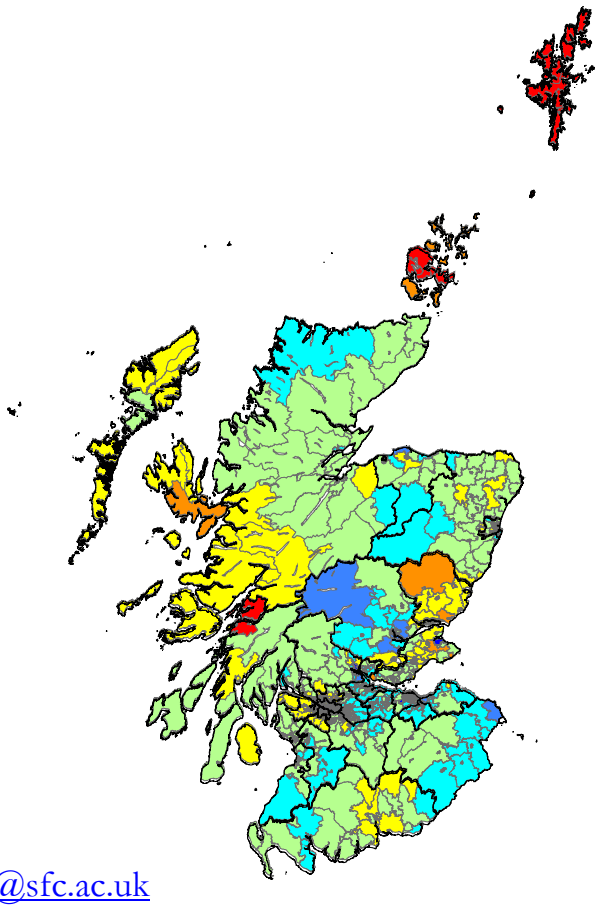
Scottish Funding Council
Promoting further and higher education

Scottish Participation in Further and Higher Education

2006-07 to 2010-11



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Contents

Key points

This report examines levels of participation by the Scottish post school leaving population at school, UK universities and Scotland's colleges. Participation has been measured both in terms of the number of participants and the number of full-time equivalents (FTE) which provides a useful indication of the volume of activity.

In further and higher education as a whole:

- although headcount numbers have declined for all ages, FTE numbers remain stable and for age group 16-19 show an increase;
- the total number of individuals studying at FE level has fallen continuously between 2006-07 and 2010-11 whilst the number at HE level has remained stable;
- over the five year period FE FTE has remained stable whilst HE FTE has increased, contributing to a continuous increase in FTE;
- since 2006-07 participation from both the deprived and less deprived classes has been falling;
- participation by young students (16-19 year old) in the most deprived class has continued its increase from 2006-07; and
- participation is higher among women than men in all age groups. In 2010-11, among those aged 16-19, 70 per cent of women attended school, college or university, compared to 65 per cent of men.

In college further education:

- the total numbers studying decreased by 11 per cent between 2009-10 and 2010-11, and FTE by three per cent. This is as a result of the move to more full-time courses at the expense of short part-time courses;
- relatively low headcount participation, compared to Scotland as a whole, is found in parts of Edinburgh, central Scotland and the Highlands;
- headcount participation for women has been decreasing since 2006-07;
- headcount participation for men increased between 2006-07 and 2007-08, but has since declined;
- in 2010-11, 74 per cent of students were studying for recognised qualifications, such courses accounted for 90 per cent of the total sector FTE; and

- in 2010-11 headcount participation in the most deprived class is 63 per cent higher than that in the less deprived areas. In FTE participation, FTE is almost twice as high in the most deprived class compared to less deprived.

In college and university higher education:

- the total numbers studying decreased slightly between 2009-10 and 2010-11 whilst FTE increased by one per cent;
- relatively low participation in higher education, compared to Scotland as a whole, is found in parts of Glasgow, Edinburgh, East Ayrshire, Forth Valley, East Lothian and east Fife;
- headcount participation is higher for women than men in all age groups;
- since 2006-07, in students under 21 years of age, there has been a decrease in female headcount participation, and an increase male headcount participation;
- headcount participation has increased for those studying at first degree level since 2007-08;
- since 2006-07, the number of students studying at Open University (OU) undergraduate level has also increased, whereas the number studying for 'Other undergraduate' has decreased; and
- in 2010-11 participation in the most deprived class is 72 per cent of that from less deprived areas. This is an increase from 62 per cent in 2006-07.

1. Introduction

This report seeks to provide the information needed to track changes in the pattern of participation by the Scottish post-school population, and to support the development of policies aimed at addressing any concerns regarding these patterns. This is achieved by presenting as complete a picture as is possible of post school leaving participation in further and higher education: how it has changed in recent years, how it varies across Scotland and the extent to which different segments of the population are under-represented. Thus, this report covers a wider area than the recently published (April 2012) report *Participation Rates for Entrants to Scottish Higher Education*, which only deals with entrants to higher education.

Combining higher and further education with data on post-compulsory school education enables us to give a unique picture of participation in education amongst those aged 16 and over. Indeed, the report starts with this cross-sector overview before moving on to separate and more detailed examinations of further and higher education. This picture is still incomplete, as some forms of further education lie at least partly outside the college and university sectors[1]. Whilst a large part of Skills Development Scotland (SDS) provision is included in this report, it does not include all SDS provision. For example, many Modern Apprenticeships do take place at colleges, but not all. Also limited data is available on community education and on literacy and numeracy classes that take place outside of the college sector. In addition, job-related training is frequently supplied by private providers. Nonetheless, armed with local knowledge to aid interpretation, an examination of combined college and university participation can provide valuable insights, particularly where higher participation in one sector tends to offset relatively low participation in the other.

Our focus is very much on rates of participation in the Scottish population: the proportion of an area's population engaged in education. Thus, the report does not attempt to replicate information presented elsewhere on the supply of education. Supply has been described in detail in various reports such as *Learning for All,* (Scottish Funding Council, 2011)*; Scottish Funding Council,* 2008*), Scotland's Colleges: a Baseline Report* (Scottish Funding Council, 2011) *and The Pattern of Subject Provision in Scotland's Colleges and Higher Education Institutions* (Scottish Funding Council, 2007).

[1] Throughout this report we use the word 'college' to refer to colleges in Scotland that provide mainly further education and higher education in the form of Higher National qualifications. The word 'university' is used to refer to universities and other higher education institutions.

A series of earlier reports have examined participation in higher education (Raab and Storkey, 2001; Raab and Small, 2003), the most recent covering the period up to 2000-01. The report *Scottish participation in further and higher education, 2001-02 to 2006-07* (Scottish Funding Council, 2008) updated this analysis to look at changes between 2001-02 and 2006-07 and extending it to cover further education in the college sector. This report is an update which includes data for 2010-11.

Participation rates are affected by the number of new entrants, the duration or frequency of study and, where relevant, the extent to which students progress to subsequent years of their course. Thus, it should be kept in mind that trends in participation and differences between segments of the population may not be entirely due to variation in the likelihood of students entering further or higher education.

Participation rates have also been reported elsewhere (e.g. Scottish Funding Council, 2011; DTZ Pieda Consulting, 2005) but often using a range of approaches for defining both the student population and the population from which they are drawn. Geographical comparisons of participation rates are also open to misinterpretation given the way in which participation depends on the demographic composition of an area. Participation clearly varies by age and, as has become increasingly apparent in recent years, by gender. Thus, it is helpful to examine the extent to which geographical differences are explained simply by particular areas having, for example, a relatively old population or a gender imbalance.

Therefore, this report also aims to set up a framework for consistent reporting on participation, using the best available measures of student numbers and of the resident population. An account of the methodology can be found in Appendix 1. What follows is a summary of the approach used which serves as a guide to understanding the participation measures presented.

Student data comes from the Higher Education Statistics Agency (HESA) student records which cover all students studying at higher education institutions in the UK; the Further Education Statistics (FES) records held by the SFC which cover students at colleges in Scotland; and the pupil census of publicly-funded schools in Scotland.

For the college and university data, activity has been measured in terms of the number of FTE as well the actual number of students (headcount). FTE has been estimated for each student in relation to the normal study requirements of full-time, full-year students. FTE provides a useful indicator of the amount of time devoted to education by the population.

Headcount on its own can be misleading, particularly in further education where courses can vary substantially in length and intensity.

Population figures are derived from the National Records of Scotland's (NRS) mid-year estimates. Because these figures record students at their term-time address, they have been adjusted to estimate the actual number of residents for each area. In calculating a participation rate we are interested in the proportion of an area's post school leaving residents engaging in education. Without adjustment, participation for areas with extensive student accommodation will be underestimated, as the number of domiciled residents is lower than the mid-year population figure suggests.

National levels of participation for student sub-groups have been presented as rates per thousand head of population both for headcount and FTE. However, to facilitate geographical comparisons participation rates have been standardised for age and gender. This is achieved through the use of a *Standardised Participation Ratio* (SPR) which compares the observed number of participants in an area with what would be expected if national participation rates, by age and gender, applied. The ratio of the observed to expected number provides a benchmark for each area in relation to national rates so that SPRs above or below one indicate that local participation is above or below national levels whilst taking account of the age-gender composition of the area.

The SPR has only been used to aid geographical comparisons and is not intended to hide the fact that there are important differences in participation by age and gender. These differences are also explored in each chapter.

For mapping, participation is presented for the areas defined by the Scottish Neighbourhood Statistics' Intermediate Geography. There are 1,235 of these *intermediate zones* in Scotland and they can be conveniently aggregated to provide results for local authorities. Data for some intermediate zones can be sparse and subject to random fluctuation and so some smoothing has been undertaken to facilitate detection of the underlying geographical patterns.

To examine change in participation within intermediate zones and local authorities, participation rates were standardised across the five years of the study. The resulting measure is termed the Standardised Participation Ratio for Trend, or Trend SPR for short. The Trend SPR will be greater than one for years with a higher participation than the national five-year average. To identify significant trends in headcount participation statistical models have been developed. Trends that are likely to be 'real', rather than due to

random fluctuations in participation have been highlighted in maps and tables.

Whilst this report examines current levels of participation and recent changes, it does not attempt to predict future changes. However, it is worth keeping in mind that projected population changes for local authority areas may have a significant effect on local demand. For example, the working age populations of Aberdeen City and East Dunbartonshire are projected to fall by 16 and 25 per cent respectively between 2006 and 2031. Conversely, the population of West Lothian is projected to increase by 17 per cent over the same period.

Finally, note that this is primarily a statistical report, presenting participation in a form to aid policy development and monitoring. It does not seek to explain or interpret its findings, except where there are clear influences, such as data recording changes, ignorance of which might result in misleading conclusions being reached.

Important statistical note

All participation rates are expressed as the number of participants (or FTE) per thousand population where the population aged 16 and over is used unless otherwise stated.

Rates for men and women and for different age groups are calculated using only the relevant population sub-group.

Some of the figures for 2006-07 to 2010-11 will be slightly different to those presented in previous participation reports. This is largely due to improved imputation of the information for students with missing home postcodes. Trends are largely unaffected by these changes.

The change to using SIMD 2009 version 2 has also affected the numbers in some of the deprivation tables, as datazones changed their SIMD ranking. Therefore, the numbers presented in the report will not be comparable to previous reports.

2. Participation in further and higher education combined

Subsequent chapters in this report focus on further and higher education study separately but here we bring the two together to provide a more complete overview of post-compulsory education. It is still not complete as our analysis is restricted to study within schools, colleges and universities because of availability of data. Almost all higher education (HE) takes place in the colleges and universities, but further education (FE) is extremely varied in nature and supplied by a range of providers. Although the colleges are the biggest provider, other providers play a major role in certain types of education such as leisure courses, work-based learning, and training programmes such as Modern Apprenticeships.

Thus, strictly speaking, the results presented here describe the Scottish post school leaving age population's engagement in education at schools, colleges and universities. In the college sector the type of provision will vary between colleges and also the extent to which they or other providers satisfy local demand. This should be borne in mind when interpreting the results: trends in participation may not reflect trends in the totality of adult education; trends may be affected by an increase or decrease in certain types of provision; and geographical differences can result from variation in the extent of college involvement in different types of further and higher education in a locality.

Nonetheless, there is considerable value to be gained by, for example, comparing the geographical variation in participation in further and higher education combined with that for the two separately, as presented in subsequent chapters. For example, relatively low participation in FE within an area may be counterbalanced by high participation in HE or a higher percentage of school pupils staying on after 16. Similarly, a decline in FE participation may indicate a switch to HE and so the combined trend is more stable.

Schools data come from the September schools census of publicly-funded schools and include pupils at special needs schools only as insufficient data are available on Scottish-domiciled pupils at independent schools. Although the total number of such pupils is relatively small in number their omission will have a disproportionate effect on the Edinburgh area where a significant proportion of pupils attend independent schools.

For each academic year, all pupils who will be aged 16 and over by the beginning of March have been included. Those who are still 15 in September are eligible to leave school in December and so we have unavoidably included some pupils who do not undertake post-compulsory

study. However, we have attempted to avoid the overlap with pupils who undertake part of their study at college.

The school census data has only been included in the overview section of this chapter, although school pupils attending college have been included throughout and the omission of non-college school pupils does not have a substantial effect on trends.

Further information on the data used and potential gaps can be found in the chapters on further and higher education and in the account of the methods used in Appendix 1.

As well as number of students (headcount), participation is also presented in terms of full-time equivalents (FTE). For students at universities, FTE is estimated with reference to a full-time full-year student who would normally receive an FTE of one. FTE for those on part-time courses or who leave part way through a year are estimated pro-rata on either a credit or time basis. For students in colleges in Scotland a broadly comparable FTE was calculated based on the number of hours of study as a proportion of the expected number of hours for a full-time course. For school pupils we assume that they are full-time and, in the absence of individual retention data, that they have an FTE of one. This will be an overestimate for some pupils, for example if they leave at the end of December. See Appendix 1 for more information.

2.1. Overview

Table 2.1.1 summarises the numbers and FTE of Scottish-domiciled students aged 16 and above studying at publicly-funded schools, colleges or universities according to their level of study. The main changes that are evident are that:

- the total number studying courses at Scotland's colleges and universities declined between 2006-07 and 2010-11;
- the overall headcount numbers studying HE at college or university have risen between 2007-08 and 2009-10 but then fell very slightly in 2010-11; and
- there has been a clear decline in FE headcount from 2006-07 to 2010-11. This is as a result of the move to more full-time courses at the expense of short part-time courses.

Figure 2.1.1 shows the headcount participation rates for FE and HE activity combined. As school participation was little changed over the period its inclusion would not have affected the trends. The figure indicates that the rate for FE is declining, while that for HE remains around the same level.

Table 2.1.1 Numbers and FTE for school, college and university participants aged 16 and over

a) Headcount

Location of Study	Level of study	2006-07	2007-08	2008-09	2009-10	2010-11	% change 2006-07 to 2010-11
		Count	Count	Count	Count	Count	
School	College Link (FE or HE) (a)	20,143	21,097	21,886	20,632	18,577	-7.8%
	All school (b)	**77,671**	**79,702**	**79,304**	**81,936**	**83,661**	**7.7%**
College	Studying FE only (c)	265,703	267,429	259,426	235,873	209,133	-21.3%
	Studying both FE and HE (d)	7,208	7,388	7,028	6,582	5,418	-24.8%
	Total FE	**272,911**	**274,817**	**266,454**	**242,455**	**214,551**	**-21.4%**
	Undergraduate	46,655	45,545	45,568	47,472	48,724	4.4%
	Postgraduate	146	109	108	103	87	-40.4%
	Total HE	**46,799**	**45,736**	**45,675**	**47,575**	**48,811**	**4.3%**
Scottish university	Undergraduate	144,354	140,809	143,233	144,806	142,702	-1.1%
	Postgraduate	30,370	28,997	28,569	28,635	28,353	-6.6%
	Total	**174,419**	**169,563**	**171,541**	**173,187**	**170,808**	**-2.1%**
Other UK university	Undergraduate	8,435	8,129	8,455	8,079	8,356	-0.9%
	Postgraduate	4,096	4,127	4,378	4,632	4,798	17.1%
	All	**12,493**	**12,229**	**12,809**	**12,686**	**13,126**	**5.1%**
College and university	**All HE (e)**	233,704	227,514	230,018	233,445	232,740	-0.4%
	All FE and HE (c+e)	**499,407**	**494,947**	**489,444**	**469,318**	**441,874**	**-11.5%**
School, college and university	**All (b - a +c+e)**	**556,935**	**553,552**	**546,862**	**530,622**	**506,958**	**-9.0%**

Notes

- The school figures come from the annual schools census of publicly-funded schools. Special needs pupils have been included. In 2010-11 school ages were defined as 16-19 years of age.
- The college figures include school-college link students.
- A small overlap exists between those studying at both a college and university in the same academic year. Thus the combined totals are slight over-estimates.
- There is an overlap between some levels of study as, for example, a student may enrol on an undergraduate and postgraduate course in the same year. In addition, a small number enrol at both a Scottish and an 'Other UK' university in the same year.
- Letters after the level of study indicate where figures have been derived from other figures in the table.

