

4 Telecoms and networks

4.1 Recent developments in Wales

Superfast Cymru

Superfast Cymru, a programme funded by the Welsh Government, the UK Government, the European Regional Development Fund and BT, is bringing superfast broadband to homes and businesses in Wales, in areas where there are currently no plans for commercial roll-out. The programme had provided superfast broadband to 610,875¹¹ premises as of the end of June 2016. Ofcom's [Connected Nations 2015 report](#) found that superfast broadband¹² availability in Wales had increased from 55% of premises in June 2014 to 79% of premises in June 2015.

In July 2015, the Welsh Government announced an extension to the Superfast Cymru project to cover an additional 42,000 premises in Wales. As a result of an extra £19m investment by BDUK, the European Regional Development Fund (ERDF) and BT, the programme will now run until summer 2017. As part of the extension of the project, the Welsh Government signed a contract with high-speed wireless broadband specialists Airband in July 2015 to connect nearly 2,000 of the extra premises in business parks across Wales.

Additionally, the Minister for Skills and Science, Julie James AM, announced in January 2016 the Welsh Government's decision to extend two of its schemes to improve broadband availability. The Access Broadband Cymru (ABC) and the Ultrafast Connectivity Voucher schemes will now run for a further two years until March 2018.

Access Broadband Cymru

The Access Broadband Cymru (ABC) scheme offers subsidies to support households and businesses that are unable to receive a consistent broadband connection of 2Mbit/s or above. There are two levels of funding available depending on the speed required - £400 for download speeds of 10Mbps and above and £800 for 30Mbps and above. A range of technologies will be used to deliver superfast speeds including satellite, wireless and 4G. Satellite Internet, a specialist satellite internet service provider (ISP), recently announced its support for the scheme as a registered supplier. Wales also has a number of companies providing point-to-point wireless broadband including TFL, ResQ and Bluewave

Ultrafast Connectivity Voucher Scheme

In January 2016 it was announced that the Ultrafast Connectivity Voucher Scheme would be extended to all businesses in Wales, not just those located in the Enterprise and Local Growth Zones, as had been the case previously. This scheme was launched in November 2014 to help businesses meet the capital costs involved in the installation of ultrafast broadband services.¹³ It offers a maximum grant of £10k.

¹¹ The number of premises tested and verified by the Welsh government

¹² Connections with actual speeds of 30Mbit/s or higher.

¹³ Connections which are able to achieve at least 100Mbit/s download speed and 30Mbit/s upload speed

G.fast trials in Swansea

More than 100 homes in Swansea are currently involved in technical trials of G.fast technology, conducted by BT and Alcatel-Lucent. G.fast promises to deliver speeds of more than 300Mbit/s over copper wire and is described as a stepping stone between fibre to the cabinet (FTTC) and fibre to the premises (FTTP). The trials are helping to gauge how the technology performs and how it could be delivered to Wales and the UK in the future.

Superfast Broadband Exploitation Programme

The £12.5m five-year Wales-wide programme is funded by the Welsh Government, local authorities, the ERDF (£7m) as well as academic and private sources. The programme aims to support mainly small and medium enterprises to understand the superfast infrastructure and to take advantage of the latest technology. The programme has both regional and nation-wide delivery plans, and provides businesses with targeted information, telemarketing engagement, online tools, access to workshops and one-to-one support.

Spectrum Internet

Spectrum Internet has extended the deployment of its dark fibre to bring FTTP services to multi-tenant office buildings across south Wales; more than 200 businesses are now receiving synchronous 100Mbit/s and 1Gbit/s broadband connections in areas including Cardiff and Treforest as well as Bridgend and Carmarthen. The company is also installing FTTP at the St Athan Enterprise Zone, the location chosen by Aston Martin for production of the DBX. In addition, it has further developed its network in rural Monmouthshire, using the method of micro-trenching to deploy dark fibre.

UK Government Mobile Infrastructure Project

The closure of the UK Government's £150m Mobile Infrastructure Project was announced in October 2015. This project was set up to bring mobile coverage to not-spots around the UK and was intended to run until March 2016, building 600 masts across the UK, with 132 of these in Wales. The project had been awarded to Arqiva, working with the four MNOs.

Of the Wales sites, 63 were classified as being too difficult or costly to resolve, and of the 69 sites, where a transmission solution was possible, only nine were completed. Abernant in Carmarthenshire, and Felindre, Swansea were the only two completed sites where all MNOs has installed network equipment; Llangwryfon, Haverfordwest and Llanfynydd were completed with at least one MNO's equipment being present, and Carmarthen, Ystrad Meurig and Kington are yet to go live.

4.2 Availability of fixed broadband services

Basic broadband services are available to almost all premises in Wales

Three main technologies are used to provide fixed broadband services in the UK: exchange-based ADSL, cable (over a hybrid fibre-coaxial network) and fibre to the cabinet (using VDSL from the street cabinet).¹⁴ Of these three technologies, ADSL is the most widely available, partly because it is the cheapest to deploy as it uses the existing copper telephony network to transmit data to the end-user. In most cases it does not require an upgrade to the existing copper access network, and the only costs are associated with the installation of the new equipment in the local exchange and the end-user's premises. By comparison, cable and fibre roll-out both involve the deployment of new infrastructure to connect local exchanges/nodes to the end-user.

BT has around 5,600 local exchanges across the UK (of which over 400 are in Wales), and almost all of these have been upgraded to offer ADSL broadband services. Across the UK as a whole, 99.98% of premises (i.e. homes and offices) were connected to an ADSL-enabled exchange by the end of 2015 (Figure 4.1). In Northern Ireland and Wales, all the BT local exchanges had been upgraded to offer ADSL broadband services, while in England and Scotland there remain a small number of exchanges that are not ADSL-enabled.

It is important to note that some premises in ADSL-enabled areas may not be able to receive broadband services, or may only be able to access very low speeds. Potential reasons for this include the long length, or poor quality, of the copper telephone line from the premises to the local exchange.

What is local loop unbundling (LLU)?

