

Article

Variant household projections for England: 2016-based

Indication of the future number of households in England under a range of alternative assumptions – these figures do not replace the principal household projections.



Contact:
Saffron Weeks
pop.info@ons.gov.uk
+44 (0)1329 444661

Release date:
16 May 2019

Next release:
To be announced

Table of contents

1. [Introduction](#)
2. [Things you need to know about this release](#)
3. [Projecting household representative rates through to 2041 results in a large reduction in the projected number of households](#)
4. [The 10-year migration variant has a greater effect in some areas of England than others](#)
5. [Households with dependent children show the largest difference to the principal projection under the migration variants](#)
6. [Households with two or more adults headed by those aged 70 years and over increase under the projected household representative rate variant](#)
7. [Quality and methodology](#)

1 . Introduction

This article presents data for variant household projections, following the publication of the [2016-based household projections](#) on 20 September 2018, [2016-based household type projections](#) on 3 December 2018 and [variant subnational population projections](#) on 9 April 2019. Four variant household projections have been produced in this release: three show alternative assumptions of migration and one is a continuous projection of the household representative rates (HRRs), which were held constant from 2022 onwards in the principal projection.

These variant projections have been produced in response to the Office for Statistics Regulation's (OSR) recommendation in their [Compliance Check of Household Projections for England](#), that the Office for National Statistics (ONS) prioritise the publication of additional variant projections in a way that is most helpful to users. We have consulted with users of the household projections who highlighted a need to understand the impact of different scenarios and better understand the uncertainty involved in projections. This would allow them to better prepare for potential future changes that could possibly affect their housing and service provision planning. The variants produced in this report were identified as the most useful to our users.

Two other variants were also identified as useful to users but have not been included in this article. These were: firstly, a variant that projects family units instead of households and secondly, a variant that shows higher HRRs for 25- to 44-year-olds. Data for these variants have not been included in this article because further research is required to identify the most appropriate method for adjusting the assumptions underpinning them. We are aware of users' interest in these variants and will continue to investigate how best to produce these data in the future.

These variant household projections do not replace the previously published 2016-based principal household projections. Instead, they should be used alongside the principal projections and have been created to offer users a range of alternate scenarios to illustrate the consequences of particular sets of assumptions. This article highlights the most notable differences between the principal projections and the variant projections.

2 . Things you need to know about this release

What is a household projection?

The 2016-based household projections provide statistics on the potential future number of households in England and its local authorities up to 2041 under a set of principal assumptions. They show the household numbers that would result if the assumptions based in previous demographic trends in population and household formation were to be realised in practice.

This release provides statistics on four variant household projections. In three of the variants, we have changed some of the underlying assumptions about migration and in the fourth we have continued to project forward the household representative rates (HRRs), all with the aim of showing the number of households that would result in each of the varying scenarios.

Household projections are not forecasts. They do not attempt to predict the impact of future government or local policies, changing economic circumstances or other factors that may influence household growth, such as the number of houses built. Household projections are not a prediction or forecast of how many houses should be built in the future. The principal projection shows how many additional households would form if the population of England keeps growing as it did between 2011 and 2016 and keeps forming households as it did between 2001 and 2011. Therefore, household projections should be used as a starting point for calculating the future housing needs of a local area.

What are variant projections?

This article provides the number of households that would form under four variant assumptions, rather than the full set of assumptions used in the principal 2016-based household projections.

The high international migration and low international migration variants are produced broadly using the same methods as the 2016-based subnational population projections main release (the principal), except that the totals are constrained to match those in the 2016-based high and low migration variant national population projections for England.

The 10-year migration variant projection uses migration data from years ending mid-2007 to mid-2016 to set the migration assumptions of the projection. This differs from the five years' worth of data (years ending mid-2012 to mid-2016) used in the principal projection and the high and low international migration variants. The 10-year migration variant includes different methodologies because of the time range of data used to set assumptions. Further information about these changes can be found in the [Quality and Methodology Information](#) report and the [methodology report](#) released with the variant subnational population projections.