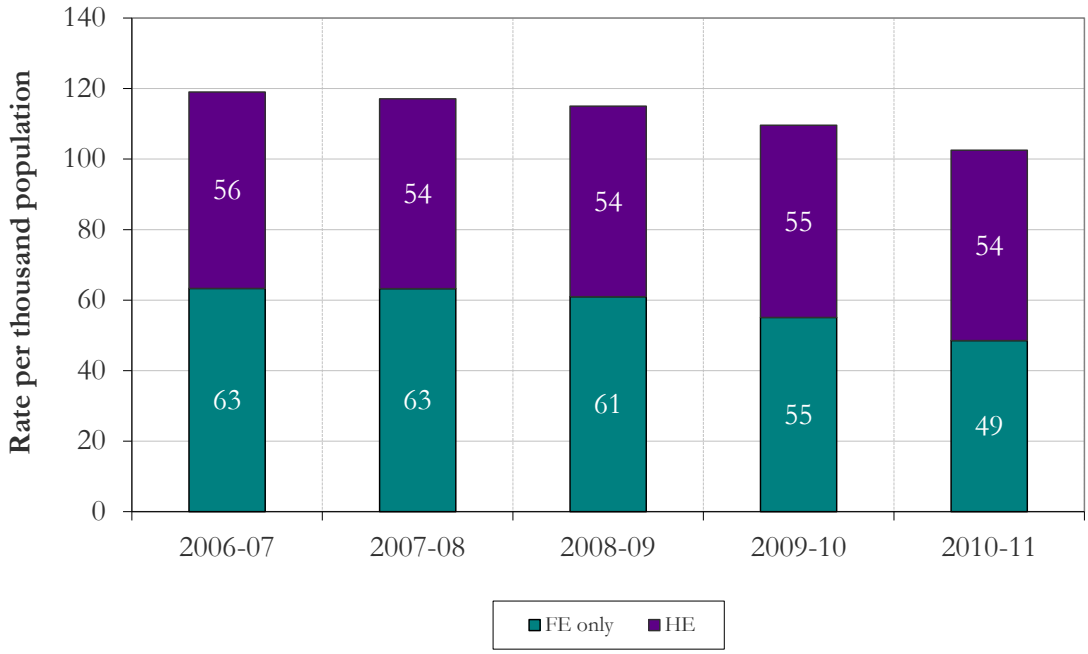
b) FTE

Location of study	Level of study	2006-07	2007-08	2008-09	2009-10	2010-11	% change 2006-07 to 2010-11
		FTE	FTE	FTE	FTE	FTE	
School	College Link (FE or HE) (a)	4,872	4,986	5,495	5,226	4,898	0.5%
College	Studying FE only (c)	73,675	74,912	76,934	76,211	74,136	0.6%
	Studying both FE and HE (d)	1,397	1,541	1,515	1,387	1,186	-15.1%
	Total FE	**75,065**	**76,444**	**78,443**	**77,592**	**75,310**	**0.3%**
	Undergraduate	30,697	29,816	30,941	33,081	35,240	14.8%
	Postgraduate	48	41	46	50	38	-21.1%
	Total HE	**30,746**	**29,870**	**30,987**	**33,131**	**35,284**	**14.8%**
Scottish university	Undergraduate	102,564	103,469	104,469	106,354	107,009	4.3%
	Postgraduate	15,973	15,846	15,406	15,252	14,288	-10.5%
	Total	**118,537**	**119,315**	**119,875**	**121,607**	**121,297**	**2.3%**
Other UK university	Undergraduate	6,195	6,229	6,196	6,070	6,322	2.0%
	Postgraduate	2,254	2,219	2,242	2,411	2,440	8.3%
	All	**8,449**	**8,449**	**8,438**	**8,481**	**8,762**	**3.7%**
College and university	**All HE (e)**	157,732	157,632	159,299	163,219	165,343	4.8%
	All FE and HE (c+e)	**232,184**	**233,317**	**236,953**	**240,030**	**240,059**	**3.4%**
School, college and university	**All (a +c+e)**	**227,312**	**228,331**	**231,458**	**234,804**	**235,161**	**3.5%**

Note

- The FTE for school-college link students is for their college study only.
- College FTE does not always sum to the totals because of the way a cap has been applied to an individual's FTE. See Appendix 1 for more information. Other FTEs may not sum due to rounding.
- The total FTE for school, college and university activity assumes school pupils have an FTE of one. This will not always be the case, for example, if a student leaves school at the end of December.

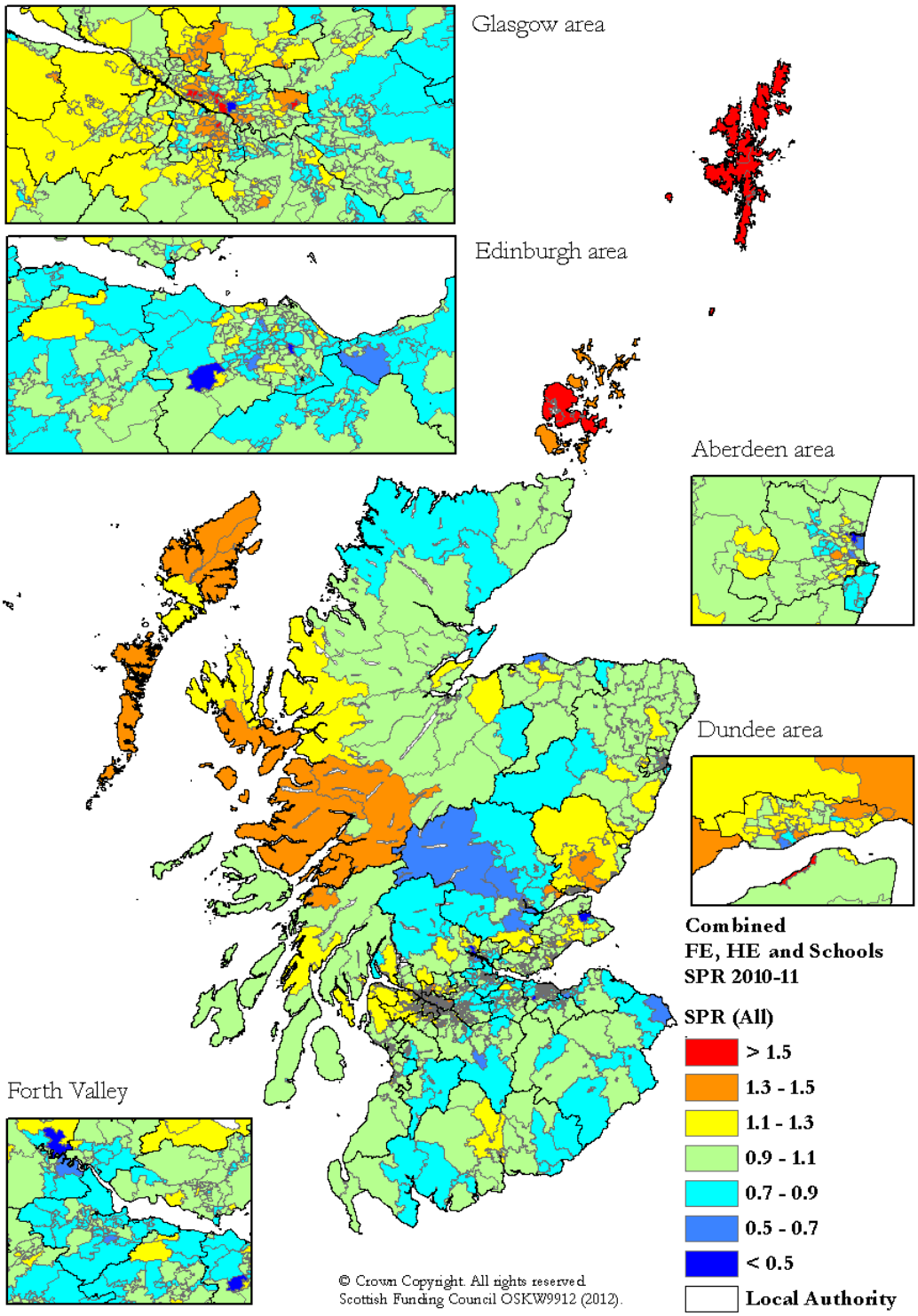
Figure 2.1.1 Trends in headcount participation rates for FE or HE activity



Geographical variation in headcount participation in FE, HE or school education in 2010-11 is illustrated in Figure 2.1.2. Shetland is notable as an area of high participation because of the nature of local provision.

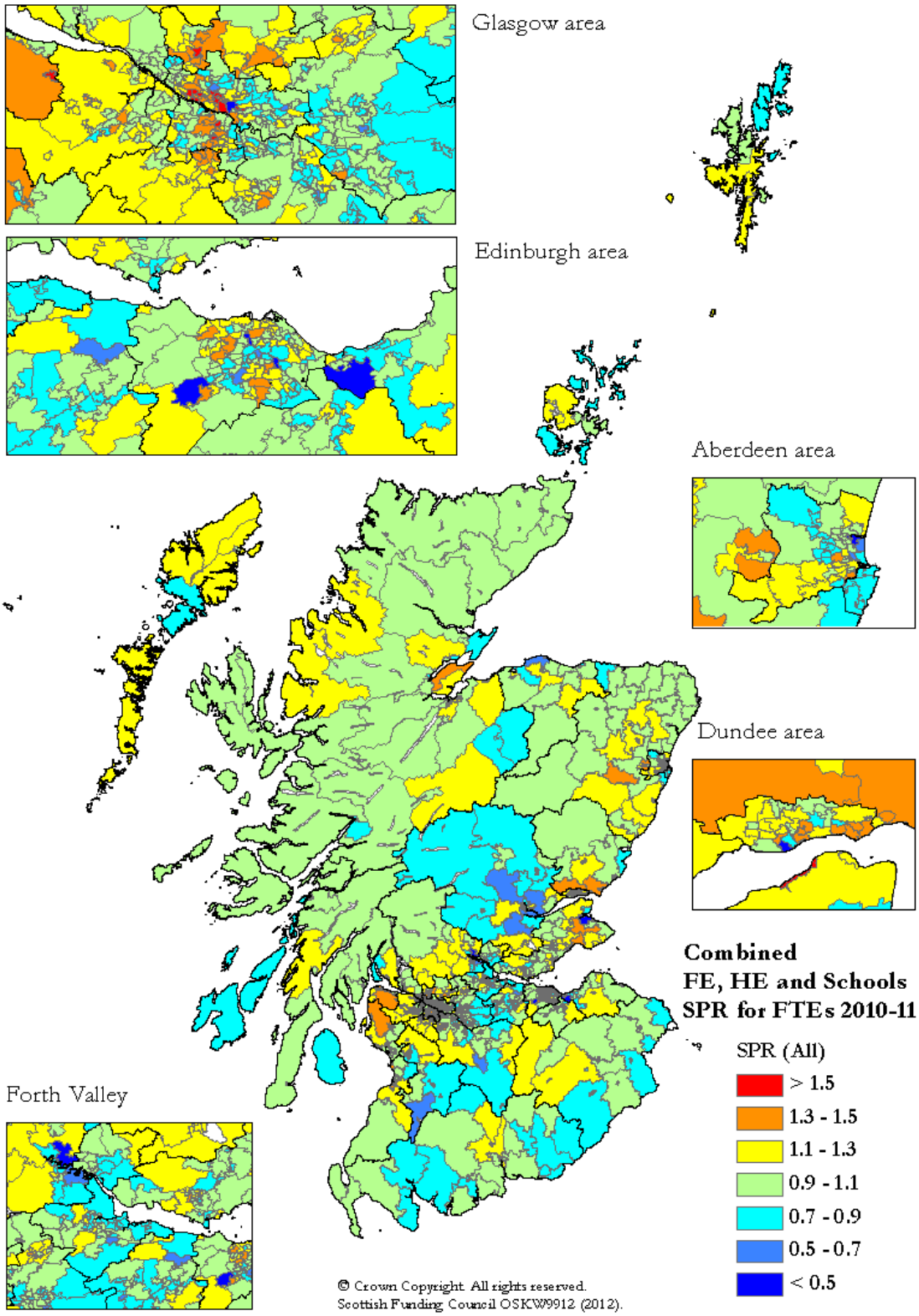
Variation in FTE participation is shown in Figure 2.1.3. Many areas with relatively low headcount participation are nearer the national average in terms of FTE because a smaller proportion of students are part-time. The reverse is true for Orkney and Shetland. Parts of Edinburgh, Aberdeen, Glasgow and central Scotland tend to have low participation for both headcount and FTE. A few areas, such as parts of Glasgow and Dundee, are relatively higher in terms of FTE because they tend to have a higher proportion of full-time students.

Figure 2.1.2 Geographical variation in headcount participation for school, FE or HE activity in 2010-11



Notes
The Standardised Participation Ratio (SPR) compares the number of participants in an area with what would be expected if national age-gender specific participation rates were applied to the area's population. The SPR ensures areas with differing age-gender distributions are comparable. The national SPR is one. Thus participation in areas in green is close to the national rates.

Figure 2.1.3 Geographical variation in FTE participation for school, FE or HE activity in 2010-11



Note
An FTE of one has been assumed for school pupils. This will be an over-estimate for pupils who leave in December.

2.2. Trends by age and gender

Trends by age and gender for further or higher education are summarised in Figure 2.2.1 and Figure 2.2.2. Across all the age groups, participation rates for women are higher than they are for men.

School pupils not studying at college have been excluded, but this does not appear to affect the trends, as illustrated by Figure 2.2.3. The figures show that:

- in 2010-11 the gap was greatest between men and women at age 20;
- headcount numbers have declined except for 16-19 year olds; and
- FTE has increased for 16-19 year olds and remained stable for other age groups.

If all school pupils are included, an estimated 70 per cent of women aged 16-19 attended school, college or university in 2010-11, compared to 65 per cent of men.

It should be noted that the difference in the overall participation rates ('All ages') is affected by the fact that there are rather more elderly women than men in the post school leaving population. As participation is low in the elderly they do have the effect of reducing overall rates and more so in women than men. Thus, the difference between men and women in the 'Working age' rates is rather larger than in the 'All ages' rate.

Figure 2.2.1 Headcount participation rates in FE or HE by age and gender

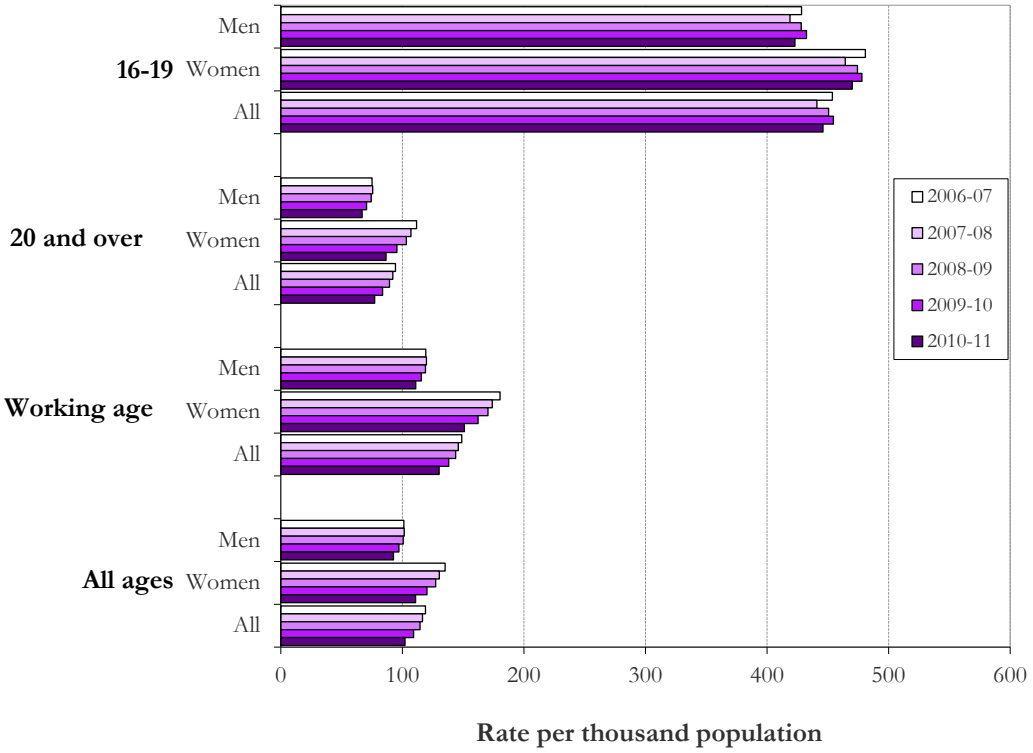
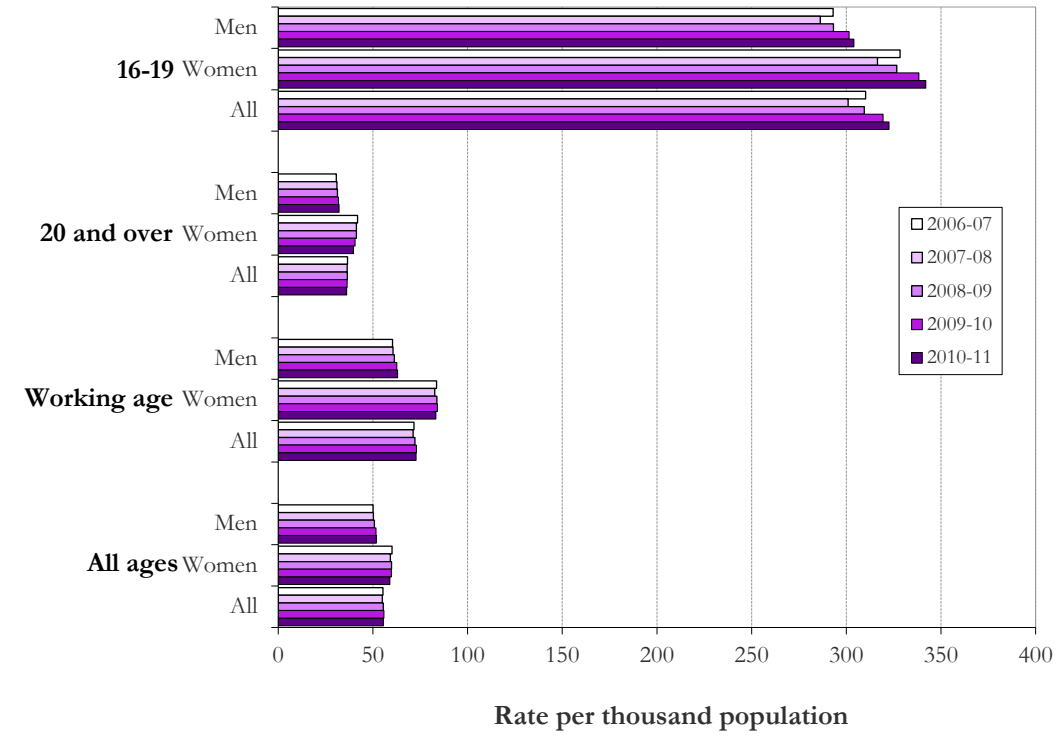
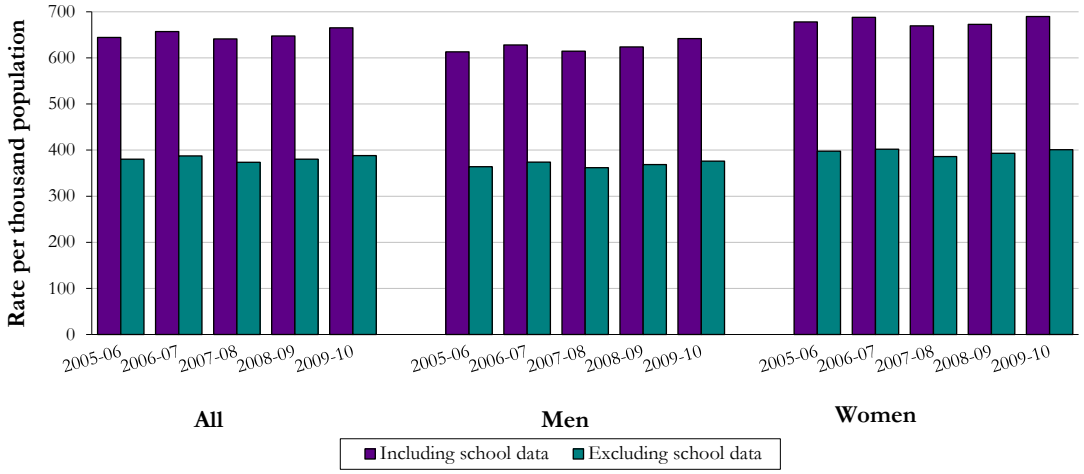


Figure 2.2.2 FTE participation rates in FE or HE by age and gender



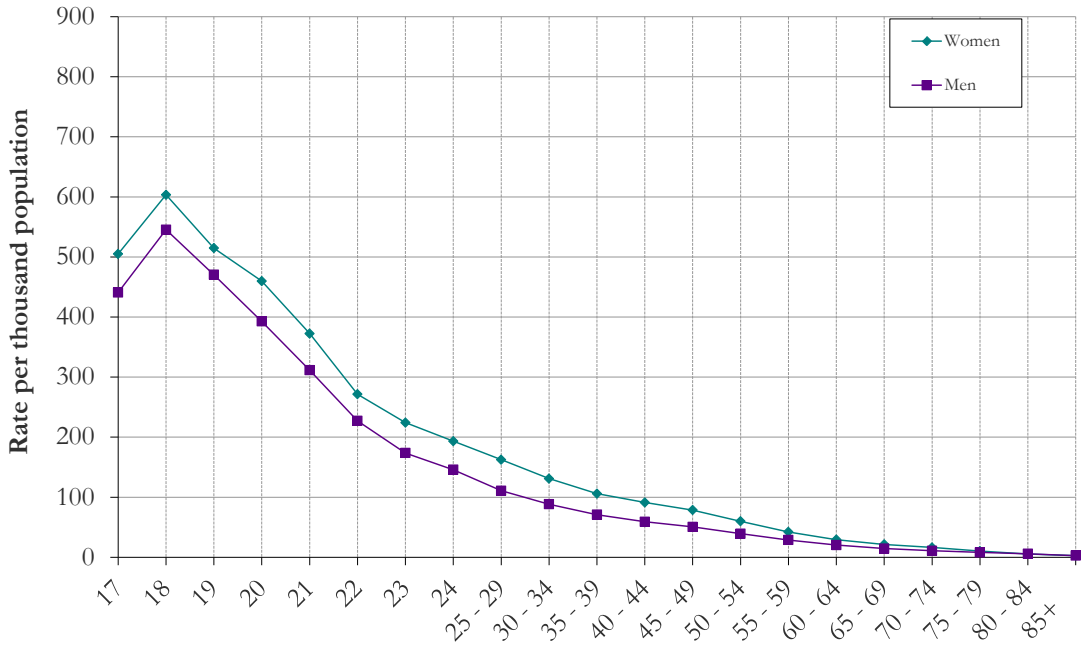
Note
Working age is defined as 16 to 59 years for women and 16 to 64 years for men.

