives, be it in the local village hall, pub, or other trusted places, than it is to require people to travel to more distant, formal and unfamiliar venues.

Peer-to-peer approaches are also better able to address hidden barriers that can prevent engagement with digital services, such as mental health issues, learning difficulties or English language barriers.

References

- ¹ Wagg, S. and Simeonova, B., (2021). A policy-level perspective to tackle rural digital inclusion, Information Technology & People, Vol. Ahead-of-print, No. Ahead-of-print. DOI 10.1108/ITP-01-2020-0047.
- ² Good Things Foundation (date unavailable). Doing Digital Inclusion: Rural Handbook. Available at: https://www.goodthingsfoundation.org/insights/doing-digital-inclusion-rural-handbook/
- ³ Department for Environment, Food & Rural Affairs (2022). Statistical Digest of Rural England. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/ 1072780/03_Statistical_Digest_of_Rural_England_2022_April_edition_final1.pdf
- ⁴ The Department for Levelling Up, Housing and Communities (2022). Levelling Up the United Kingdom. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/ 1052706/Levelling_Up_WP_HRES.pdf
- ⁵ Department for Environment, Food and Rural Affairs (2022). Rural Economic Bulletin for England, April 2021. Available at: https://www.gov.uk/government/statistics/quarterly-rural-economic-bulletin/rural-economic-bulletin-for-england-april-2021
- ⁶ Taylor, S. (2021). The Great Digital Divide: Mapping the UK's Internet Non-users. Available at: https://www.rouge-media.com/blog/the-great-digital-divide-mapping-the-uks-internet-non-users/
- Department for Environment, Food & Rural Affairs (2022). Statistical Digest of Rural England. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/ 1072780/03_Statistical_Digest_of_Rural_England_2022_April_edition_final1.pdf
- ⁸ Digital Poverty Alliance: We define "digital poverty" as "the inability to interact with the online world fully, when, where and how an individual needs to" (Digital Poverty Alliance).
- ⁹ Barrantes, R. (2010.) Digital poverty: An analytical framework, 17th Biennial Conference of the International Telecommunications Society, Montreal.
- ¹⁰ The Productivity Institute (2021). The North West of England's Productivity Challenge: Exploring the issues. Available at: https://www.productivity.ac.uk/wp-content/uploads/2021/11/PIP003-The-North-West-of-Englands-Productivity-Challenge-FINAL-301121.pdf
- ¹¹The Productivity Institute (2021). The North West of England's Productivity Challenge: Exploring the issues. Available at: https://www.productivity.ac.uk/wp-content/uploads/2021/11/PIP003-The-North-West-of-Englands-Productivity-Challenge-FINAL-301121.pdf
- Defra (2022). Statistical Digest of Rural England. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/ 1072013/03_Statistical_Digest_of_Rural_England_2022_April_edition_final.pdf
- ¹³ (Centre for Economics and Business Research (CEBR).
- Wearn, R. (2022). Warning poorest households are struggling to get £150 energy rebate. Available at: Warning poorest households are struggling to get £150 energy rebate - BBC News
- Lee, B., Chen, Y., Hewitt, L. (2011). Age differences in constraints encountered by seniors in their use of computers and the internet, Comput. Hum. Behav., Group Awareness in CSCL Environments 27, 1231–1237.
- ¹⁶ Ofcom (2021). Connected Nations 2021. Available at:

https://www.ofcom.org.uk/ data/assets/pdf file/0035/229688/connected-nations-2021-uk.pdf

- ¹⁷ Correa, T. and Pavez, I. (2016). Digital inclusion in rural areas: A qualitative exploration of challenges faced by people from isolated communities, Journal of Computer-Mediated Communication, 21(3), 247–263.
- ¹⁸ Paton, T. (2021). Study: Rural UK Pays 76% More for Slower, Less Reliable Broadband. Available at: https://broadbandsavvy.com/rural-broadband-survey/
- ¹⁹ Centre for Better Transport (2021). Future of Transport: rural strategy. Campaign for Better Transport submission to Department for Transport call for evidence. Available at: https://bettertransport.org.uk/sites/default/files/research-files/DfT_Rural_Transport_Consultation_Response_Feb_2021.pdf
- ²⁰ Gurstein, M. (2012). Toward a conceptual framework for a community informatics. In A. Clement, M. Gurstein, G. Longford, M. Moll, and L.R. Shade (Eds.), Connecting Canadians: Investigations in community informatics, 35–60. Edmonton: AU Press
- ²¹ Good Things Foundation (date not available). Doing Digital Inclusion: Rural Handbook. Available at: https://www.goodthingsfoundation.org/insights/doing-digital-inclusion-rural-handbook/