Local loop unbundling (LLU) operators are able to offer fixed broadband services by placing their own equipment in the incumbent provider's local exchange. This equipment is then connected to the LLU provider's backhaul network and ADSL broadband services are provided over the copper lines from the exchange to the end user; these lines are leased from the incumbent provider. LLU operators are able to benefit from economies of scale that are not available when purchasing wholesale services on a per-unit basis, and are better able to differentiate their services from those offered by their competitors. Similarly, consumers living in LLU-enabled exchange areas have a greater choice of ADSL broadband services and, typically, access to lower-cost (particularly bundled) broadband services.

By the end of 2015, 95% of UK premises were served by unbundled local exchanges (a small increase compared to the previous year). As there are a larger number of premises to be served in urban areas, roll-out of any fixed telecoms network tends to be concentrated there, at least initially. This is reflected in the fact that almost all premises in urban areas (over 99%) were connected to an unbundled local exchange at the end of 2015. In rural areas, 77% of premises were connected to an unbundled local exchange by the end of 2015. England had the highest proportion of premises connected to an unbundled local exchange at the end of 2015, at 96%, followed by Wales with 93% availability and then Scotland and Northern Ireland (both 90%).

¹⁴ A small proportion of premises are also served by fibre to the premises (FTTP).

Figure 4.1 Proportion of premises connected to ADSL-enabled and unbundled exchanges



Source: Ofcom / BT, December 2015 data

Ninety-one per cent of premises in Wales were able to receive broadband services with speeds of 10Mbit/s or higher in June 2016

In 2015, the UK Government announced its intention to establish a 10Mbit/s universal service obligation (USO) for fixed broadband services. Data provided to Ofcom by fixed broadband providers¹⁵ show that by June 2016, 95% of UK premises were able to receive broadband speeds of 10Mbit/s or higher, up from 92% a year previously. As with basic broadband services, availability was higher in urban areas, with 98% of urban premises able to receive speeds of 10Mbit/s and above, compared to 76% in rural areas.

In June 2016, Wales and Northern Ireland had the joint lowest proportion of premises able to receive broadband speeds of 10Mbit/s or higher, among the UK nations, at 91%. Availability in Wales had increased by two percentage points compared to a year previously.

¹⁵ This analysis is a preliminary assessment of coverage and is based on data from a limited number of national and larger regional providers. We are continuing to analyse the data we have received, including integrating data from additional, smaller providers, and our final assessment of coverage will be published in the *Connected Nations Report* later this year.

Figure 4.2 Proportion of premises able to receive broadband services at 10Mbit/s speeds and above



Source: Ofcom / operators, June 2016 data

Note: UK urban and rural figures are not comparable to those published in the 2015 report due to a change in the urban/rural classifications.

Wales had the second highest proportion of premises that could receive superfast, or higher, broadband speeds, among the UK nations, in June 2016

When collecting data to inform its work in monitoring the UK’s communications market infrastructure in 2016, Ofcom asked operators to provide data regarding the proportion of premises that could receive superfast, or higher, fixed broadband speeds,¹⁶ i.e. a fixed broadband service with an actual speed of 30Mbit/s or higher.

It is important to note that not all cable and fibre broadband connections are capable of providing superfast broadband services. For example, the speed achievable on a fibre-to-the-cabinet (FTTC) line will depend on the length and quality of the copper connection from the street cabinet to the user’s premises (as is the case with ADSL).

As shown in Figure 4.3 below, the proportion of premises that were able to receive superfast or higher broadband services in the UK was 88% in June 2016. This represented an increase of five percentage points compared to a year previously. Availability was much higher in urban areas, with 93% of urban premises being able to receive superfast or higher broadband, compared to 58% in rural areas. In Wales 85% of premises could receive superfast or higher broadband by June 2016, the second highest proportion among the UK nations, up from 79% in June 2015.

The UK Government defines superfast broadband as having download speeds of 24Mbit/s or higher. We would expect the coverage of services at these speeds to be higher than the 88% of UK premises that are able to receive speeds of 30Mbit/s or more.

¹⁶ This analysis is a preliminary assessment of coverage and is based on data from a limited number of national and larger regional providers. We are continuing to analyse the data we have received, including integrating data from additional, smaller providers, and our final assessment of coverage will be published in the *Connected Nations Report* later this year.

Figure 4.3 Proportion of premises able to receive superfast or higher broadband services



Source: Ofcom / operators, June 2016 data

Note: UK urban and rural figures are not comparable to those published in the 2015 report due to a change in the urban/rural classifications.

4.3 Mobile network coverage

Overview

Mobile network availability varies across the UK, with some areas (known as ‘mobile not-spots’) having no mobile coverage. These areas are often characterised by low population density and/or hilly terrain, which present physical and economic obstacles and deter mobile network operators (MNOs) from deploying mobile network infrastructure. Other areas (known as ‘partial not-spots’) have mobile coverage but only from some of the UK’s four operators.

How we measure the availability of mobile telephony for this report

The coverage information presented in Ofcom’s *Communications Market Reports* and the *Connected Nations* report is collected by Ofcom from the four UK mobile network operators (MNOs). Information on coverage is provided by each operator for each 100m x100m ‘pixel’ of landmass across the UK. This information is then correlated with maps of premises to give the premises coverage figures.

The signal strength thresholds used by Ofcom to determine where 2G, 3G and 4G mobile services are available differ from those used in last year’s reports. As such, the mobile coverage data in this report are not comparable to those published last year. These thresholds may also differ from the ones used by MNOs in their reporting. UK urban and rural figures are also not comparable to those published in the 2015 report due to a change in the urban/rural classifications.

The availability figures in this report all refer to outdoor coverage. Coverage figures for indoor reception are likely to be lower because radio signals are weakened as they pass through the fabric of buildings. Indoor reception is highly dependent on the building, as well as the user’s location in the building, making it difficult to calculate accurate indoor coverage figures.