Figure 2.2.3 Headcount participation in FE or HE amongst students aged 16-19, with school pupils included and excluded



The age distribution of participation by men and women in further or higher education activity in 2010-11 is shown in Figure 2.2.4. Participation is higher in women at all ages up to the age 74.

Figure 2.2.4 Participation rates in FE or HE by age and gender, 2010-11



2.3. Local authority trends

Table 2.3.1 summarises current levels of participation in further or higher education by local authority and trends since 2006-07.

In 2010-11:

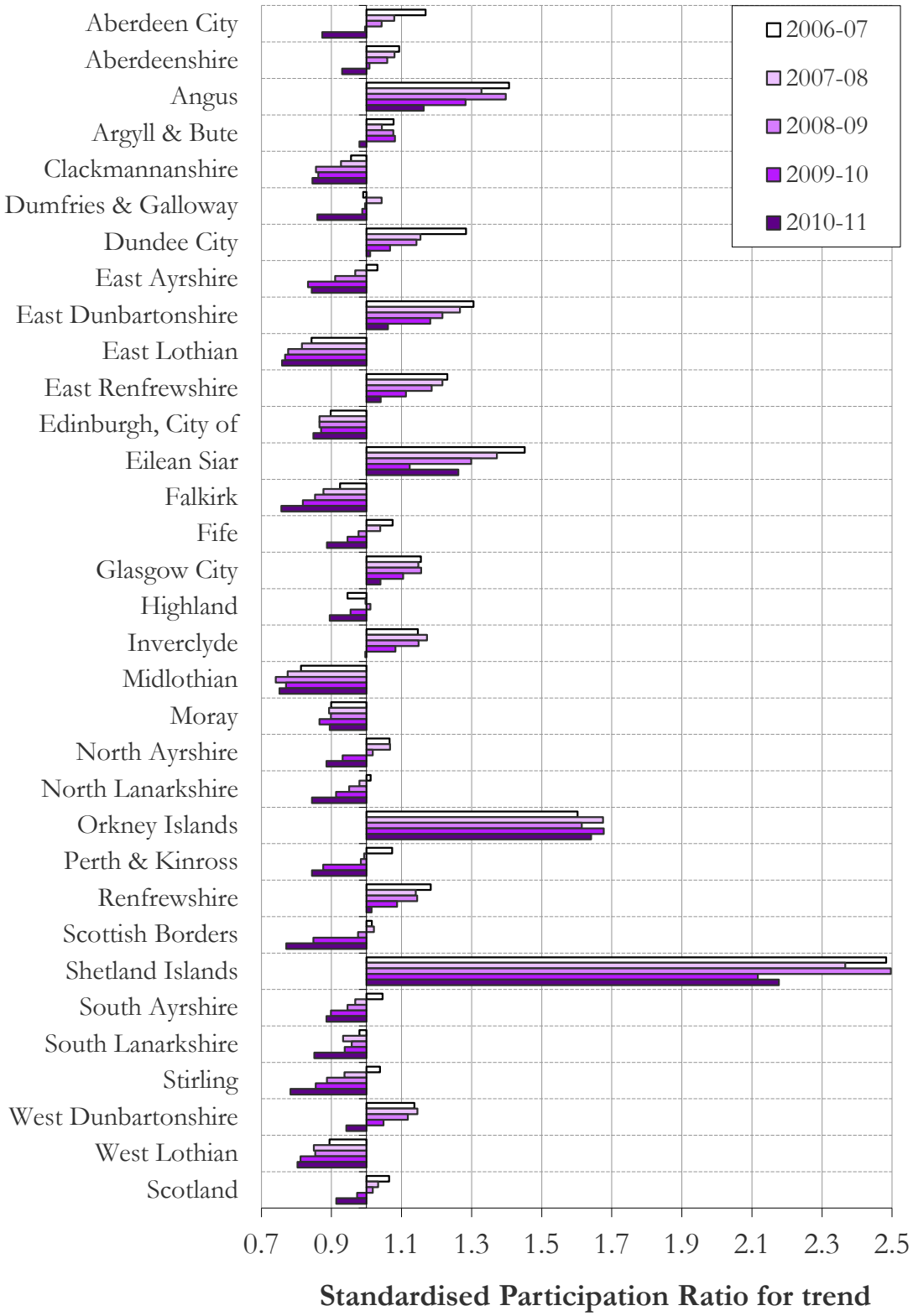
- headcount SPR ranged from 0.83 (East Lothian and Falkirk) to 2.38 (Shetland Islands); and
- FTE SPR ranged from 0.84 (Dumfries and Galloway) to 1.27 (East Renfrewshire);

Figure 2.3.1 shows trends in standardised participation ratio for headcount for further or higher education. A statistical model was used on the headcount data to determine which trends between 2006-07 and 2010-11 were significant and not due to random fluctuations. Headcount participation declined significantly in all 32 local authorities due to a change from FE course structure, resulting in an overall fall in FE numbers. Figure 2.3.2 shows FTE participation from 2006-07 and 2010-11. This shows how the volume of activity has changed over the five year period.

Table 2.3.1 Participation in FE or HE by local authority

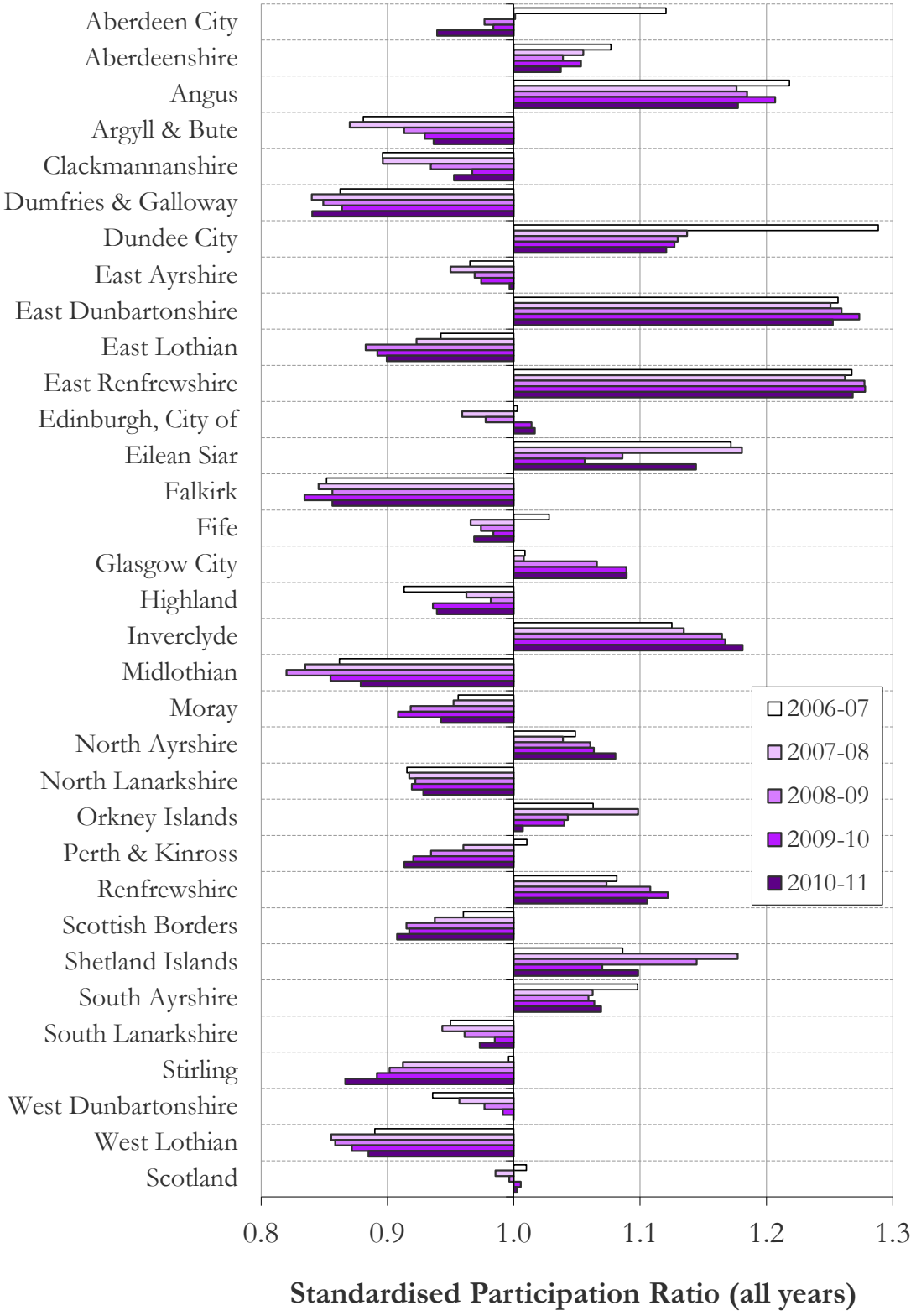
Local Authority	Headcount			FTE	
	2010-11 Rate /1000	2010-11 SPR	Trend (2006-07 to 2010-11)	2010-11 Rate /1000	2010-11 SPR
Aberdeen City	100.4	0.95	↓	53.7	0.93
Aberdeenshire	100.5	1.02	↓	54.9	1.04
Angus	120.9	1.28	↓	59.5	1.18
Argyll & Bute	101.9	1.07	↓	48.2	0.93
Clackmannanshire	94.7	0.93	↓	53.1	0.95
Dumfries & Galloway	87.5	0.95	↓	41.6	0.84
Dundee City	117.6	1.10	↓	66.5	1.11
East Ayrshire	93.8	0.92	↓	55.1	0.99
East Dunbartonshire	114.9	1.16	↓	67.4	1.25
East Lothian	83.9	0.83	↓	49.5	0.90
East Renfrewshire	114.9	1.14	↓	69.8	1.27
Edinburgh, City of	98.7	0.93	↓	57.8	1.01
Eilean Siar	129.8	1.39	↓	57.5	1.14
Falkirk	84.7	0.83	↓	47.3	0.85
Fife	100.2	0.97	↓	55.2	0.96
Glasgow City	124.2	1.13	↓	64.7	1.08
Highland	94.2	0.98	↓	48.2	0.94
Inverclyde	108.8	1.09	↓	63.6	1.18
Midlothian	83.8	0.82	↓	48.8	0.88
Moray	97.9	0.98	↓	51.5	0.94
North Ayrshire	96.4	0.97	↓	58.1	1.08
North Lanarkshire	95.8	0.92	↓	52.0	0.93
Orkney Islands	174.5	1.80	↓	52.7	1.01
Perth & Kinross	91.7	0.92	↓	49.2	0.91
Renfrewshire	112.2	1.11	↓	60.1	1.10
Scottish Borders	79.9	0.85	↓	45.9	0.91
Shetland Islands	244.2	2.38	↓	61.9	1.09
South Ayrshire	92.3	0.97	↓	54.6	1.07
South Lanarkshire	93.7	0.93	↓	52.6	0.97
Stirling	93.6	0.85	↓	54.3	0.86
West Dunbartonshire	105.8	1.03	↓	55.6	1.00
West Lothian	92.4	0.88	↓	50.4	0.88
Scotland	**102.1**	**1.00**		**55.5**	**1.00**

Figure 2.3.1 Trends in standardised headcount participation in FE or HE by local authority



Notes
The five-year national average Standardised Participation Ratio (SPR) for trend is one. Thus SPRs above or below one are above or below this national average.

Figure 2.3.2.Trends in standardised FTE participation in FE or HE by local authority



Note
The five year national average Standardised Participation Ratio (SPR) for trend is 1.0. Thus SPRs above or below one are above or below this national average.

2.4. Participation within deprivation classes

The Scottish Index of Multiple Deprivation 2009 (SIMD) (Scottish Government, 2009) ranks each of the 6,505 Scottish Neighbourhood Statistics data zones using a score derived from seven domains of deprivation: income; employment; health; education, skills and training; geographic access to services; crime; and housing. This ranking was used to group the data zones into two classes: the most deprived data zones, which contain approximately 20 per cent of the 2009 mid-year population, and the rest. The two classes are termed the 'most deprived' and the 'less deprived'.

Table 2.4.1 and Table 2.4.2 show headcount and FTE participation rates in further or higher education by deprivation class and year and the ratio of participation rates from the most deprived class to the less deprived classes (grouped). This is an indicator of how strongly participation is related to deprivation. In particular:

- since 2007-08, headcount rate has been higher in the most deprived class; however; and
- the FTE participation rate of the most deprived class only rose above that of the less deprived in 2010-11.

Table 2.4.1 Headcount participation in FE or HE by deprivation class

Year	Deprivation		Ratio of most to less deprived
	Less deprived	Most deprived	
	Rate/1000		
2006-07	119.8	115.9	0.97
2007-08	116.4	117.6	1.01
2008-09	113.9	117.5	1.03
2009-10	108.3	112.9	1.04
2010-11	100.0	111.9	1.12

Table 2.4.2 FTE participation in FE or HE by deprivation class

Year	Deprivation		Ratio of most to less deprived
	Less deprived	Most deprived	
	Rate/1000		
2006-07	56.6	50.2	0.89
2007-08	55.8	51.3	0.92
2008-09	55.9	53.6	0.92
2009-10	56.1	54.8	0.96
2010-11	54.9	58.4	1.07

Figure 2.4.1 and Figure 2.4.2 show trends in headcount participation by deprivation class and gender and by deprivation class and age group respectively. These indicate that:

- participation has declined amongst women in both deprivation classes and men in the less deprived class; and
- young participation has increased steadily in the most deprived classes since 2006-07.

Figure 2.4.1 Trends in headcount participation in FE or HE education by gender and deprivation class

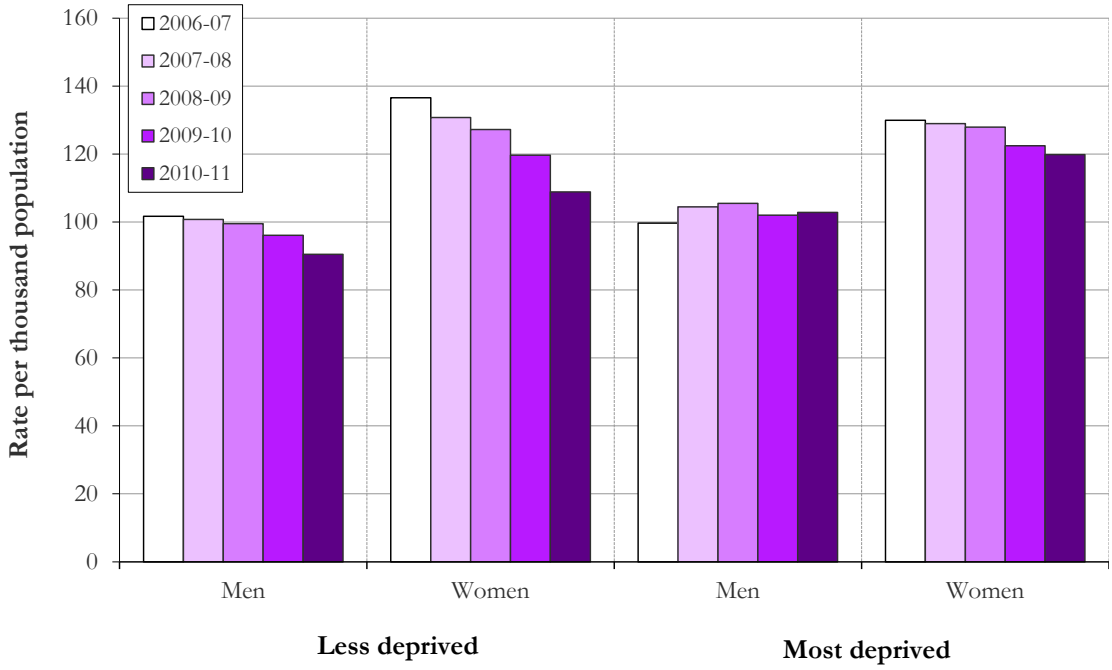
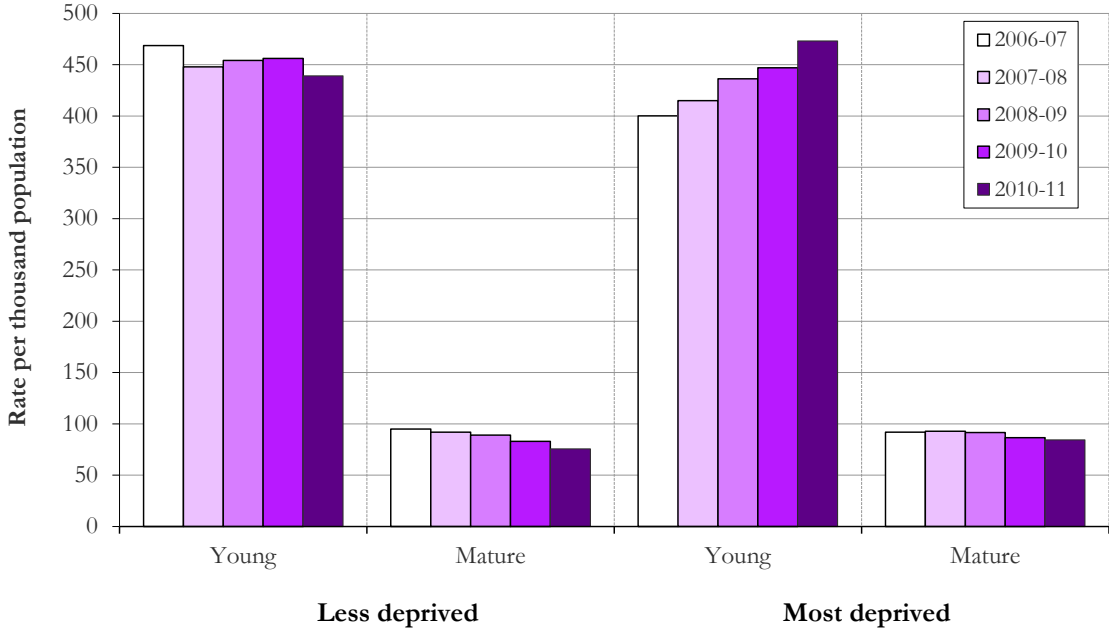


Figure 2.4.2 Trends in headcount participation in FE or HE by age group and deprivation class



Note
Young = 16-19, Mature = 20 and over

Table 2.4.3 shows headcount participation rates in further or higher education by deprivation class and local authority for 2010-11 together with the ratio of participation from the most deprived data zones to that from the less deprived. A number of local authorities have relatively small populations in the most deprived class and are therefore likely to have fluctuating participation rates. These have been indicated in the table.