Like the 2014-based household projections, the 2016-based household projections use HRRs, multiplied by the projected household population, to produce projected numbers of households. The HRR is the proportion of people in a particular demographic group (based on geography, age group and sex) who were the household reference person (HRP)¹. The value of the HRR will be between zero and one. HRRs for 2001 and 2011 are calculated using census data. These HRRs are then projected forward to produce HRRs for the other years of the projection period and applied to the projected household population to produce a projected number of households for 2001 to 2021.

There is general acknowledgement that between 1971 and 2001, average household size declined, and household formation increased. Between 2001 and 2011, these trends slowed down; average household size remained broadly the same and household formation did not increase as much. It is unclear whether these more recent trends were a blip in the long-term trend (this being an unusual decade due to EU Accession and the financial crisis), or the start of a longer-term trend. Therefore, the principal projection only projects the HRRs forward 10 years from 2011 to 2021.

Unlike the principal 2016-based household projections, the fourth variant continues to project the HRRs forward all the way to 2041, to see the potential effect on household formation if the recent trends we have observed continue in the future. Further information about the methodology used to produce the principal household projections can be found in the [household projections methodology report](#).

Notes for: Things you need to know about this release

1. The household reference person (HRP) is the eldest economically active person in the household. A full explanation of the HRP definition can be found on [page 23 of the 2011 Census Glossary](#).

3 . Projecting household representative rates through to 2041 results in a large reduction in the projected number of households

For England, the projected household representative rate (HRR) variant results in a large reduction in the projected number of households by mid-2041, with 845,500 fewer households than the principal projection. All the regions of England have large reductions compared with the principal projection. London is the region with the largest reduction, with 329,200 fewer households in the projected HRR variant as compared with the principal projection (Table 1).

Table 1: Difference in the number of households by region between the principal projection and the projected HRR variant by mid-2041, England

Region	Number of households		Difference
	Principal projection	Projected HRR variant	
England	26,855,000	26,009,500	-845,500
London	4,291,800	3,962,600	-329,200
South East	4,431,200	4,305,100	-126,100
East of England	3,065,000	2,972,300	-92,700
West Midlands	2,742,900	2,674,000	-68,900
South West	2,799,300	2,736,000	-63,300
East Midlands	2,312,100	2,253,200	-58,900
Yorkshire and the Humber	2,545,100	2,495,700	-49,500
North West	3,424,100	3,379,100	-45,000
North East	1,243,400	1,231,400	-11,900

Source: Office for National Statistics - 2016-based variant household projections

Notes

1. Figures may not sum due to rounding. [Back to table](#)
2. HRR refers to household representative rate. [Back to table](#)

Most local authorities also have a reduction in projected households in the projected HRR variant compared with the principal projections (Table 2). Only 14 of the 326 local authorities in England have a larger number of projected households in the projected HRR variant, compared with the principal projection.

Table 2: The 10 largest percentage reductions in the number of households by local authority between the principal projection and the projected HRR variant by mid-2041, England

Local authority	Number of households		Percentage difference
	Principal projection	Projected HRR variant	
Newham	145,100	118,200	-18.54
Camden	136,200	120,000	-11.90
Greenwich	142,500	127,300	-10.64
Harrow	99,400	89,300	-10.21
Waltham Forest	125,400	112,900	-9.97
Brent	134,400	121,000	-9.93
Leicester	146,500	132,100	-9.84
Ealing	139,400	125,700	-9.83
Haringey	135,800	122,800	-9.57
Westminster	136,600	124,300	-9.04

Source: Office for National Statistics - 2016-based variant household projections

Notes

1. Figures may not sum due to rounding. [Back to table](#)
2. HRR refers to household representative rate. [Back to table](#)

Figure 1: The projected number of households in most local authorities is lower under the projected HRR variant

Percentage difference in number of households for local authorities in England between the projected HRR variant and the principal projection by mid-2041

[Download the data](#)

4 . The 10-year migration variant has a greater effect in some areas of England than others

Differences in the projected numbers of households are caused by lower average levels of migration in some areas and higher average levels of migration in others in the 10-year migration variant compared with the 5-year average used in the principal projection. Additionally, there is a subsequent indirect impact on numbers of births and deaths.

Table 3 shows the details for regions and Table 4 shows the details for local authorities.