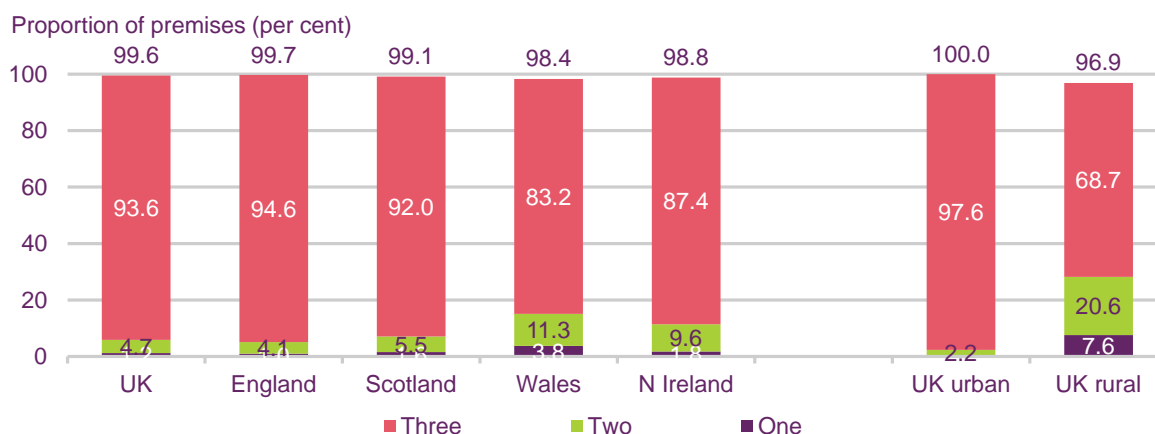
Figure 4.1, Figure 4.4, Figure 4.5, and Figure 4.6 show coverage levels for 2G, 3G and 4G mobile services respectively.¹⁷ 2G is considered satisfactory for telephone calls and text messaging, while 3G is considered the minimum required to access mobile data services. 4G generally provides a better user experience than 3G when accessing mobile data, as it offers faster download and upload speeds.

Wales had the lowest proportion of premises with outdoor 2G coverage in May 2016

Data provided to Ofcom by the UK's three national 2G mobile network operators (Vodafone, O2 and EE) show that by May 2016, 99.6% of UK premises were in areas with 2G coverage from at least one network, and around 0.4% of UK premises were in areas without any 2G coverage at all. The data shows that most UK premises (93.6% of the total) were in areas with outdoor 2G coverage from all three providers. The proportion of UK premises in areas with outdoor 2G mobile coverage in May 2016 was higher in urban locations (100.0%) than in rural ones (96.9%).

In Wales, the proportion of premises in areas with outdoor 2G coverage from at least one network in May 2016 was 98.4%, the lowest proportion across the UK nations. Wales also had the lowest proportion of premises with outdoor coverage from all three national 2G networks, at 83.2%. One of the likely reasons for the lower-than-average 2G coverage in Wales is its hilly terrain, which restricts the propagation of mobile signals.

Figure 4.4 Outdoor 2G premises mobile coverage, by number of operators



Source: Ofcom / operators, May 2016 data

Notes: Coverage is based on 100m² pixels covering the UK; UK urban and UK rural figures are not comparable to those published in the 2015 report due to a change in the urban/rural classifications used to calculate them.

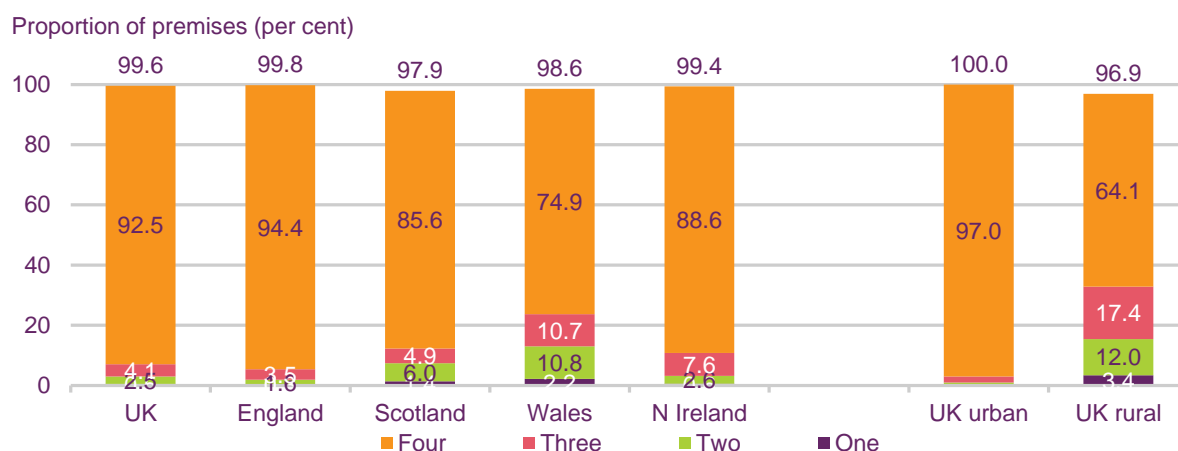
In Wales, 98.6% of premises were in areas with outdoor 3G coverage in May 2016

Data provided to Ofcom by the UK's four national 3G mobile network operators (the three national 2G providers plus Three) show that 99.6% of UK premises had outdoor coverage from at least one 3G network in May 2016, while 92.5% had outdoor coverage from all four 3G providers. The proportion of premises in areas with outdoor 3G coverage was higher in urban areas of the UK (100%) than in rural areas (96.9%).

¹⁷ The availability data provided by the MNOs is taken from network planning tools, which are subject to a margin of error. Local factors such as tall buildings or trees can also affect signal strength.

In Wales, 98.6% of households had 3G coverage from at least one provider in May 2016. The proportion of premises in Wales with outdoor coverage from all four 3G networks was 74.9%, the lowest across the UK nations.