Excluding those with small populations, Angus has the highest participation in their most deprived data zones compared to the less deprived (1.28), and Stirling has the lowest participation in the most deprived datazones compared to the least deprived (0.79).

Table 2.4.3 Headcount participation in FE or HE by local authority and deprivation class, 2010-11

Local Authority	Deprivation Less deprived Rate/1000	Most deprived	Ratio of most to less deprived
Aberdeen City	98.5	114.8	1.17
Aberdeenshire	100.1	127.0	1.27
Angus	119.0	152.8	1.28
Argyll & Bute	101.5	106.4	1.05
Clackmannanshire	97.1	86.9	0.89
Dumfries & Galloway	86.6	97.6	1.13
Dundee City	116.1	120.2	1.04
East Ayrshire	92.5	97.1	1.05
East Dunbartonshire	115.1	111.9	0.97
East Lothian (*)	83.8	86.5	1.03
East Renfrewshire	115.1	114.0	0.99
Edinburgh, City of	97.6	106.8	1.09
Eilean Siar	129.9	-	-
Falkirk	85.2	82.0	0.96
Fife	99.7	103.2	1.04
Glasgow City	126.5	121.9	0.96
Highland	94.7	90.1	0.95
Inverclyde	116.4	98.7	0.85
Midlothian	84.4	76.1	0.90
Moray (*)	98.2	88.3	0.90
North Ayrshire	94.6	100.3	1.06
North Lanarkshire	97.1	92.7	0.95
Orkney Islands	174.5	-	-
Perth & Kinross	91.5	96.0	1.05
Renfrewshire	111.5	114.4	1.03
Scottish Borders	79.2	95.2	1.20
Shetland Islands	244.4	-	-
South Ayrshire	91.4	96.6	1.06
South Lanarkshire	95.7	85.3	0.89
Stirling	95.1	75.0	0.79
West Dunbartonshire	105.0	107.4	1.02
West Lothian	94.3	83.8	0.89
Scotland	**101.9**	**106.5**	**1.05**

Notes
* = local authorities that have a relatively small population in the most deprived deprivation class (below 3,000 in 2010)
- = no population in that class

3. Participation in further education

This chapter covers participation in further education (FE) by Scottish students at colleges in Scotland. The 41 colleges funded by the Scottish Funding Council (SFC) deliver learning at over 4,000 locations and offer a wide range of courses at almost every level. Their higher education students are included in chapter 4, but courses at further education level include:

- vocational and general education up to SVQ level 3;
- Modern Apprenticeships and 'Get Ready for Work' programmes;
- courses for school pupils through school link arrangements;
- access courses for those returning to education;
- courses for students with learning difficulties;
- training for employees, at college and in the workplace;
- courses required for the registration of public service staff, such as social and health care;
- literacy and numeracy courses;
- English for Speakers of Other Languages (ESOL); and
- vocational and non-vocational evening classes.

This list is not exhaustive, and for more information on the nature of college activity see *Unlocking Opportunity: the Difference Scotland's Colleges Make to Learners, the Economy and Wider Society* (Scottish Government, 2006a).

For most of the types of education offered, the colleges may be the main provider, but they are not the only provider. In addition, the type of provision will vary between colleges and also the extent to which they or other providers satisfy local demand. This should be borne in mind when interpreting the results: trends in college participation may not entirely reflect overall trends in further education; trends may be affected by an increase or decrease in certain types of provision; and geographical differences can result from variation in the extent of college involvement in different types of further education in a locality.

In addition, participation reflects, to a large extent, levels of funding and how colleges allocate funds so as to ensure they meet targets set by the SFC. As we are focusing on the proportion of the population studying at college, this section concentrates on the number of students (headcount) rather than on the number of enrolments at colleges. Students frequently enrol on more than one course in a year. For example, a student returning to education may enrol on a short course before committing to further study.

The numbers presented here will differ slightly from those presented elsewhere, for example in *Scotland's Colleges: a Baseline Report* (SFC, 2011) and the INFACT database (https://stats.sfc.ac.uk/infact/). This is because in this report:

- only students resident in Scotland are included;
- students under school leaving age have been excluded; and
- we have attempted to avoid double counting of students who enrol at more than one college in a year.

In addition, some students on college courses not funded by the SFC have not been included because we hold very limited information on them. For 2010-11 we have data on around 18,000 enrolments on these 'full cost recovery' courses, although, because of multiple enrolments, the number of additional students involved will be less than this.

Students who are Scottish-domiciled but studying in colleges outside Scotland have also been excluded. Leaving these students out is unlikely to result in a significant under-representation of participation for any particular areas.

As well as number of students (headcount), participation is also presented in terms of full-time equivalents (FTE). FTE was based on the number of hours of study as a proportion of the expected number of hours for a full-time course. Full-time students who completed their course were given an FTE of one. See Appendix 1 for more information.

3.1. Overview

Table 3.1.1 summarises the number of students, FTE and participation rates in further education in colleges and shows the extent to which these have changed since 2006-07. The number of students fell overall between 2006-07 and 2010-11, and the FTE has declined since 2008-09.

Table 3.1.1 Participation in FE, 2006-07 to 2010-11

Year	Headcount		FTE	
	Count	Rate/1000	Count	Rate/1000
2006-07	272,911	65.0	75,065	17.9
2007-08	274,817	64.7	76,444	18.0
2008-09	266,454	62.4	78,443	18.4
2009-10	242,455	56.4	77,592	18.0
2010-11	214,551	49.6	75,310	17.4
Change 2009-10 to 2010-11	-11.5%	-12.1%	-2.9%	-3.6%

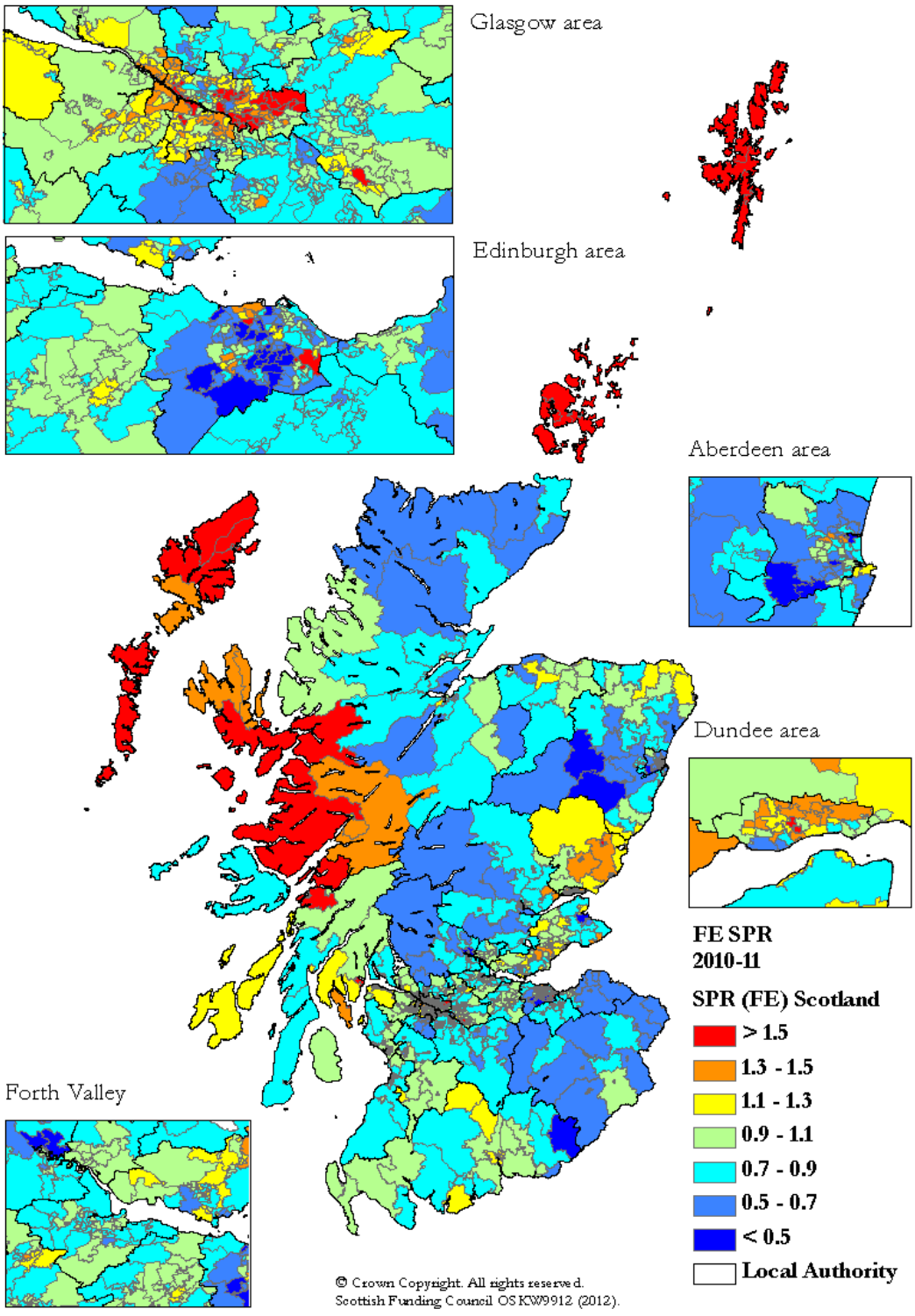
Note
Rates/1,000 are the number of students per thousand head of the population aged 16 and over.

Geographical variation in participation in 2010-11 is illustrated in Figure 3.1.1. Areas with particularly high headcount participation include south-west Highland, Orkney, Eilean Siar, Shetland Isles and north Argyll and Bute, as well as parts of Glasgow, Edinburgh and Dundee. Particularly low participation is found within Edinburgh, central Scotland and the Highlands. In some areas participation is high because of the nature of local provision.

Figure 3.1.2 shows the strength of statistical evidence of change in headcount participation between 2006-07 and 2010-11. There was strong evidence of a decrease in many areas across Scotland. There was strong evidence of an increase in participation in parts of Edinburgh only, some evidence in south-west Highland. Note that areas in green may also have changed but there was insufficient statistical evidence to determine this.

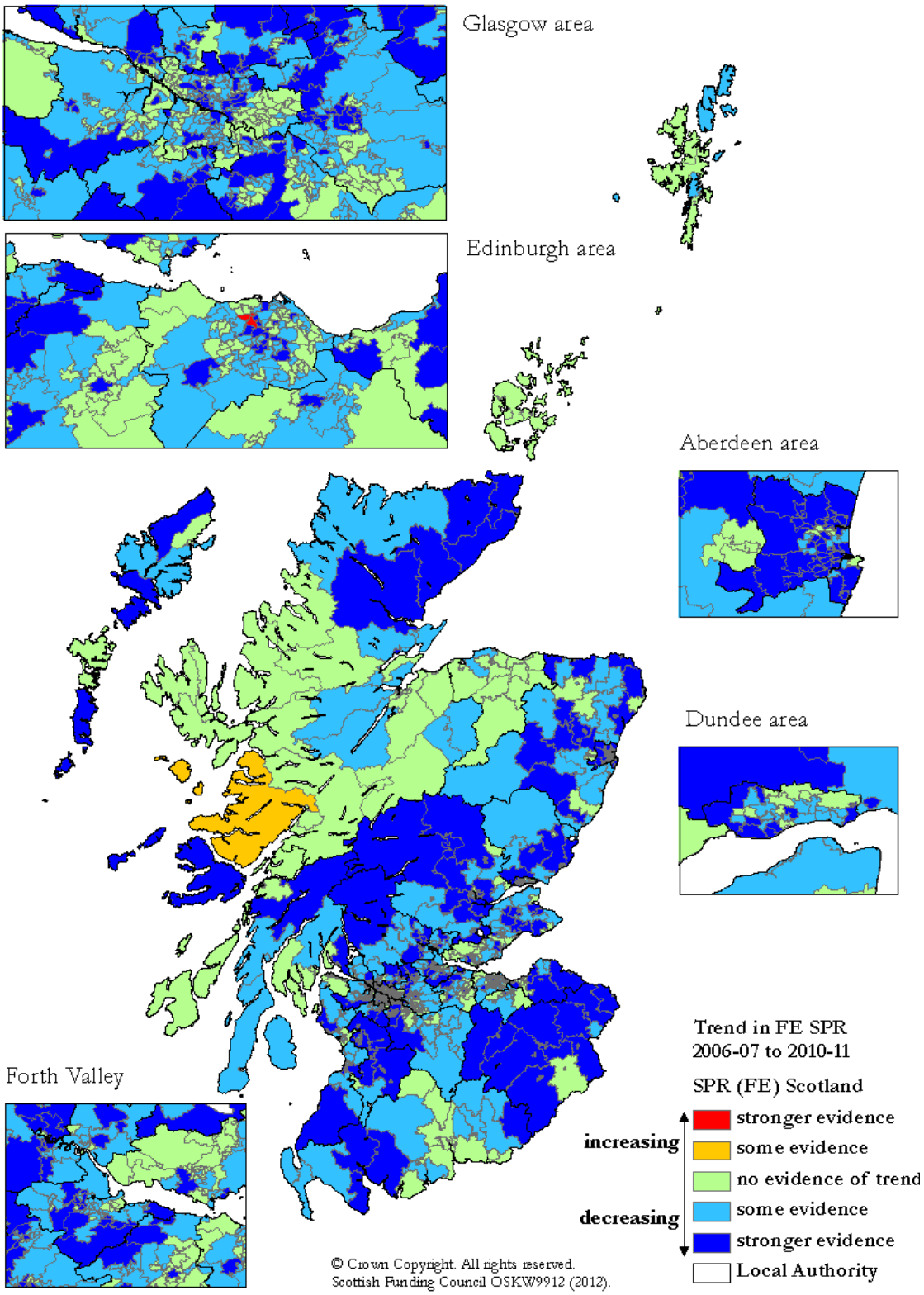
Variation in FTE participation is shown in Figure 3.1.3. Comparing with Figure 3.1.1, this shows a low participation in terms of FTE throughout most of Scotland. Most areas of high FTE participation are concentrated in and around Glasgow and Dundee with pockets in Fife, Edinburgh, Aberdeen and parts of central Scotland.

Figure 3.1.1 Geographical variation in headcount participation in FE, 2010-11



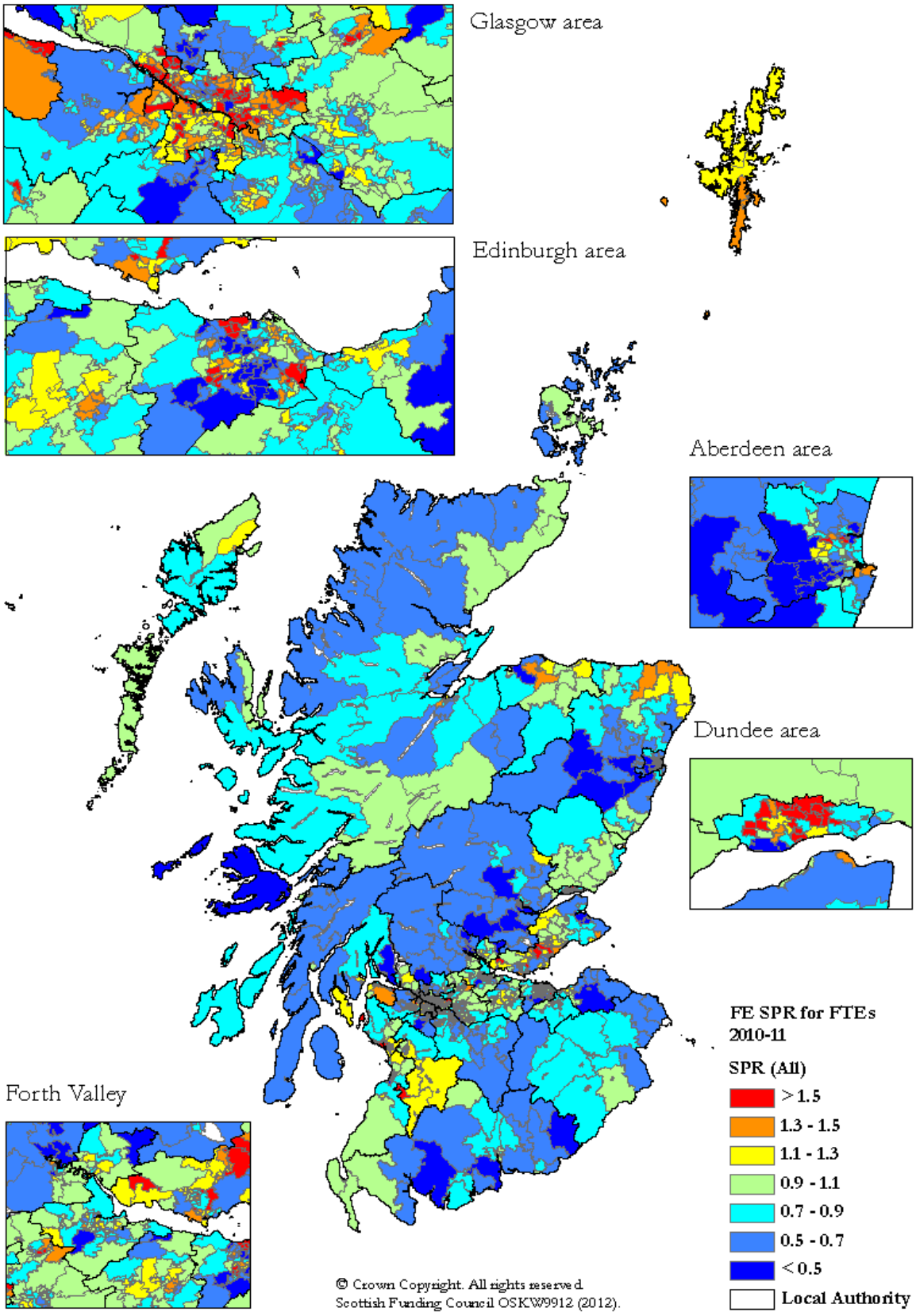
Notes
The Standardised Participation Ratio (SPR) compares the number of participants in an area with what would be expected if national age-gender specific participation rates were applied to the area's population. The SPR ensures areas with differing age-gender distributions are comparable. The national SPR is one. Thus participation in areas in green is close to the national rates.