Table 3: Difference in the number of households by region between the principal projection and the 10-year migration variant by mid-2041, England

Region	Number of households		Difference
	Principal projection	10-year migration variant	
England	26,855,00	26,854,500	-500
Yorkshire and The Humber	2,545,100	2,567,200	22,100
South East	4,431,200	4,448,400	17,200
East of England	3,065,000	3,075,700	10,700
North East	1,243,400	1,250,200	6,800
London	4,291,800	4,289,200	-2,500
East Midlands	2,312,100	2,304,500	-7,600
North West	3,424,100	3,414,400	-9,700
South West	2,799,300	2,788,000	-11,300
West Midlands	2,742,900	2,716,800	-26,200

Source: Office for National Statistics - 2016-based variant household projections

Notes

1. Figures may not sum due to rounding. [Back to table](#)

By mid-2041, under the 10-year migration variant, the City of London is projected to have 1,200 more households than the principal projection, a difference of 32.21%, although it should be noted that the relatively small population size of the City of London can result in large percentage changes in variants.

Table 4 shows the local authorities with the largest increases between the principal projection and the 10-year migration variant by mid-2041.

Table 4: Largest increases in number of households by local authority between the principal projection and the 10-year migration variant by mid-2041, England

Local authority	Number of households		Percentage difference
	Principal projection	10-year migration variant	
City of London	3,600	4,800	32.21
East Cambridgeshire	43,700	47,100	7.67
Swindon	108,200	114,100	5.52
Copeland	28,100	29,500	5.23
Hertsmere	49,000	51,500	5.23
Ealing	139,400	146,600	5.14
Merton	92,200	96,900	5.10
West Oxfordshire	50,900	53,500	5.10
West Devon	27,200	28,500	4.94
Harrow	99,400	104,300	4.91

Source: Office for National Statistics - 2016-based variant household projections

Notes

1. Figures may not sum due to rounding. [Back to table](#)

Table 5 shows the local authorities with the largest percentage reductions between the principal projection and the 10-year migration variant projection by mid-2041.

Table 5: Largest percentage reductions in number of households by local authority between the principal projections and the 10-year migration variant by mid-2041, England

Local authority	Number of households		Percentage difference
	Principal projection	10-year migration projection	
Coventry	188,900	175,800	-6.93
Exeter	64,500	60,000	-6.92
Isles of Scilly	1,000	1,000	-6.62
Greenwich	142,500	134,200	-5.79
Tower Hamlets	176,700	167,200	-5.41
Liverpool	253,700	240,000	-5.38
Hackney	152,700	145,200	-4.87
Camden	136,200	129,700	-4.76
Aylesbury Vale	101,900	97,200	-4.68
Wealden	86,600	82,500	-4.65

Source: Office for National Statistics - 2016-based variant household projections

Notes

1. Figures may not sum due to rounding. [Back to table](#)

London's local authorities generally have the largest percentage differences in the high and low international migration variants because London has the greatest flows of international migrants so is most impacted by a net loss or gain in the migration variants. This is also reflected in the 2016-based variant subnational population projections.

5 . Households with dependent children show the largest difference to the principal projection under the migration variants