Figure 4.5 Outdoor 3G premises mobile coverage, by number of operators



Source: Ofcom / operators, May 2016 data

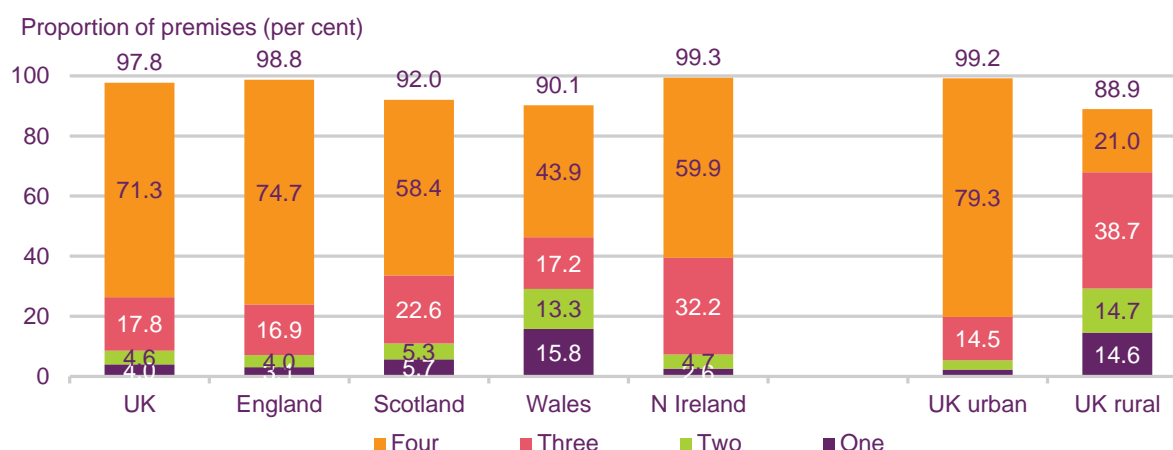
Note: Coverage is based on 100m² pixels covering the UK; UK urban and UK rural figures are not comparable to those published in the 2015 report due to a change in the urban/rural classifications used to calculate them.

Over 90% of premises in Wales were in areas with outdoor 4G coverage in May 2016

The deployment of 4G mobile services has progressed rapidly in recent years, and 97.8% of UK premises were in areas with outdoor 4G mobile coverage from at least one national mobile network operator in May 2016. Similarly, the proportion of UK premises able to receive outdoor coverage from all four national MNOs was 71.3%. The difference between urban and rural 4G coverage was much more marked for 4G services than for 2G and 3G, with 99.2% of urban premises having outdoor 4G coverage, compared to 88.9% of those in rural areas.

Wales had the lowest proportion of premises with outdoor 4G coverage from one or more mobile networks in May 2016, at 90.1%. The proportion of premises in Wales with outdoor coverage from all four 4G networks was 43.9%, an increase of 23.9 percentage points compared to the previous year.

Figure 4.6 Outdoor 4G premises mobile coverage, by number of operators



Source: Ofcom / operators, May 2016 data

Note: Coverage is based on 100m² pixels covering the UK; UK urban and UK rural figures are not comparable to those published in the 2015 report due to a change in the urban/rural classifications used to calculate them.

4.4 Service take-up

Take-up of communication services in Wales was in line with UK averages in 2016

Take-up of landline and broadband services in Wales was broadly consistent with levels in the UK as a whole in 2016. As in 2015, adults in Wales were more likely than the UK average to have a tablet computer in their household (67% vs. 59%). While overall mobile phone take-up in Wales was in line with that in the UK (91% in Wales vs. 93% UK), smartphone ownership in Wales was lower (65% vs. 71%).

There were some significant differences in service and device take-up between urban and rural areas of Wales. Adults in urban areas were more likely than those in rural areas to have a tablet computer at home (69% vs. 59%) and to go online using a mobile phone (63% vs. 53%). Take-up of a 4G service was also lower in rural areas, at 28%, compared to 49% in urban areas.

Figure 4.7 Take-up of communications services: 2016

		UK	Wales	England	Scotland	N Ireland	Wales urban	Wales rural
Individual								
Voice telephony	Fixed Line	86%	85%	86%	86%	86%	85%	84%
	Mobile phone	93%	91%	94%	91%	92%	90%	94%
	Smartphone	71%	65% ↓	71%	70%	72%	67%	59%
Internet	Computer (any type)	84%	85%	85%	79%	80%	86%	80%
	Tablet computer	59%	67% ↑	59%	56%	60%	69% ↑	59%
	Total Internet ¹	86%	84%	87%	84%	83%	84%	82%
	Broadband (fixed and mobile) ²	81%	79%	81%	79%	78%	80%	77%
	Fixed Broadband	79%	77%	79%	78%	77%	78%	76%
	Mobile Broadband (via dongle/SIM) ³	4%	4%	5%	3%	3%	3%	5%
	Web access on mobile phone ⁴	66%	61%	66%	63%	69%	63% ↑	53%
	4G service	48%	44%	48%	40%	54%	49%	28% ↓

Source: Ofcom Technology Tracker, H1 2016

Notes: ¹ Households with an internet connection of any description; ² Households with a fixed broadband and/or dedicated mobile broadband (dongle/SIM) data connection (excludes households that solely use a mobile handset/s to access the internet); ³ Households that use a dedicated mobile broadband (dongle/SIM) data connection to access the internet (excludes households that solely use a mobile handset/s to access the internet); ⁴ Households that use a mobile handset/s to access the internet (may also have any other type of internet access).

Base: All adults aged 16+ (n = 3737 UK, 489 Wales, 2239 England, 502 Scotland, 507 Northern Ireland, 240 Wales urban, 249 Wales rural)