Figure 3.1.2. Strength of statistical evidence of change in headcount participation in FE 2006-07 to 2010-11



Notes
The map highlights those areas which have shown an increasing or decreasing trend in SPR as derived from a statistical model, see Appendix 1 for more information.
Areas with an established trend are not necessarily those that have changed the most.

Figure 3.1.3 Geographical variation in FTE participation in FE, 2010-11



3.2. Trends by age and gender

Age and gender specific trends are summarised in Figure 3.2.1 and Figure 3.2.2. These show that:

- headcount participation for men increased between 2006-07 and 2007-8, but has declined since;
- headcount participation for women has declined since 2006-07;
- headcount participation for both men and women in the 16-19 year old age group has dropped since 2008-09; and
- FTE participation is higher in 16-19 year old men than for 16-19 year old women as they are more likely to undertake either full-time or short full-time study.

Participation in students aged '20 and over' is consistently higher in women than men, although the gap between them is narrowing. It should be noted that the difference in the overall participation rates ('All ages') is affected by the fact that there are rather more elderly women than men in the post school leaving population. As participation is low in the elderly they have the effect of reducing overall rates and more so in women than men. Thus, the difference between men and women in the 'Working age' rates is rather larger than in the 'All ages' rate.

Figure 3.2.1 Headcount participation rates in FE by age and gender

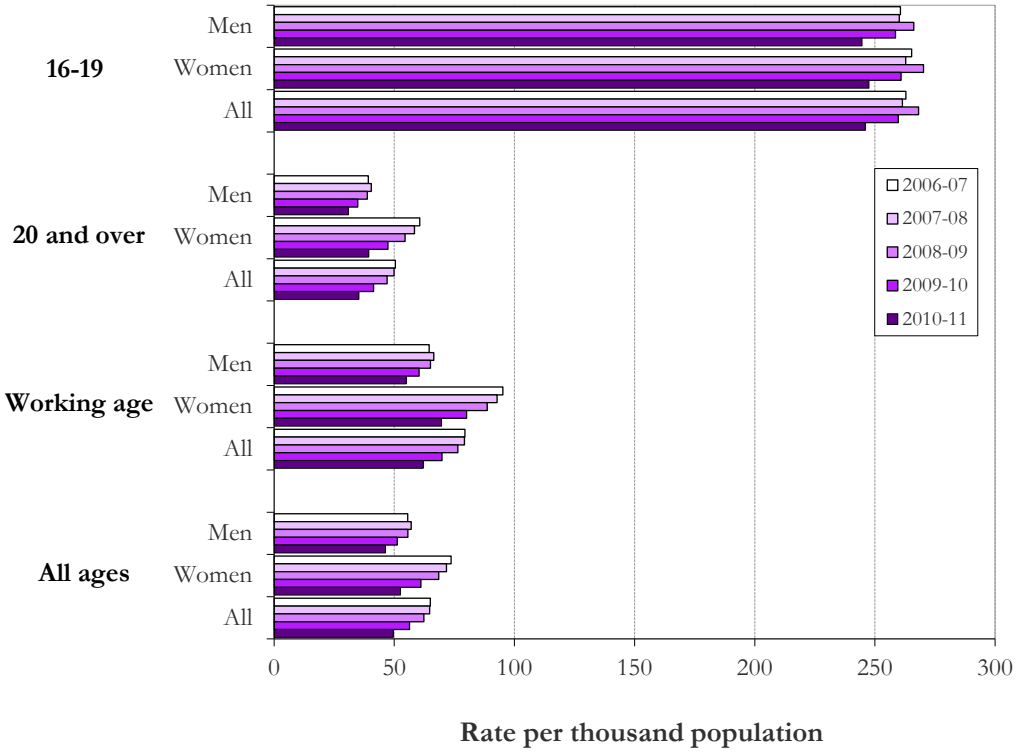
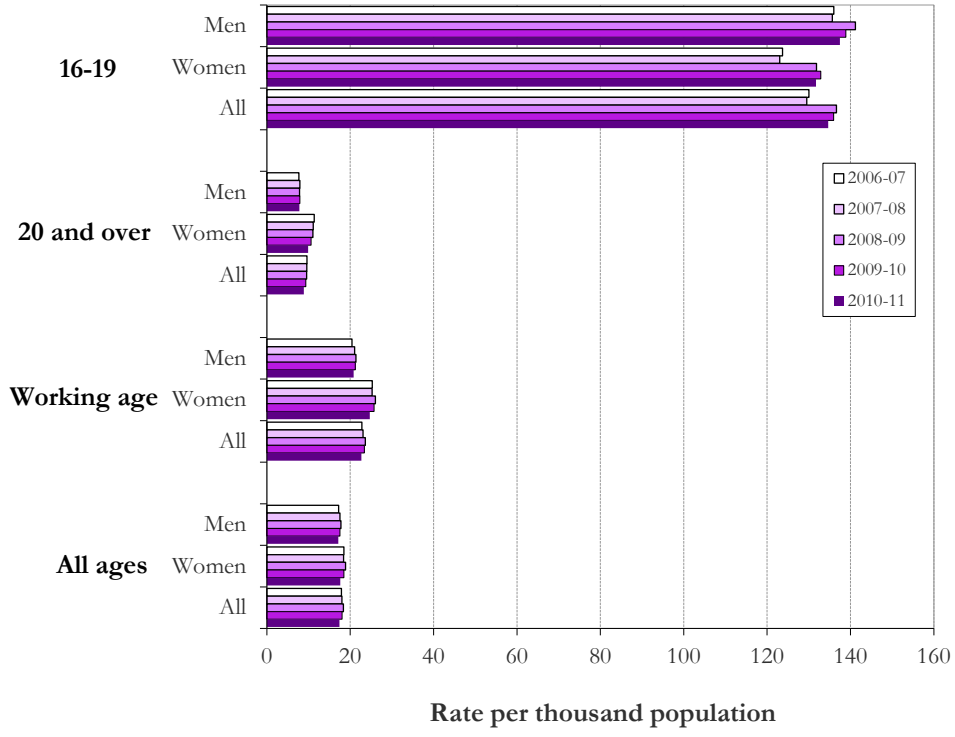


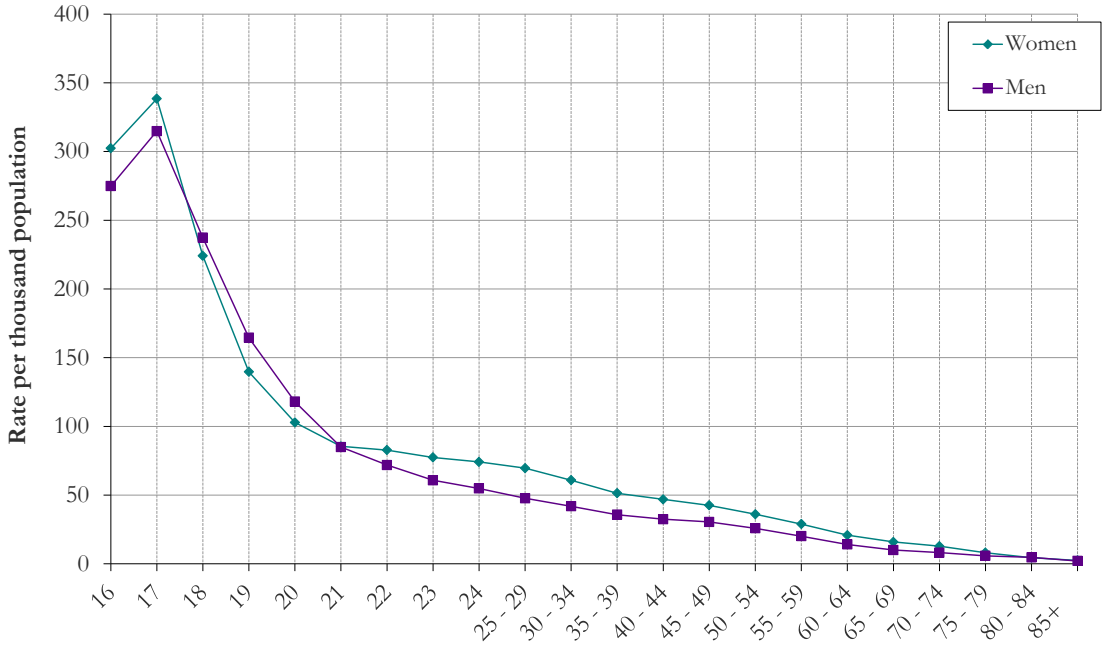
Figure 3.2.2.FTE participation rates in FE by age groups and gender



Note
Rates are calculated using the relevant population group, e.g. women aged between 16 and 19.

The 2010-11 age distribution of headcount participation in men and women is shown in Figure 3.2.3. Participation is higher in women at ages under 18, but male participation is greater between the ages of 18 and 20. Female participation is greater over the age of 22 but falls to a level similar to men by age 75. For Scotland as a whole, young men were slightly less likely to participate than women in 2010-11 (Figure 3.2.1).

Figure 3.2.3 Headcount participation rates in FE by age and gender, 2010-11



3.3. Trends by mode and length of study

Participation in FE by mode of study is presented in Figure 3.3.1 and Figure 3.3.2.

Short full-time and part-time day modes of study are normally associated with students who are already in employment and are attending college on a part-time basis.

Colleges have always offered programmes of study at evenings or weekends, and many of these programmes are non-vocational in nature. Open and distance learning modes were introduced so that colleges could offer students a more flexible approach to their learning needs in, for example, rural areas.

Figure 3.3.1 Headcount participation in FE by mode of study

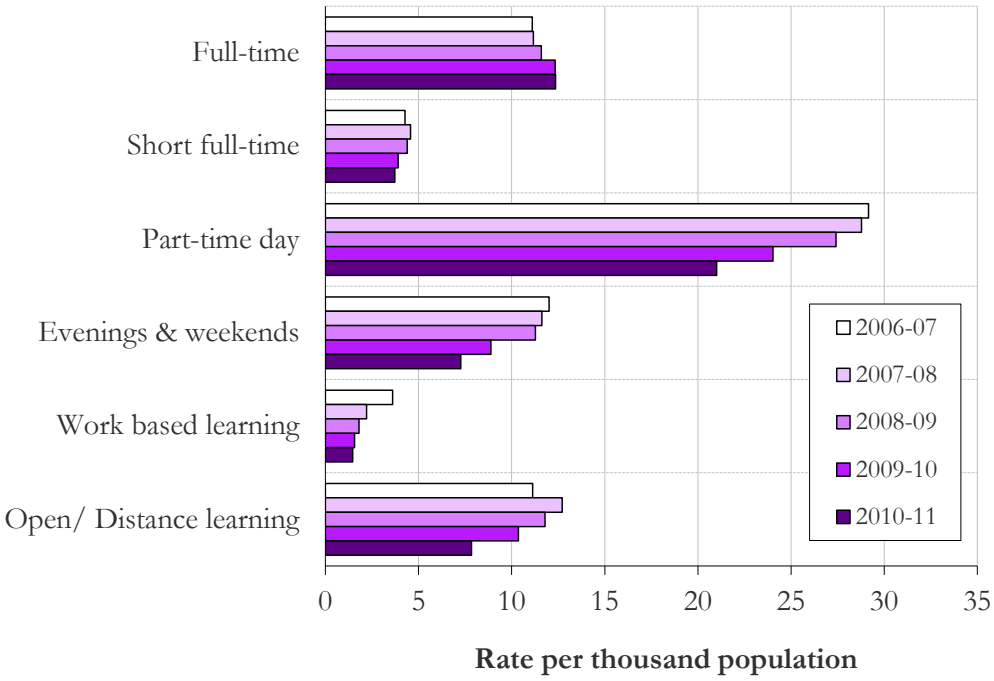
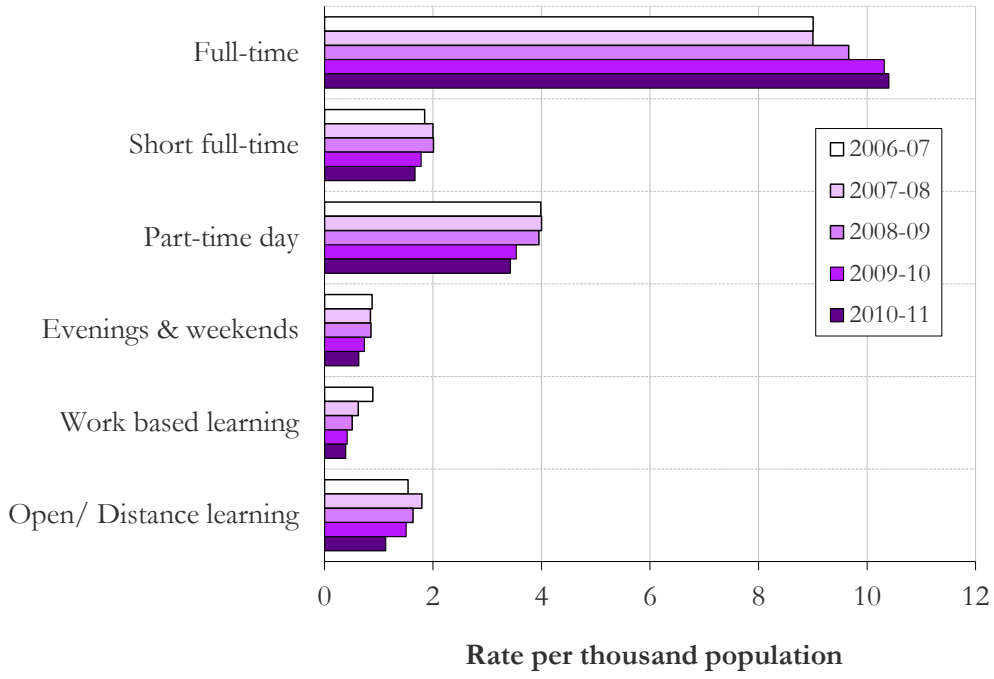


Figure 3.3.2 FTE participation in FE by mode of study



Note
We have assumed that courses recorded as 'part-time, but previously met full-time criteria' are short full-time courses. Some may have been part-time day courses which would mean that the figures for this mode of study are slightly underestimated and those for short full-time overestimated.

Figure 3.3.3 and Figure 3.3.4 show participation for men and women separately.

These indicate that:

- short full-time study is much more common among men, being commonly associated with training for trades such as joinery and plumbing;
- work-based learning is more common among women but has decreased since 2006-07 to a level similar to that of men;
- 'evening and weekend' and 'distance/open learning' are more popular with women; and
- more women participate in part-time day courses, although the number doing so has declined over the five year period, again to a level similar to that of men.

Figure 3.3.3 Headcount participation in FE by mode of study and gender

Figure 3.3.4 FTE participation in FE by mode of study and gender

It is also of interest to examine changes in the number of hours of study by students during the year. For this analysis we added up the total number of hours each student studied during the year and grouped them into bands to show rates for those studying very small amounts through to those studying more than 400 hours. The hours of study were imputed for students for whom the information was missing, based on the hours of study for other students on the same course or on similar courses.

Figure 3.3.5 shows headcount participation by length of study. This chart should be interpreted alongside Table 3.1.1 and Figure 3.2.1 which show an overall fall in FE headcount participation:

- there has been decrease in 2010-11 in the proportion of the population studying for less than 10 hours. This is as a result of the move to more full-time courses at the expense of short part-time courses;
- for those studying between 10 hours and 39 hours the level of participation has decreased;
- since 2006-07 there has been a decrease in those studying between 40 and 119 hours; and
- participation among those studying for 400 or more hours increased up to 2008-09, and has since declined.