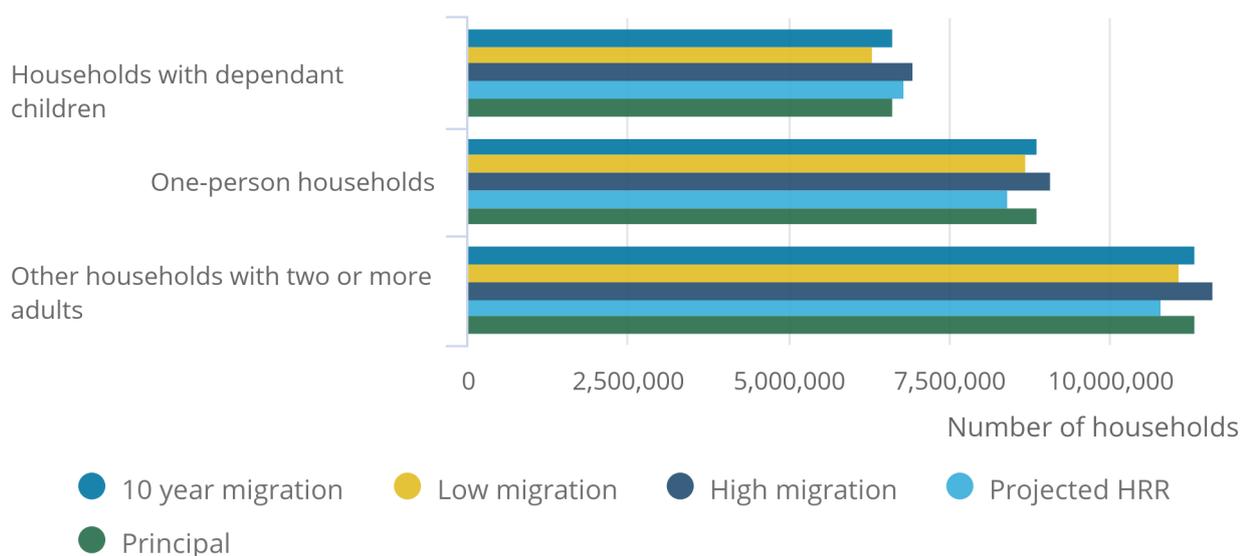
Households with dependent children are most affected by the variant projections. In England, there are an additional 11,100 households with dependent children in the 10-year migration variant compared with the principal projection and an additional 307,600 households with dependent children in the high migration variant by mid-2041. In the low migration variant there are 309,300 fewer households than the principal projection (Figure 2).

Figure 2: Households with dependent children show the largest difference to the principal projection under the migration variants

Projected number of households by household type for the principal and variant household projections by mid-2041, England

Figure 2: Households with dependent children show the largest difference to the principal projection under the migration variants

Projected number of households by household type for the principal and variant household projections by mid-2041, England



Source: Office for National Statistics - 2016-based variant household projections

Under the principal projection, one-person households headed by someone aged 65 years and over and other households with two or more adults headed by someone aged 65 years and over were projected to have the largest increases. The same pattern can be observed in each of the variant projections, however, the migration variants differ from the principal projection, with a greater number of households with dependent children headed by persons aged under 65 years, which is expected given the typical younger age profile of international migrants.

6 . Households with two or more adults headed by those aged 70 years and over increase under the projected household representative rate variant

The household representative rate (HRR) is the proportion of people in a particular demographic group (based on geography, age group and sex) who were the household reference person. In the principal projection this is held constant from 2022, but in the projected HRR variant the HRR is continuously projected forward until 2041.

The projected HRR variant has the largest effect on households with two or more adults, with 545,000 fewer households than the principal projection, by mid-2041.