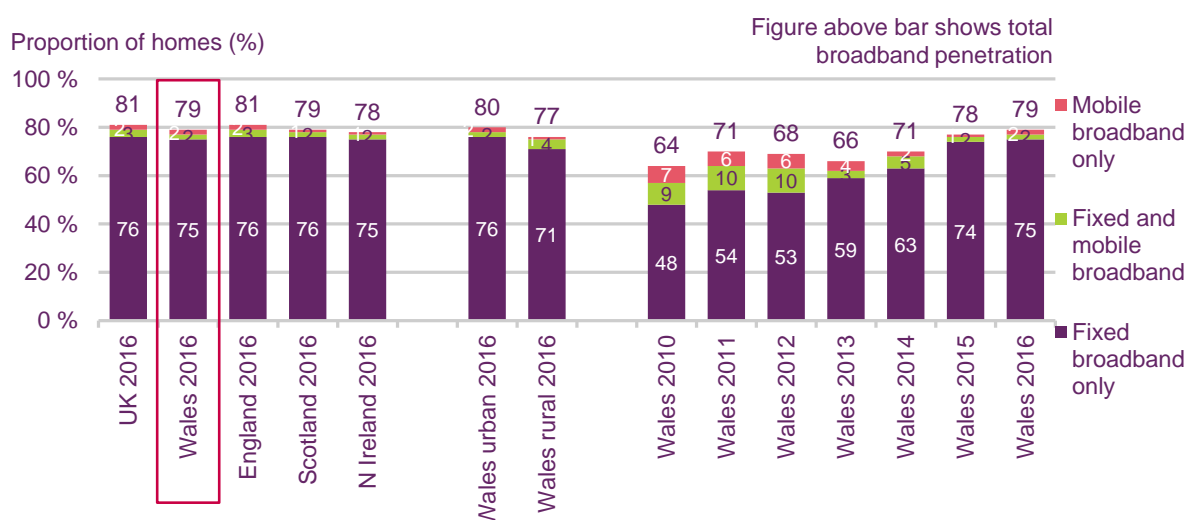
Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016 and between Wales urban and rural in 2016.

QC1: Is there a landline phone in your home that can be used to make and receive calls?/ QD2: Do you personally use a mobile phone?/ QD4: Do you personally use a smartphone?/ QD6: Do you have a 4G service?/ QE1: Does your household have a PC or laptop computer?/ QE2: Do you or does anyone in your household have access to the internet at home?/ QE9: Which of these methods does your household use to connect to the Internet at home?/ QD28A: Which if any, of the following activities, other than making and receiving voice calls, do you use your mobile for?

Total broadband penetration has remained unchanged in Wales since last year

As shown in Figure 4.8, total broadband penetration for households in Wales (79%) was consistent with that for the UK as a whole, with no change in total broadband take-up in Wales since 2015. The proportion of households in Wales using solely a fixed broadband service in 2016 was also in line with the rest of the UK (75% and 76% respectively). There has been no significant change in this incidence among households in Wales since 2015, following an 11 percentage point increase between 2014 and 2015. There was also no significant difference between urban and rural areas in the take-up of broadband by connection type.

Figure 4.8 Overall household broadband take-up, by connection type



Source: Ofcom Technology Tracker, H1 2016

Base: All adults aged 16+ (n = 3737 UK, 489 Wales, 2239 England, 502 Scotland, 507 Northern Ireland, 240 Wales urban, 249 Wales rural, 1075 Wales 2010, 493 Wales 2011, 513 Wales 2012, 492 Wales 2013, 491 Wales 2014, 496 Wales 2015, 489 Wales 2016)

Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016, between Wales urban and rural in 2016 and between Wales 2015 and 2016.

QE9: Which of these methods does your household use to connect to the internet at home?

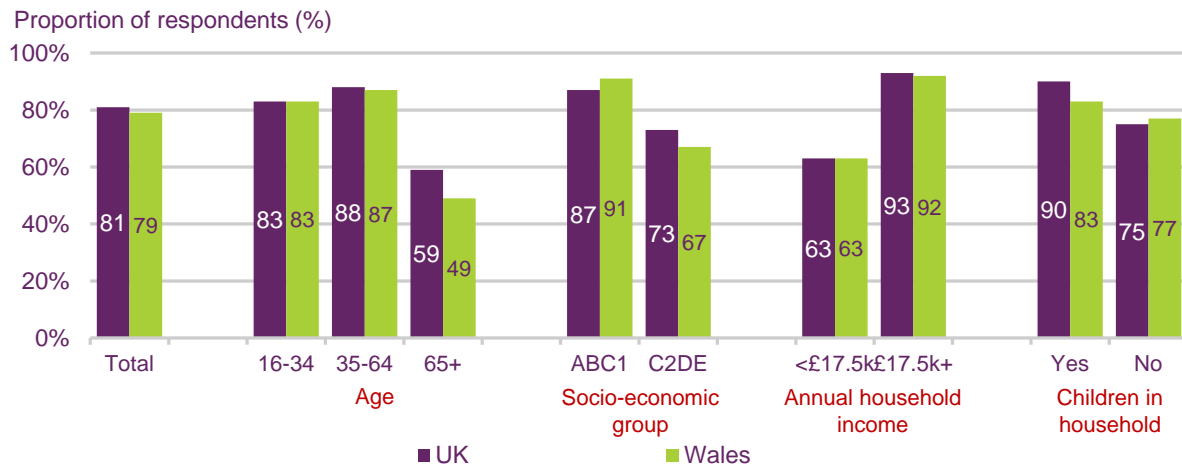
Take-up of broadband in Wales is in line with the UK overall

As shown in Figure 4.9, there was no significant difference between broadband take-up¹⁸ in Wales and in the UK as a whole in 2016 (79% and 81% respectively). There were also no significant differences between Wales and the UK for the different demographic groups shown in the chart.

However, within Wales there were differences in broadband take-up by age, socio-economic group and household income. Adults aged 65 and over were less likely than younger age groups to have broadband. Broadband take-up was higher among ABC1 adults (91%) than among those in C2DE socio-economic groups (67%), and there was a 29 percentage point difference in broadband take-up levels between adults with a household income below £17.5k (63%) and those with a household income above £17.5k (92%).

¹⁸ This figure includes fixed and dedicated mobile broadband (via dongle/SIM) access but excludes access on mobile handsets.