Figure 3.3.5 Headcount participation rate in FE by hours of study

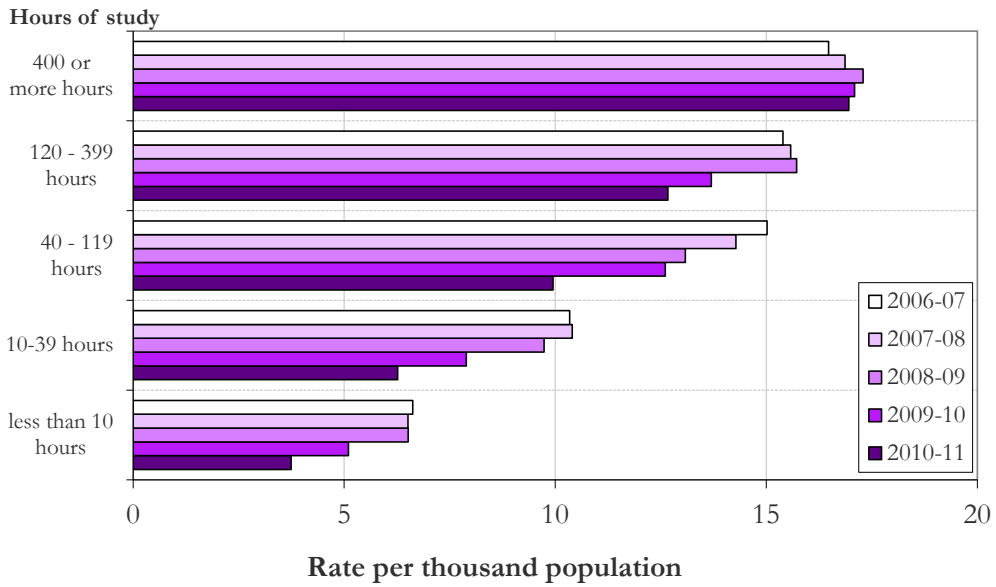
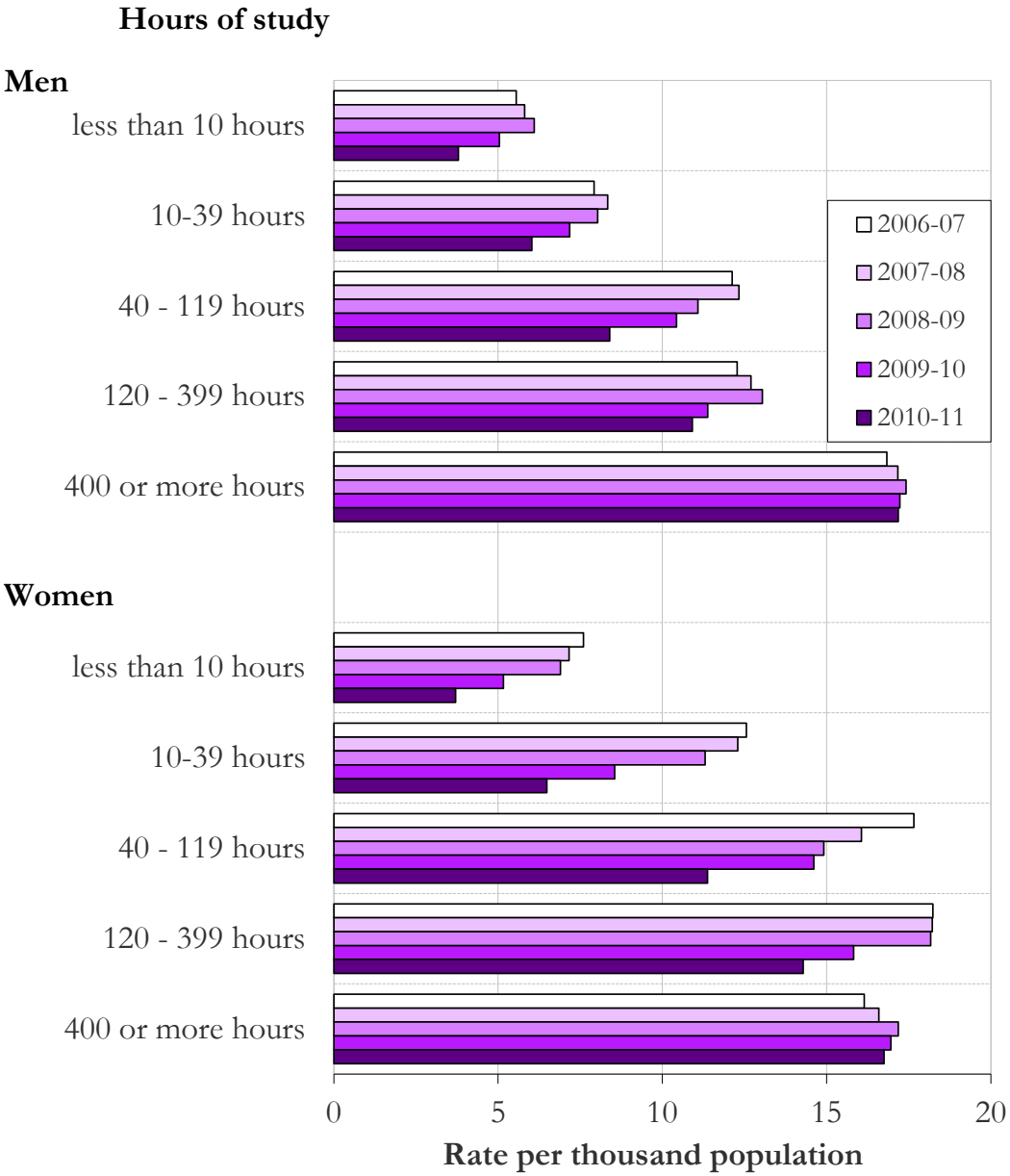


Figure 3.3.6 illustrates trends for women and men separately. In particular:

- women generally have higher rates of participation than men except for those studying for 400 or more hours;
- the number of women studying less than 10 hours, or 10-39 hours has decreased to a level similar to that of males; and
- for both males and females, the numbers studying for less than 400 hours has decreased overall.

Figure 3.3.6 Headcount participation in FE by hours of study and gender



3.4. Trends by level of study

Where possible, the level of study has been grouped according to the Scottish Credit and Qualifications Framework (SCQF) levels (SCQF Partnership, 2009). The framework is designed to help people understand and compare different qualifications in Scotland and the levels indicate the degree of complexity in the learning required for a qualification. Unfortunately, some qualification types cannot be allocated to a single level and these have been grouped separately. This means that the amount of activity recorded under each SCQF level will be slightly underestimated.

Some students who are studying on courses not leading to a qualification are on special educational needs courses and these are shown separately in the main table.

Table 3.4.1, Figure 3.4.1 and Figure 3.4.2 show the numbers, FTE and rates per thousand population for participation according to level of study. These indicate that:

- since 2006-07 headcount and FTE participation on courses not leading to a recognised qualification has been declining significantly;
- 74 per cent of students were studying for recognised qualifications, such courses comprised 90 per cent of all FTE; and
- headcount and FTE participation rate for study at SCQF Level 3 and 4 have increased over the five years presented.

Table 3.4.1 FE headcount and FTE by level of study, 2010-11

Mode of study					
SCQF Level	Description	Headcount	% of all students	FTE	% of all FTE
	Recognised qualifications				
6 & 7	Advanced Higher/Higher/SVQ: Level 3 or equivalent	32,190	15	16,654	22
5	Intermediate 2/SVQ: Level 2 or equivalent	27,488	13	15,049	20
4	Intermediate 1/SVQ: Level 1 or equivalent	10,583	5	4,663	6
3	Access	4,020	2	1,829	2
	Other non-advanced certificate / diploma or equivalent	33,807	16	11,793	16
	National Units	27,067	13	12,270	16
	Any Other recognised qualification	34,666	16	6,556	9
	Any recognised qualification	**158,105**	**74**	**68,123**	**90**
	Non - recognised qualifications				
	Special educational needs programme	10,497	5	2,570	3
	Course not leading to recognised qualification	58,242	27	4,899	7

Notes
There is an overlap between the levels of study as some students studied courses at more than one level in the same year. Therefore, the total number studying for "Any recognised qualification" will be less than the sum of the numbers for each level of study.

Figure 3.4.1 FE headcount participation rates by level of study

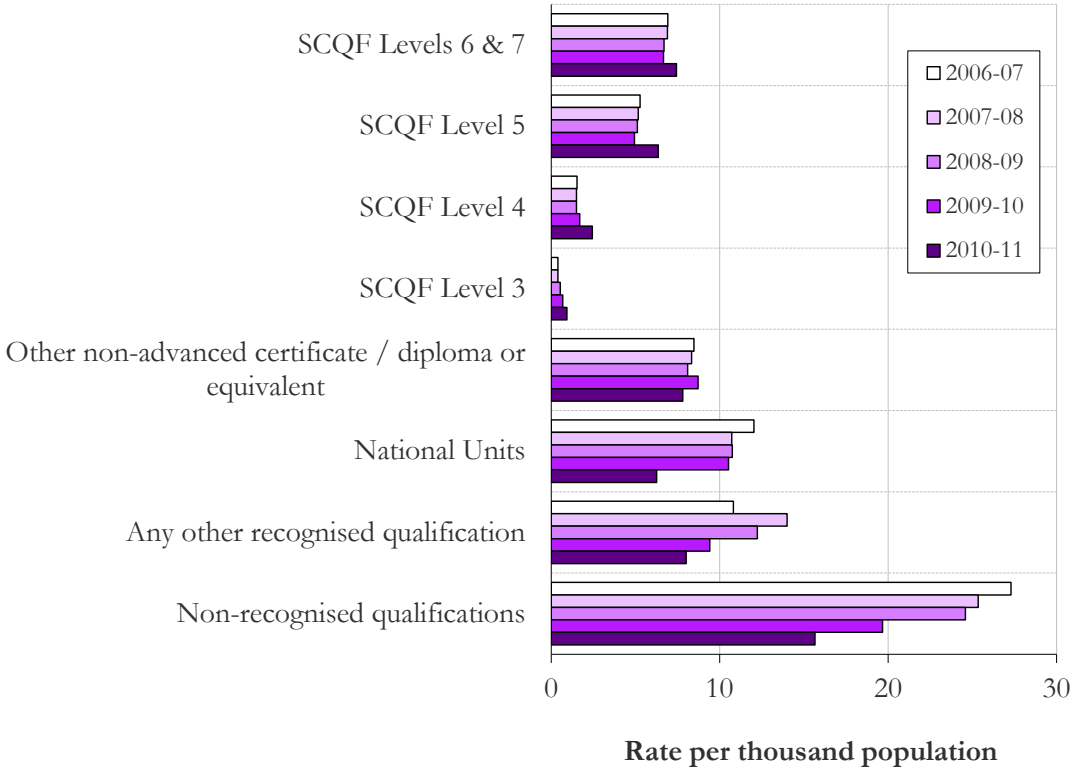


Figure 3.4.2 FE FTE participation rates by level of study

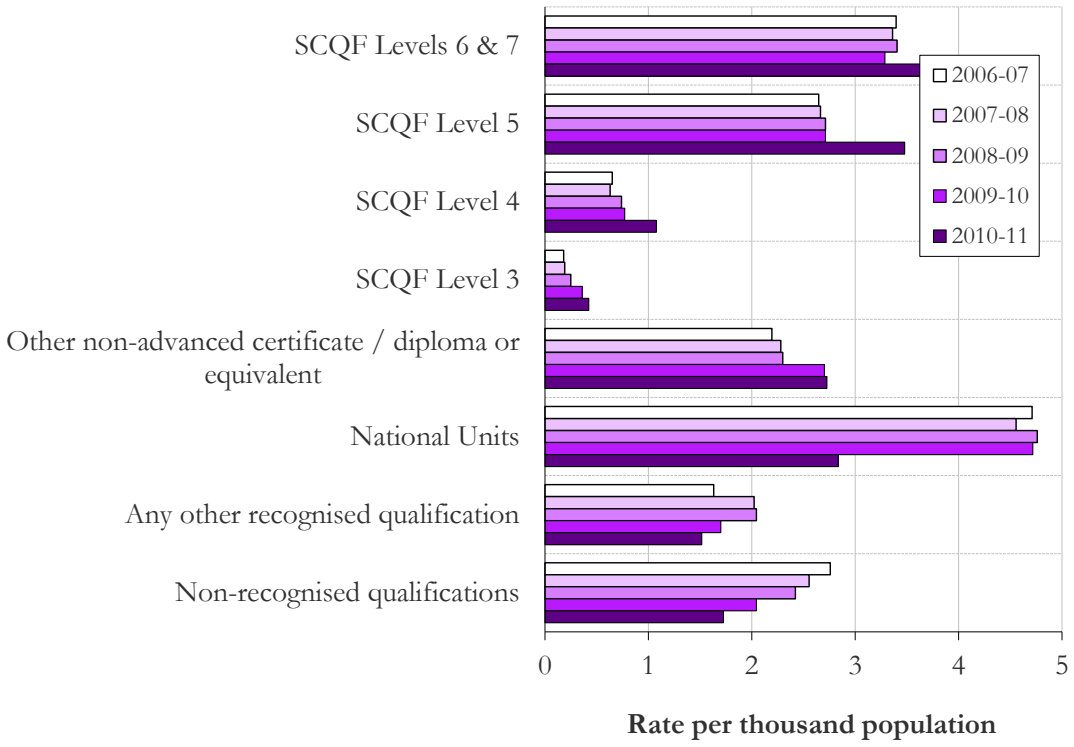
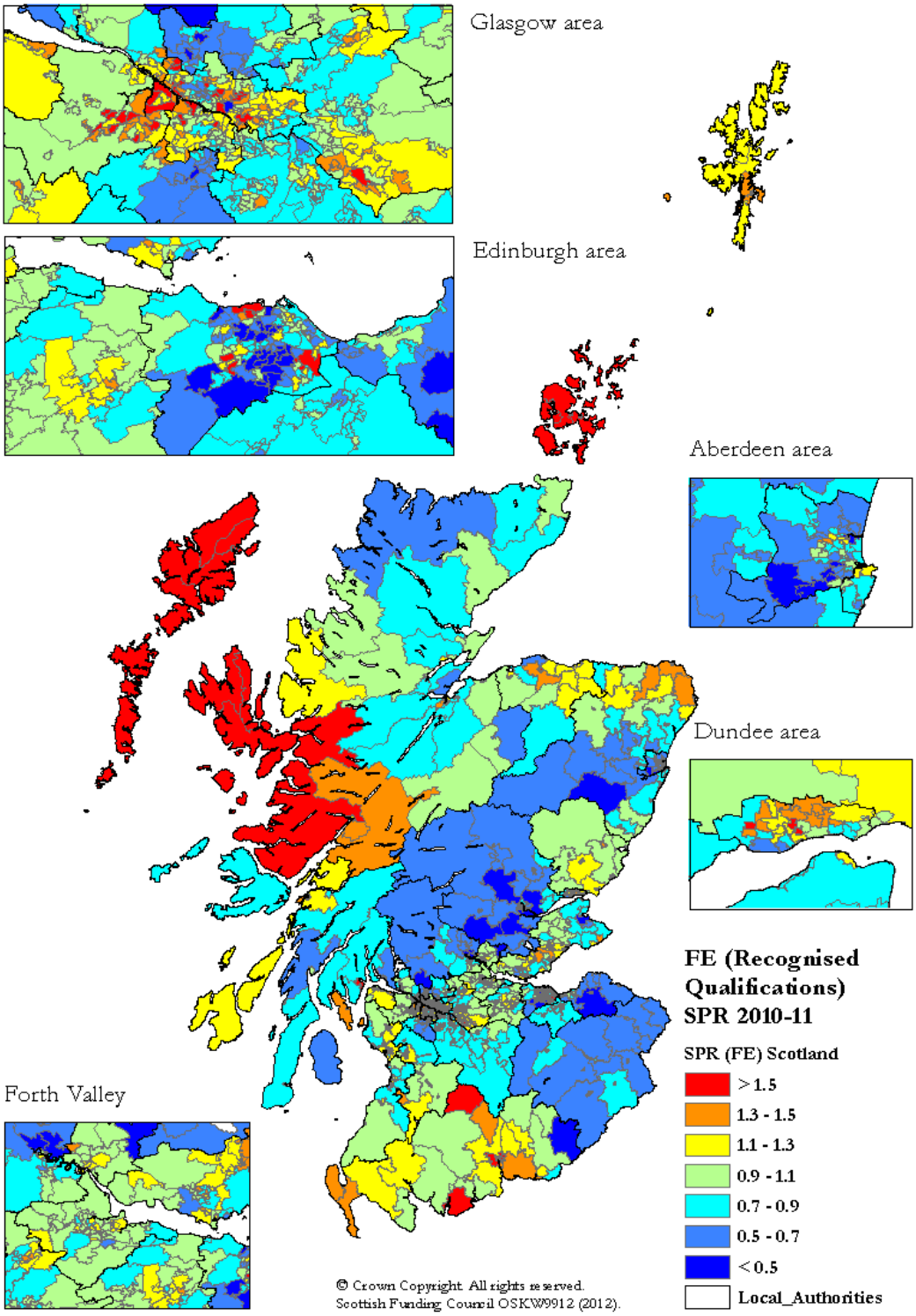


Figure 3.4.3 shows the geographical pattern of headcount participation for recognised FE qualifications. Participation is relatively high in Orkney, west Highland, Eilean Siar and parts of Dumfries and Galloway, as well area areas around Edinburgh, Glasgow and Dundee. Participation is relatively low in parts of Edinburgh, Glasgow, Aberdeen and Dundee, as well as parts of Aberdeenshire, Perth and Kinross, Forth Valley, East Lothian and Dumfries and Galloway.

Figure 3.4.3 Geographical variation in headcount participation for FE recognised qualifications, 2010-11



Notes
The Standardised Participation Ratio (SPR) compares the number of participants in an area with what would be expected if national age-gender specific participation rates were applied to the area's population. The SPR ensures areas with differing age-gender distributions are comparable. The national SPR is one. Thus participation in areas in green is close to the national rates.

Figure 3.4.4 and Figure 3.4.5 show trends in headcount and FTE participation rates for men and women separately. Men and women have similar levels of participation for SCQF Level 6 and 7, and SCQF Level 3. For the other categories participation rates for women tend to be higher than the rates for men, although in 2010-11 the rates for women have fallen to a level similar to that of men.