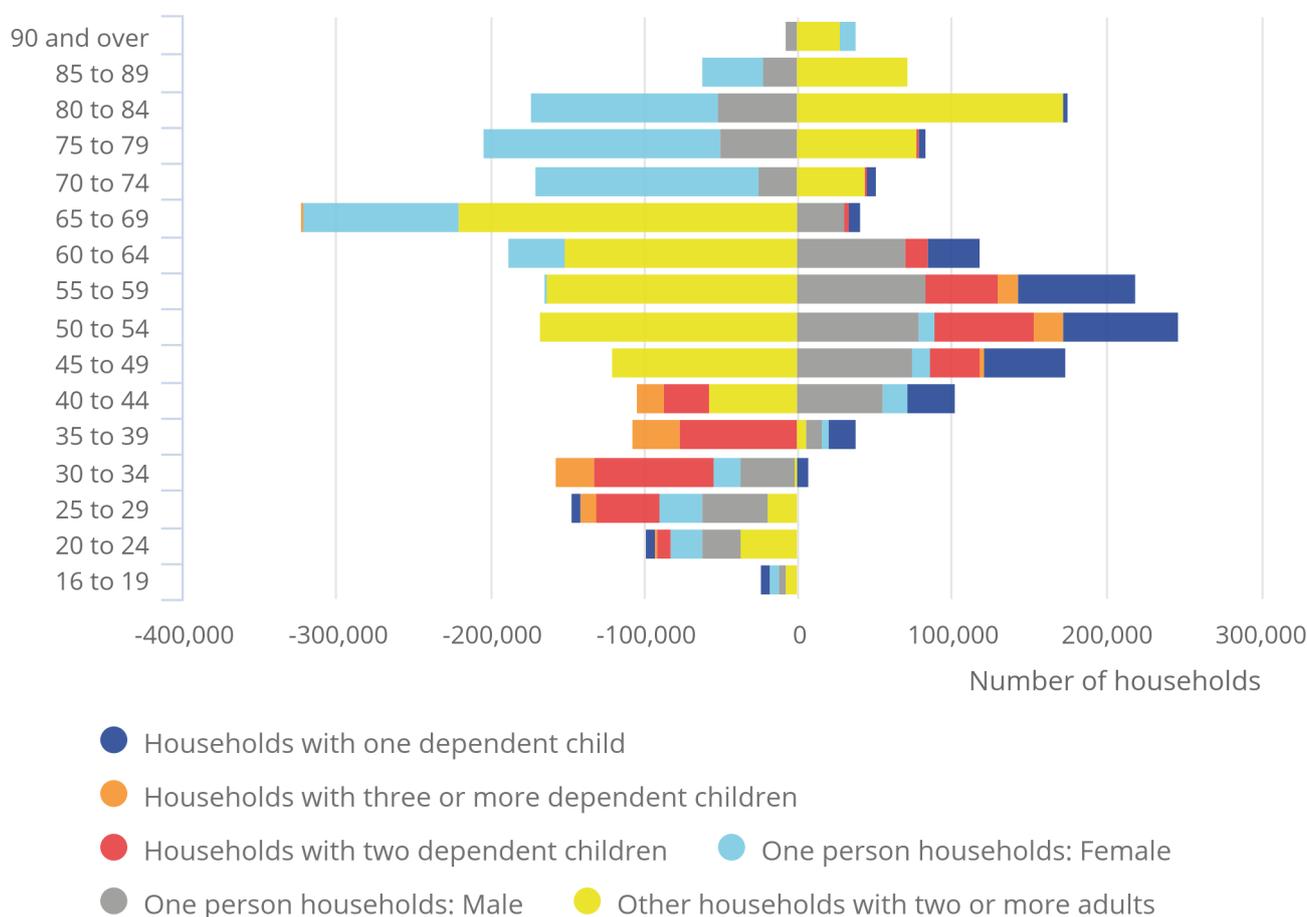
There are more households with two or more adults headed by someone aged 70 years and over in the projected HRR variant compared with the principal projection, while there are fewer households of this household type for those headed by someone aged under 70 years. There is an increase in this variant compared with the principal projection for one-person households and households with dependent children headed by those aged 35 to 70 years (see Figure 3).

Figure 3: Households with two or more adults headed by someone aged 70 years or over increase under the projected HRR variant

Difference in number of households by mid-2041 between the projected HRR variant and the principal variant, by household type and age of HRR, England

Figure 3: Households with two or more adults headed by someone aged 70 years or over increase under the projected HRR variant

Difference in number of households by mid-2041 between the projected HRR variant and the principal variant, by household type and age of HRR, England



Source: Office for National Statistics - 2016-based variant household projections

Notes:

1. HRR refers to household representative rate.

7. Quality and methodology

The Household projections [Quality and Methodology Information report](#) contains important information on:

- the strengths and limitations of the data and how it compares with related data
- uses and users of the data
- how the output was created
- the quality of the output including the accuracy of the data

The three migration variant projections produced in this article were produced in the same way as the 2016-based household projections, but the 2016-based variant subnational population projections (SNPPs) were input instead of the principal subnational population projections. The fourth variant, projected household representative rates (HRRs), was produced in the same way as the 2016-based household projections, using the principal 2016-based SNPPs, but projecting the HRRs through to 2041 and not holding them constant at 2021 rates from 2022 to 2041.

A [methodology report](#) was published alongside the principal 2016-based household projections, which details the methods used to create the household projections. [Methodology used to produce the 2016-based subnational population projections for England](#) includes further details on the migration variants.