Figure 4.9 Overall broadband take-up in Wales, by demographic



Source: Ofcom Technology Tracker, H1 2016

Base: All adults aged 16+ (n =489 Wales, 134 16-34s, 226 35-64s, 129 65+, 261 ABC1, 227 C2DE, 134 <£17.5k income, 109 £17.5k+, 157 children in home, 332 no children in home)

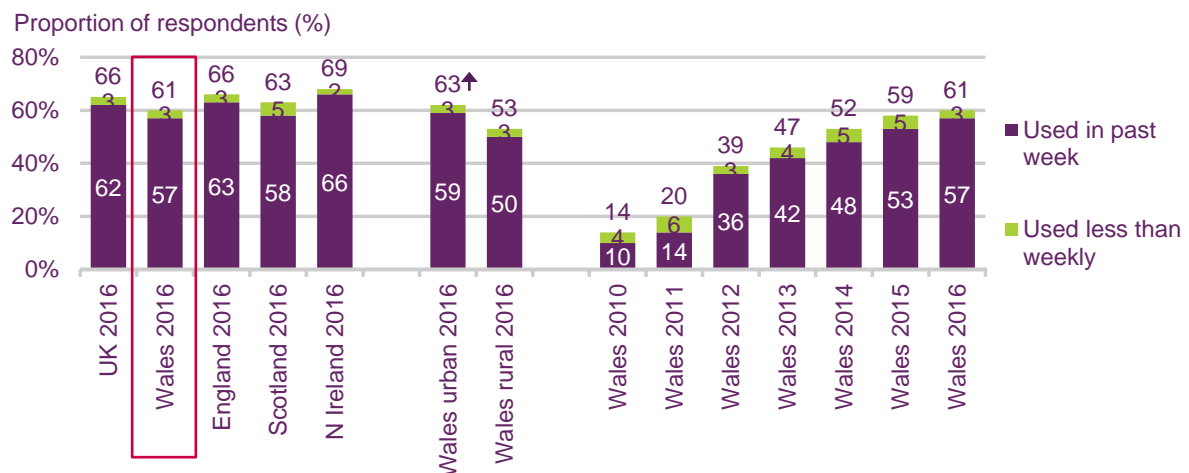
Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016 for each measure.

QE9: Which of these methods does your household use to connect to the internet at home?

Six in ten adults in Wales had been online using their mobile phone in the previous week

Six in ten adults in Wales said they had used their mobile phone to access the internet in 2016, with almost all of those respondents saying they had done so in the previous week. These figures were in line with those for the UK as a whole, and were largely unchanged since 2015. In 2016, adults in urban Wales were more likely than those in rural areas to say they had used their mobile phone to go online (63% vs. 53%).

Figure 4.10 Proportion of adults who have used a mobile phone to access the internet



Source: Ofcom Technology Tracker, H1 2016

Base: All adults aged 16+ (n = 3737 UK, 489 Wales, 2239 England, 502 Scotland, 507 Northern Ireland, 249 Wales urban, 247 Wales rural, 1075 Wales 2010, 493 Wales 2011, 513 Wales 2012, 492 Wales 2013, 491 Wales 2014, 496 Wales 2015, 489 Wales 2016)

QD28A-B. Which, if any, of the following activities, other than making and receiving calls, do you use your mobile for?/ And which of these activities have you used your mobile for in the last week?

The proportion of 4G users in Wales is up by 21 percentage points since 2015

More than four in ten (44%) adults in Wales reported that they had a 4G mobile service in 2016, broadly consistent with the UK overall figure of 48%. In the year to 2016, the proportion of adults in Wales with a 4G service increased by 21 percentage points, up from 23% in 2015. This is probably due to the increased availability of 4G services (see Figure 4.110).

Figure 4.11 4G take-up, by nation



Source: Ofcom Technology Tracker, H1 2016

Base: All adults aged 16+ (n = 3737 UK, 489 Wales, 2239 England, 502 Scotland, 507 Northern Ireland)

Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016. A circle around the +/- figure above the chart indicates any significant difference between 2015 and 2016 for Wales.

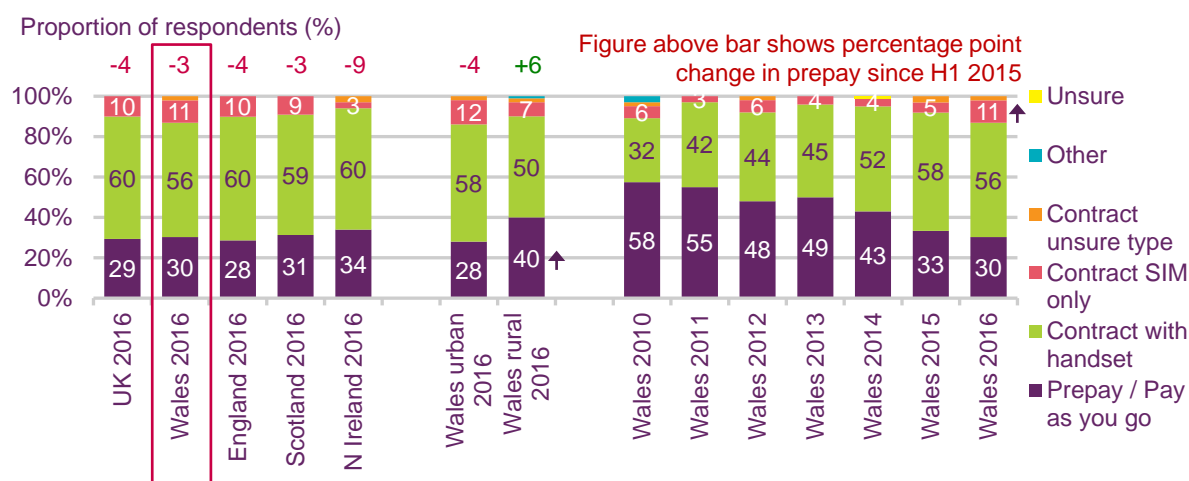
QD41. Do you have a 4G service? This is a service that enables faster mobile internet access

Compared to 2015, adults in Wales with a mobile phone are more likely to be on a SIM-only contract

In 2016, more than half (56%) of mobile users in Wales said they 'most often' used a pay-monthly contract package (with handset), while three in ten used a pre-pay phone, both in line with the UK averages. Among mobile users in Wales, there was an increase since 2015 in mobile users with a SIM-only package (11% vs. 5%).

In 2016, mobile users in rural areas were more likely than those in urban areas to say they mostly used a pre-pay phone (40% vs. 28%), with no other significant differences in type of mobile phone package by location.