Figure 3.4.4 Headcount participation in FE by level of study and gender

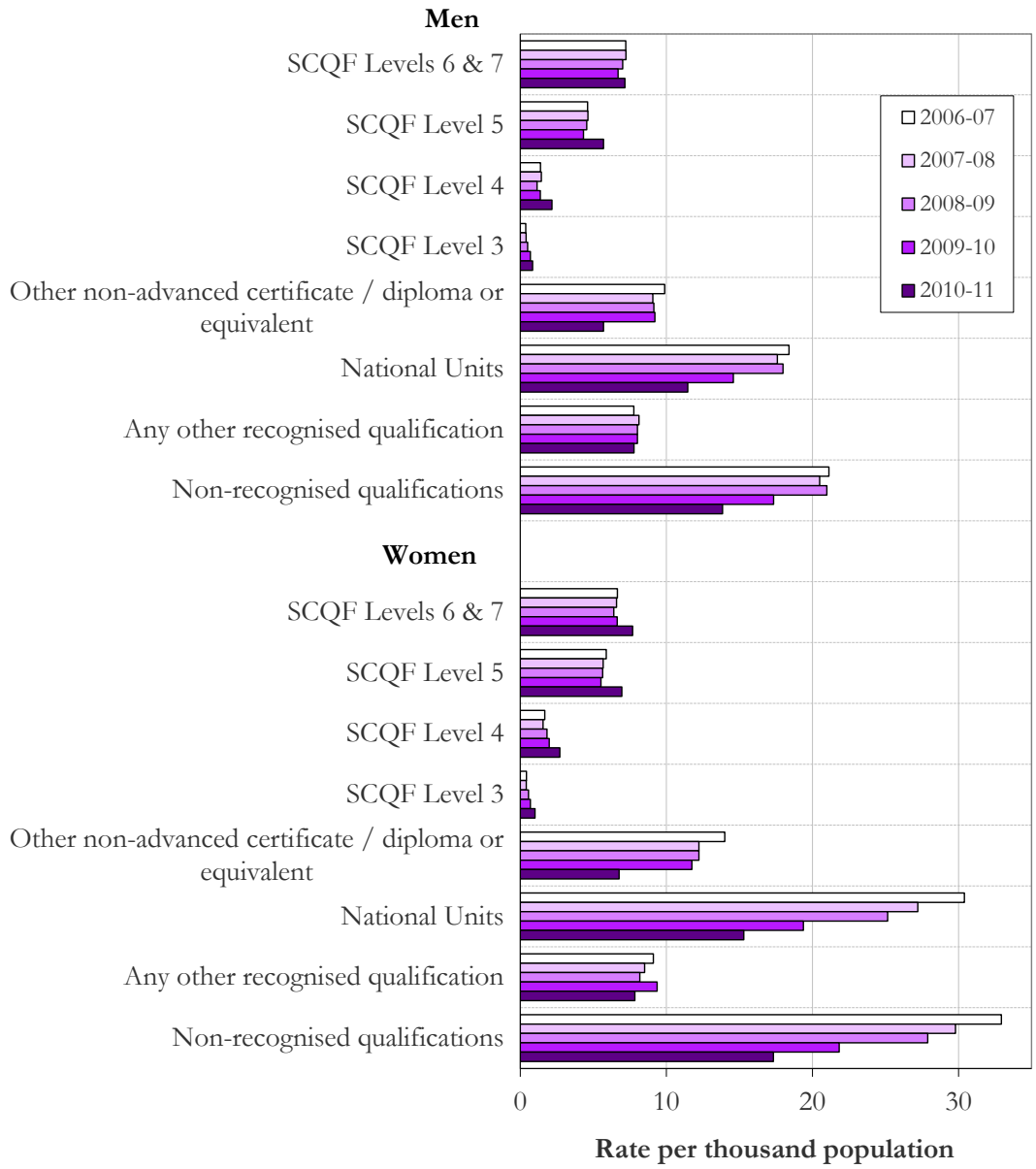


Figure 3.4.5 FTE participation in FE by level of study and gender

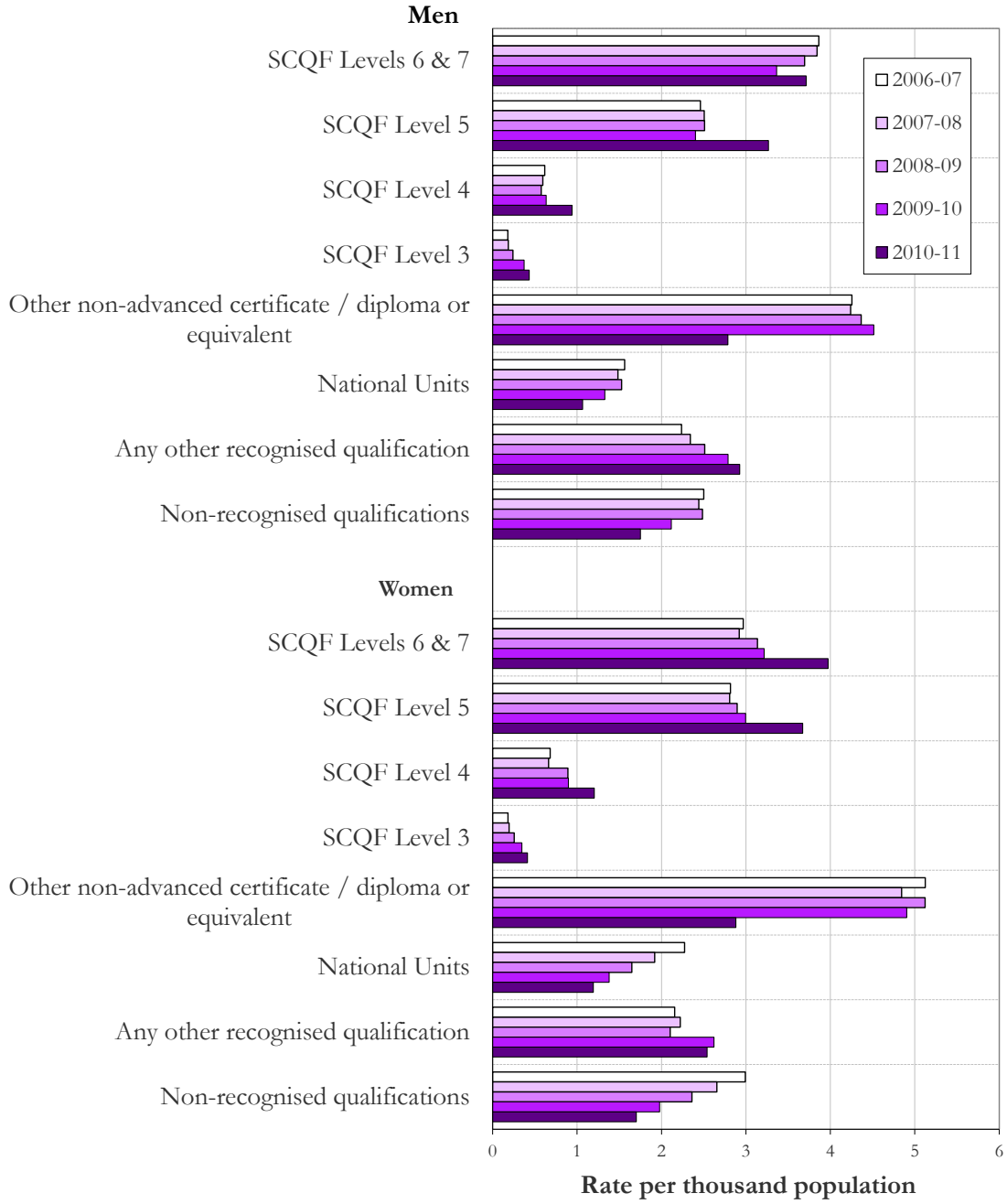


Figure 3.4.6 and Figure 3.4.7 show the participation rates for young students aged 16-19. Although the rates are higher, the trends are similar to those for "All age" participation.

Figure 3.4.6 Headcount participation in FE by level of study for young students aged 16 – 19

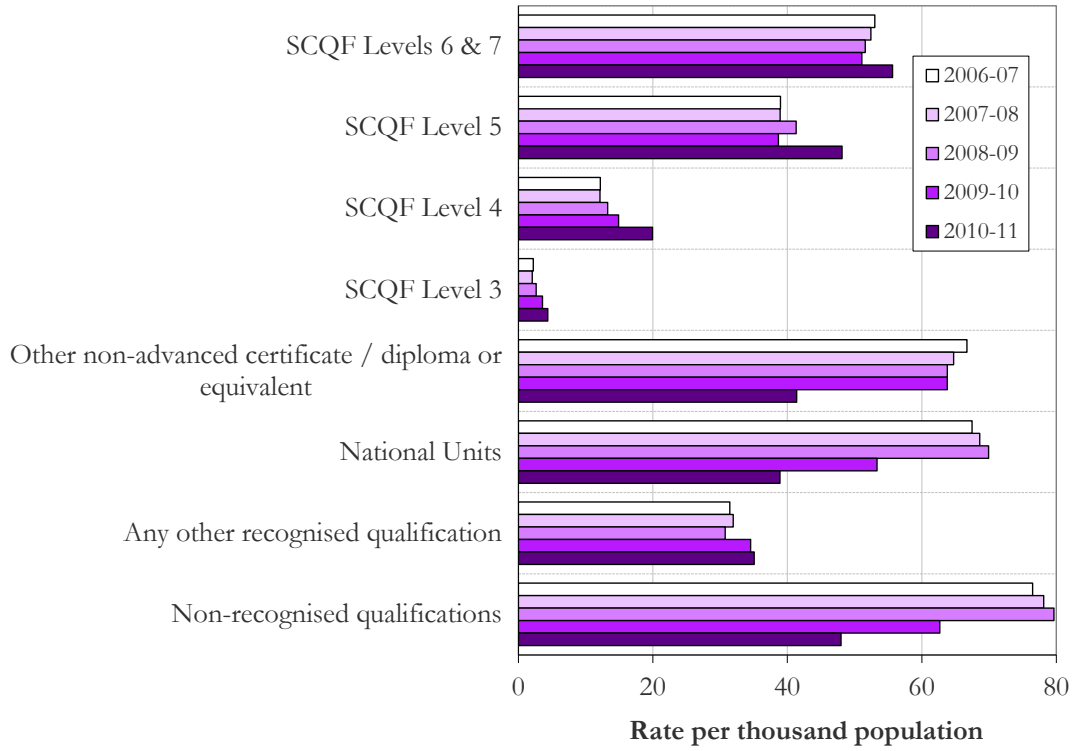
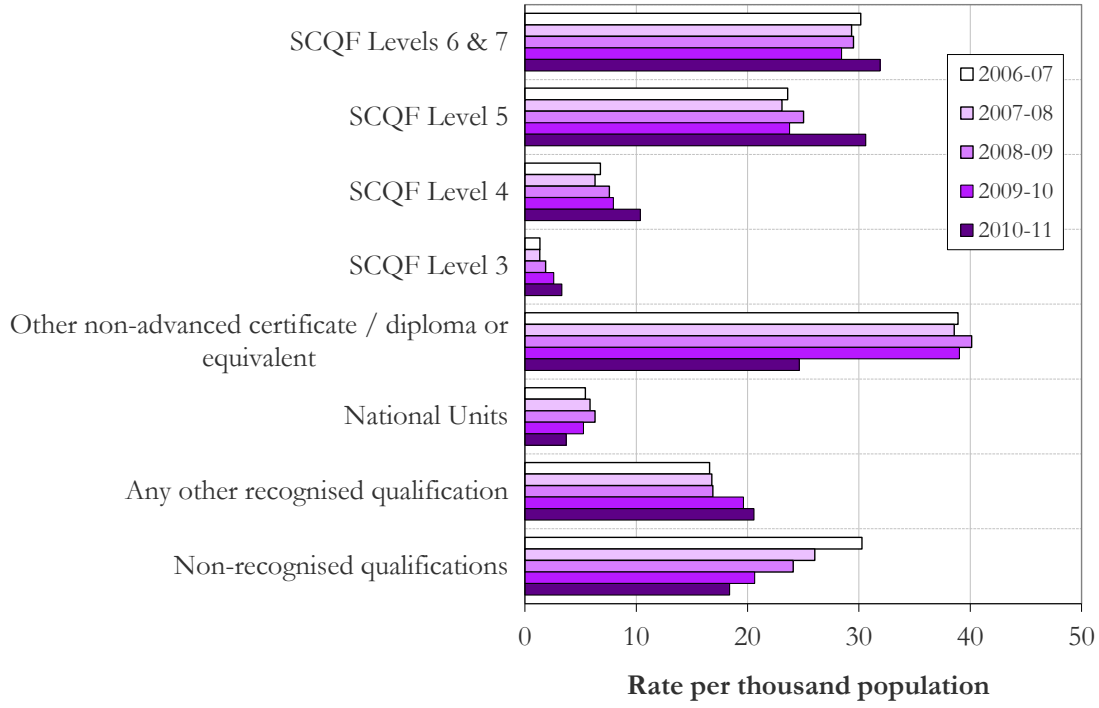


Figure 3.4.7 FTE participation in FE by level of study for young students aged 16 – 19



3.5. Local authority trends

Table 3.5.1 summarises current levels of participation in further education by local authority and trends since 2006-07. Figure 3.5.1 and Figure 3.5.2 show trends in headcount SPR.

In 2010-11:

- headcount SPR ranged from 0.72 (Stirling) to 3.65 (Shetland Islands); and
- FTE SPR ranged from 0.65 (East Renfrewshire) to 1.44 (Inverclyde);

Between 2006-07 and 2010-11:

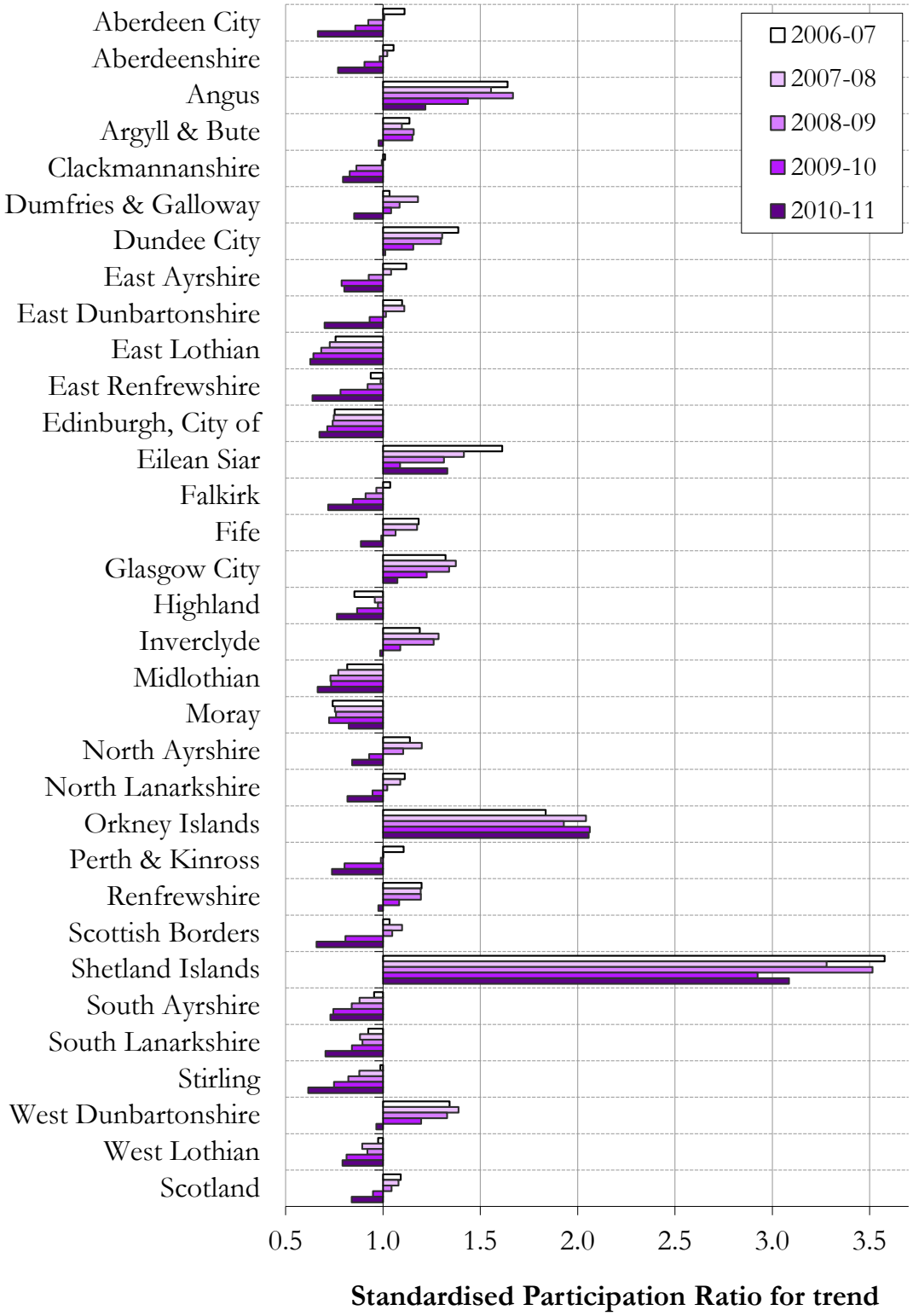
- there was a significant decline in headcount participation in all the local authorities.

Table 3.5.1 Participation in FE by local authority

	Headcount			FTE	
Local Authority	2010-11 Rate /1000	2010-11 SPR	Trend (2006-07 to 2010-11)	2010-11 Rate /1000	2010-11 SPR
Aberdeen City	39.3	0.79	↓	13.5	0.79
Aberdeenshire	44.8	0.92	↓	15.7	0.92
Angus	68.6	1.45	↓	21.0	1.28
Argyll & Bute	54.6	1.16	↓	14.1	0.86
Clackmannanshire	47.3	0.94	↓	17.7	0.99
Dumfries & Galloway	47.1	1.02	↓	12.7	0.79
Dundee City	60.6	1.20	↓	22.8	1.26
East Ayrshire	47.3	0.95	↓	21.0	1.19
East Dunbartonshire	40.8	0.83	↓	12.7	0.73
East Lothian	37.0	0.74	↓	13.8	0.78
East Renfrewshire	38.1	0.76	↓	11.8	0.65
Edinburgh, City of	40.5	0.80	↓	15.7	0.91
Eilean Siar	74.2	1.59	↓	16.6	1.02
Falkirk	42.7	0.86	↓	16.2	0.92
Fife	52.4	1.05	↓	20.7	1.17
Glasgow City	65.9	1.28	↓	22.7	1.26
Highland	43.3	0.91	↓	13.6	0.82
Inverclyde	57.2	1.18	↓	24.4	1.44
Midlothian	39.3	0.79	↓	16.2	0.92
Moray	48.2	0.98	↓	17.6	1.00
North Ayrshire	49.1	1.00	↓	23.2	1.34
North Lanarkshire	49.1	0.97	↓	17.2	0.97
Orkney Islands	118.1	2.45	↓	14.7	0.87
Perth & Kinross	42.6	0.88	↓	13.1	0.76
Renfrewshire	57.4	1.16	↓	18.5	1.08
Scottish Borders	36.9	0.79	↓	14.6	0.90
Shetland Islands	184.8	3.65	↓	23.8	1.30
South Ayrshire	40.8	0.87	↓	16.3	1.01
South Lanarkshire	41.5	0.84	↓	14.8	0.86
Stirling	38.2	0.72	↓	13.7	0.70
West Dunbartonshire	57.3	1.15	↓	19.9	1.13
West Lothian	48.4	0.94	↓	17.6	0.97
Scotland	**49.6**	**1.00**		**17.4**	**1.00**

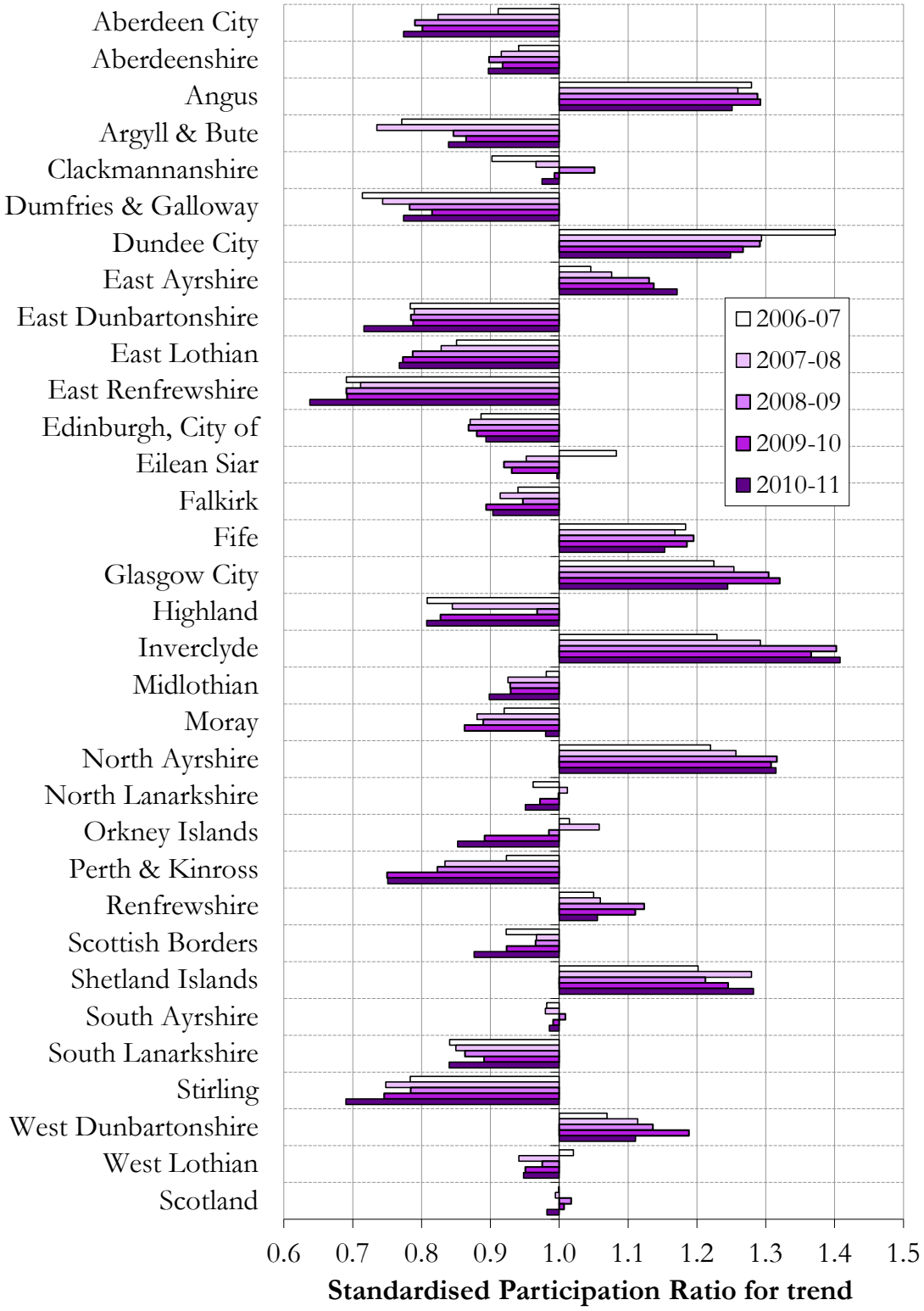
Note
A statistical model has been used to identify areas where the trend in participation is likely to be real rather than a result of random fluctuations.