Figure 4.12 Type of mobile subscription



Source: Ofcom Technology Tracker, H1 2016

Base: Adults aged 16+ who personally use a mobile phone (n = 3425 UK, 445 Wales, 2083 England, 451 Scotland, 446 Northern Ireland, 216 Wales urban, 229 Wales rural, 923 Wales 2010, 416 Wales 2011, 456 Wales 2012, 440 Wales 2013, 438 Wales 2014, 439 Wales 2015, 445 Wales 2016)

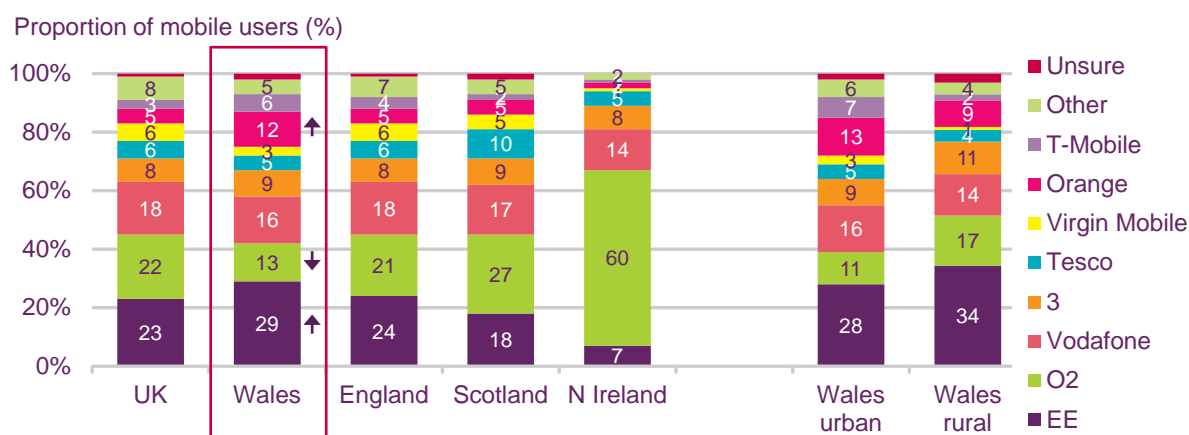
Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016, between Wales urban and rural in 2016 and between Wales 2015 and 2016. Circles around the +/- figures above the chart indicate any significant difference between 2015 and 2016 for Wales, urban and rural.

QD11: Which of these best describes the mobile package you personally use most often?

Respondents in Wales say that EE is the mobile network provider they use most often

Twenty-nine per cent of mobile users in Wales said EE was the network they used most often, compared to just under a quarter across the UK as a whole. In Wales this was followed by Vodafone (16%) and O2 (13%), although mobile users in Wales were less likely than all UK mobile users to use O2 (13% vs. 22%).

Figure 4.13 Mobile network provider used most often



Source: Ofcom Technology Tracker, H1 2016

Base: Adults aged 16+ who personally use a mobile phone (n = 3425 UK, 445 Wales, 2083 England, 451 Scotland, 446 Northern Ireland, 216 Wales urban, 229 Wales rural)

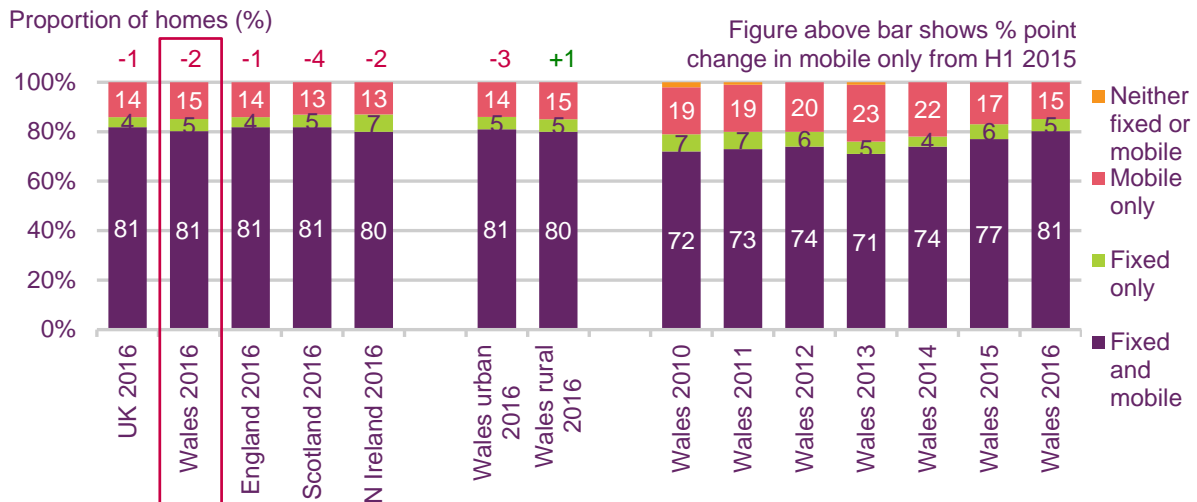
Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016 and between Wales urban and rural in 2016.

QD10: Which mobile network do you use most often?

The number of mobile-only households in Wales remains unchanged since 2015

Four in five households in Wales had both fixed and mobile telephone services in 2016. Five per cent of households had access to a fixed line only, and 15% had access to a mobile phone only. There were no significant changes in any of these figures since 2015.

Figure 4.14 Cross-ownership of household telephony services



Source: Ofcom Technology Tracker, H1 2016

Base: All adults aged 16+ (n = 3737 UK, 489 Wales, 2239 England, 502 Scotland, 507 Northern Ireland, 240 Wales urban, 249 Wales rural, 1075 Wales 2010, 493 Wales 2011, 513 Wales 2012, 492 Wales 2013, 491 Wales 2014, 496 Wales 2015, 489 Wales 2016)

Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016, between Wales urban and rural in 2016 and between Wales 2015 and 2016. Circles around the +/- figures above the chart indicate any significant difference between 2015 and 2016 for Wales, urban and rural.

QC1: Is there a landline phone in your home that can be used to make and receive calls?/ QD1: How many mobile phones in total do you and members of your household use?

4.5 Satisfaction with telecoms services

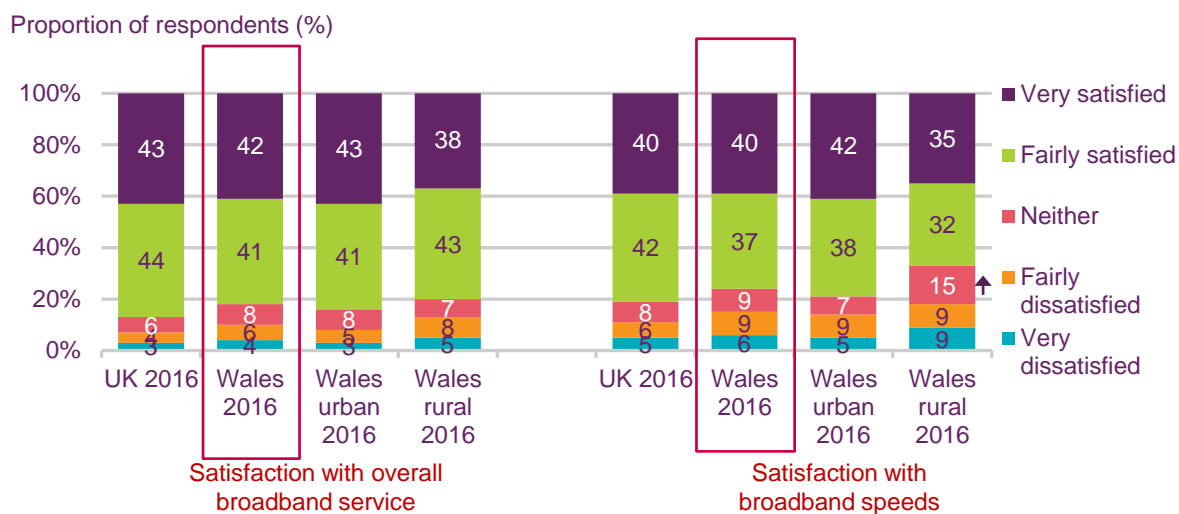
Rural internet users in Wales are less likely than those in urban areas to be satisfied with fixed broadband speeds

More than eight in ten broadband users in Wales (83%) were either 'very' or 'fairly' satisfied with their overall broadband service in 2016. This figure is comparable to the UK as a whole (87%). Conversely, a significantly lower proportion of mobile users were either 'very' or 'fairly' dissatisfied with the overall service in Wales, also comparable to the UK as a whole (9% vs. 7% in the UK). Compared to a year ago, there was no significant change in overall levels of satisfaction with fixed broadband services in Wales, or in the UK overall.

Satisfaction with fixed broadband speeds in Wales was also comparable to the UK as a whole, with no significant change in this measure in Wales, or in the UK overall, between 2015 and 2016.

Although there was no significant difference in overall satisfaction with broadband services in rural and urban areas of Wales, urban users were more likely than rural users to say they were satisfied with their broadband speed (80% vs. 66%). This difference was also observed in 2015. In comparison, rural users were more likely to be neutral when asked about satisfaction with broadband speeds (15% vs 7%).

Figure 4.15 Satisfaction with overall service and speed of fixed broadband connection



Source: Ofcom Technology Tracker, H1 2016

Base: Adults aged 16+ with a fixed broadband connection at home (n = 2774 UK, 363 Wales, 183 Wales urban, 180 Wales rural)

Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016 and between Wales urban and rural in 2016.

QE8A/B: Thinking about your fixed broadband internet service, how satisfied are you with (main supplier) for the overall service/ for the speed of your service while online (not just the connection)?

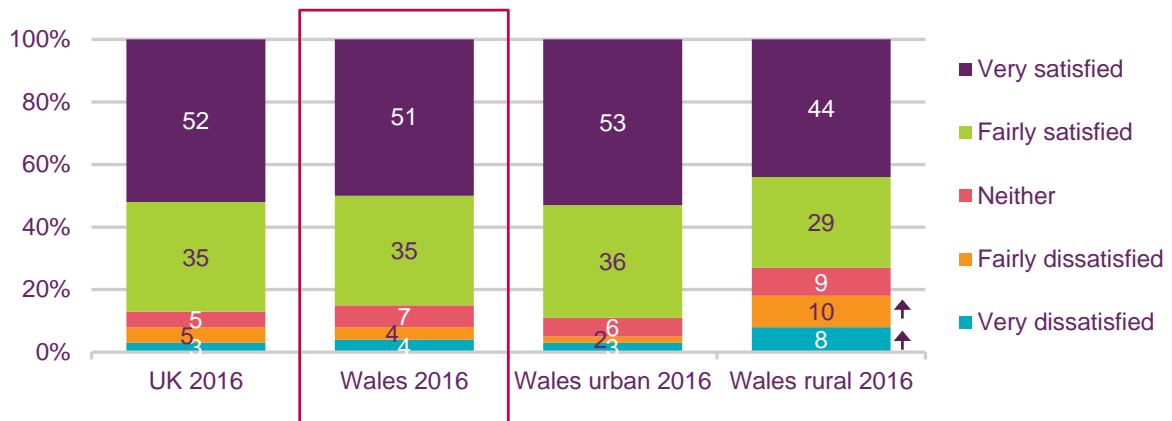
Satisfaction with mobile phone reception is lower among mobile phone users in rural areas of Wales

Almost nine in ten (86%) mobile phone users in Wales were ‘very’ or ‘fairly’ satisfied with their mobile phone reception in 2016, while only 8% of users said they were ‘very’ or ‘fairly’ dissatisfied. Overall satisfaction levels in Wales were in line with the UK as a whole (87%) and unchanged since 2015.

As in 2015, users in urban areas were more likely than those in rural areas to say they were satisfied with their mobile reception (89% vs. 73%). Conversely, rural users were more likely to be dissatisfied (18% vs. 5%).

Figure 4.16 Satisfaction with reception of mobile service

Proportion of respondents (%)



Source: Ofcom Technology Tracker, H1 2016

Base: Adults aged 16+ who personally use a mobile phone (n = 3425 UK, 445 Wales, 216 Wales urban, 229 Wales rural.)

Significance testing: Arrows indicate any significant differences at the 95% confidence level between Wales and UK in 2016, between Wales urban and rural in 2016.

QD21J: Thinking about your mobile phone service only, how satisfied are you with (main supplier) for reception/ accessing network?