Figure 3.5.1 Trends in standardised headcount participation in FE by local authority



Note
The five-year national average Standardised Participation Ratio (SPR) for trend is one. Thus SPRs above or below one are above or below this national average.

Figure 3.5.2 Trends in standardised FTE participation in FE by local authority



Note
The five-year national average Standardised Participation Ratio (SPR) for trend is one. Thus SPRs above or below one are above or below this national average.

3.6. Participation within deprivation classes

The Scottish Index of Multiple Deprivation 2009 (SIMD) (Scottish Government, 2009) ranks each of the 6,505 Scottish Neighbourhood Statistics data zones using a score derived from seven domains of deprivation: income; employment; health; education, skills and training; geographic access to services; crime; and housing. This ranking was used to group the data zones into two classes: the most deprived data zones, which contain approximately 20 per cent of the 2009 mid-year population, and the rest. The two classes are termed the 'most deprived' and the 'less deprived'.

Table 3.6.1 and Table 3.6.2 show participation rates, in terms of headcount and FTE, in further education by deprivation class and year together with the ratio of participation from the most deprived data zones to that from the less deprived. This is an indicator of how strongly participation is related to deprivation in an area. In particular:

- this ratio, for headcount participation, has increased since 2006-07 from 1.32 to 1.63 so that participation in the most deprived data zones is about 63 per cent higher than that in the less deprived;
- headcount participation has declined overall in both classes; and
- in 2010-11 the FTE participation of the most deprived class was 98 per cent higher than that of the less deprived. This gap has increased from 62 per cent in 2006-07. FTE participation in the less deprived class is lower as these students are more likely to undertake short, non-vocational study.

Table 3.6.1 Headcount participation in FE by deprivation class and year

Year	Deprivation		Ratio of most to less deprived
	Less deprived	Most deprived	
	Rate/1,000		
2006-07	61.1	80.9	1.32
2007-08	60.2	83.4	1.39
2008-09	57.6	82.2	1.43
2009-10	51.6	76.4	1.48
2010-11	44.5	72.5	1.63

Table 3.6.2 FTE participation in FE by deprivation class and year

Year	Deprivation		Ratio of most to less deprived
	Less deprived	Most deprived	
	Rate/1,000		
2006-07	15.9	25.8	1.62
2007-08	15.9	26.6	1.67
2008-09	16.0	28.0	1.75
2009-10	15.6	28.4	1.82
2010-11	14.8	29.2	1.98

Figure 3.6.1 and Figure 3.6.2 show trends over years in headcount participation by deprivation class and by gender and age group respectively.

These indicate that:

- for men and women headcount participation has declined for both classes; and
- between 2006-07 and 2010-11, there was only an increase in headcount participation among the 'young' in the most deprived class; otherwise, participation decreased.

Figure 3.6.1 Trends in headcount participation in FE by gender and deprivation class

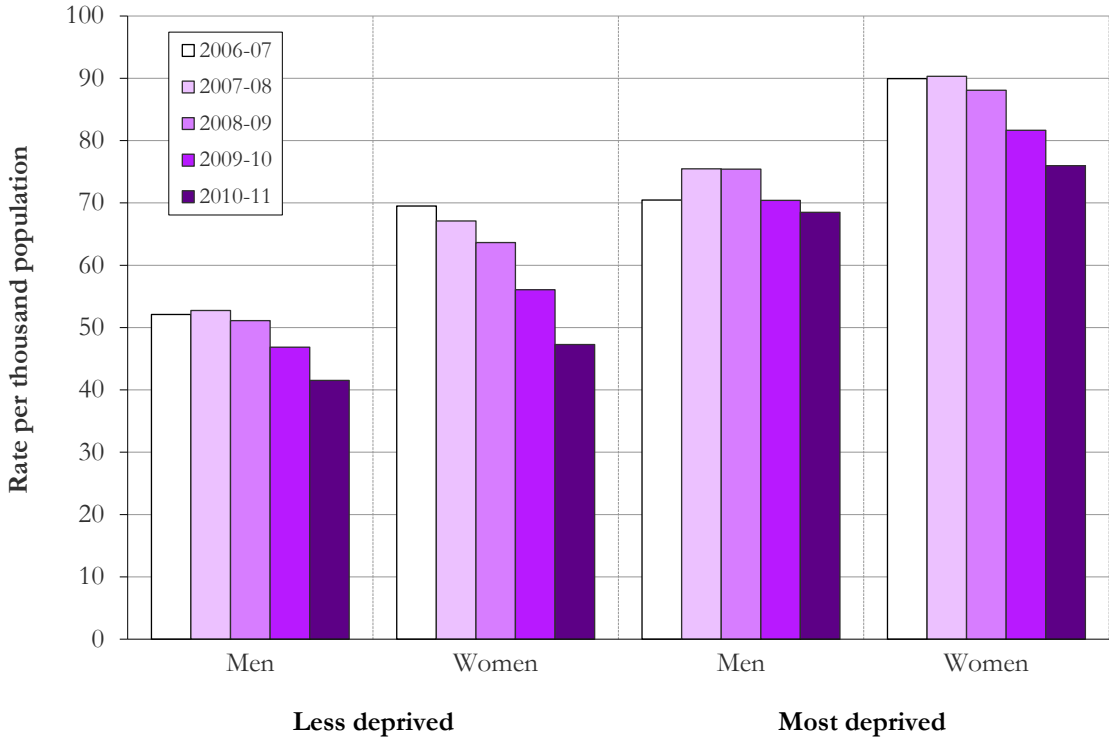
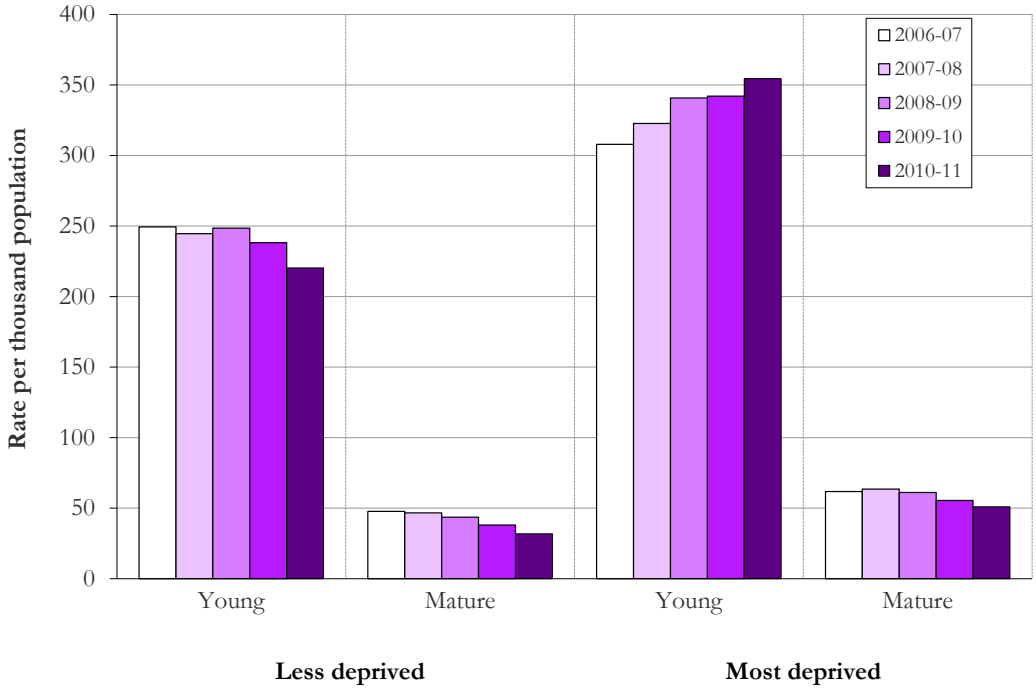


Figure 3.6.2 Trends in headcount participation in FE by age group and deprivation class



Note
Young = 16-19, Mature = 20 and over

Table 3.6.3 shows participation rates in further education by deprivation class and local authority for 2010-11 together with the ratio of participation from the most deprived data zones to that from the less deprived. A number of local authorities have relatively small populations in the most deprived data zones and are therefore likely to have fluctuating participation rates. These have been indicated in the table.

Excluding those with small populations, Aberdeenshire has the highest participation in their most deprived data zones compared to the less deprived (2.37), and West Lothian has the lowest participation in the most deprived datazones compared to the least deprived (1.19).

Table 3.6.3 Headcount participation in FE by local authority and deprivation class, 2010-11

Local Authority	Deprivation class: Less deprived Rate/1,000	Deprivation class: Most deprived Rate/1,000	Ratio of most to less deprived
Aberdeen City	35.1	70.8	2.01
Aberdeenshire	43.8	103.8	2.37
Angus	66.0	110.3	1.67
Argyll & Bute	52.9	76.6	1.45
Clackmannanshire	44.9	55.6	1.24
Dumfries & Galloway	45.1	68.3	1.52
Dundee City	52.2	75.4	1.44
East Ayrshire	41.3	62.4	1.51
East Dunbartonshire	39.6	70.4	1.78
East Lothian (*)	36.3	59.3	1.64
East Renfrewshire	36.0	67.0	1.86
Edinburgh, City of	36.7	67.3	1.84
Eilean Siar	74.3	-	-
Falkirk	41.0	54.8	1.34
Fife	48.4	71.9	1.49
Glasgow City	51.2	81.2	1.59
Highland	42.4	52.7	1.24
Inverclyde	52.3	63.7	1.22
Midlothian	38.8	46.9	1.21
Moray (*)	47.9	-	-
North Ayrshire	41.8	64.4	1.54
North Lanarkshire	45.1	58.4	1.29
Orkney Islands	118.1	-	-
Perth & Kinross	41.9	58.8	1.40
Renfrewshire	52.4	72.1	1.38
Scottish Borders	35.3	76.4	2.16
Shetland Islands	185.0	-	-
South Ayrshire	37.3	58.3	1.56
South Lanarkshire	39.0	52.8	1.35
Stirling	37.2	51.8	1.40
West Dunbartonshire	52.3	67.5	1.29
West Lothian	46.9	55.7	1.19
Scotland	**44.9**	**69.2**	**1.54**

Notes
* = local authorities that have a relatively small population in the most deprived deprivation class (below 3,000 in 2010)
- = no population in that class

4. Participation in higher education

This section covers participation in higher education by Scottish students at universities within the UK and at Scotland's colleges. Students who are Scottish domiciled but studying abroad are not included, but they are likely to be relatively few. Students studying at all levels, postgraduate, first degree or sub-degree ('other undergraduate'), have been included unless otherwise stated. However, students classified as 'writing up', on sabbatical or 'dormant' are excluded.

The numbers presented here will differ slightly from those presented elsewhere in, for example, *Learning for All, (Scottish Funding Council, 2012)* and *Students in Higher Education Institutions* (e.g. HESA, 2012). This is because in this report:

- only students domiciled in Scotland are included;
- the student population is defined differently, by, for example, excluding students who are writing up PhDs; and
- we have attempted to avoid double counting of students who enrol more than once in a year.

As well as number of students (headcount), participation is also presented in terms of full-time equivalents (FTE). For students at universities, FTE is estimated with reference to a full-time full-year student who would normally receive an FTE of one. FTE for those on part-time courses or who leave part way through a year are estimated pro-rata on either a credit or time basis. For students in further education colleges in Scotland a broadly comparable FTE was calculated based on the number of hours of study as a proportion of the expected number of hours for a full-time course. See Appendix 1 for more information.

It should be borne in mind that the number of people studying in higher education in any year will depend, to some extent, on the length of courses, the numbers studying part-time and on levels of non-completion. An increase in the numbers completing courses in a shorter time will also tend to reduce participation rates. This would happen, for example, if more students on higher national courses articulate into the second or subsequent years of a degree course rather than having to start in year one. Focusing on entrants to higher education largely avoids these issues, and is also addressed in the publication *Participation Rates for Entrants to Scottish Higher Education* (April 2012), which is restricted to students up the age of 30.

4.1. Overview

Table 4.1.1 summarises the number of students, FTE and participation rates in higher education between 2006-07 and 2010-11. These rates have remained stable in this time period, despite an increase in FTE.

Table 4.1.1 Participation in HE

	Headcount		FTE	
	Count	Rate/1,000	Count	Rate/1,000
2006-07	233,704	55.4	157,732	37.4
2007-08	227,514	53.6	157,632	37.1
2008-09	230,018	53.8	159,299	37.3
2009-10	233,445	54.3	163,219	38.0
2010-11	232,740	53.8	165,343	38.2
% change 2009-10 to 2010-11	-0.3	-0.9	1.3	0.7

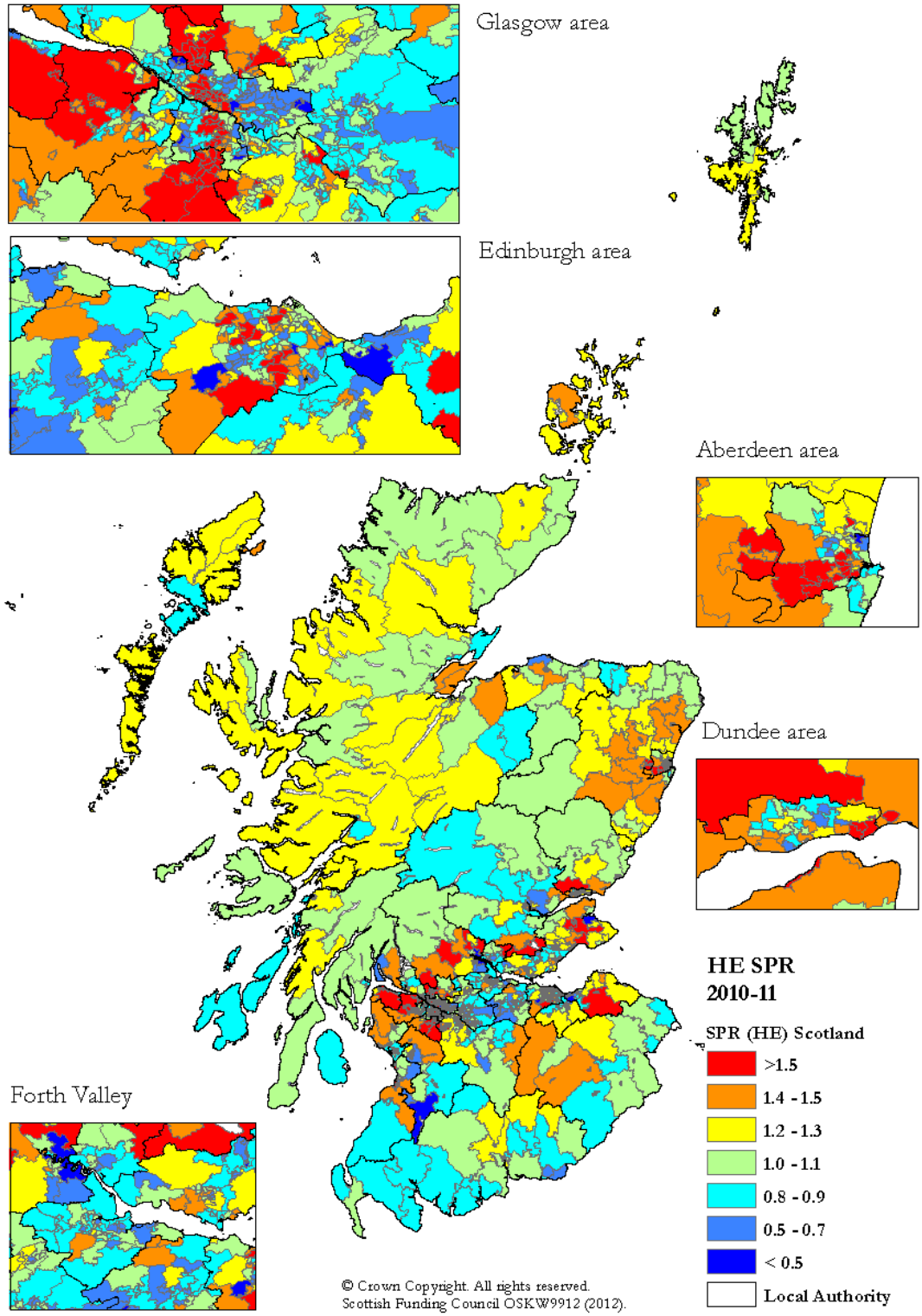
Note
Rates/1,000 are the number of students per thousand head of the population aged 16 and over.

Geographical variation in participation in 2009-10 is illustrated in Figure 4.1.1. Areas with relatively high participation are mainly in or around the major cities. Relatively low participation is found mainly within parts of Glasgow, Edinburgh, East Ayrshire, Forth Valley, East Lothian and east Fife.

Areas with evidence of an increasing or decreasing trend in participation are highlighted in Figure 4.1.2. Most Local Authority areas show no evidence of a trend. A clear increase in trend is only evident in parts of Glasgow, Borders and Eilean Siar.

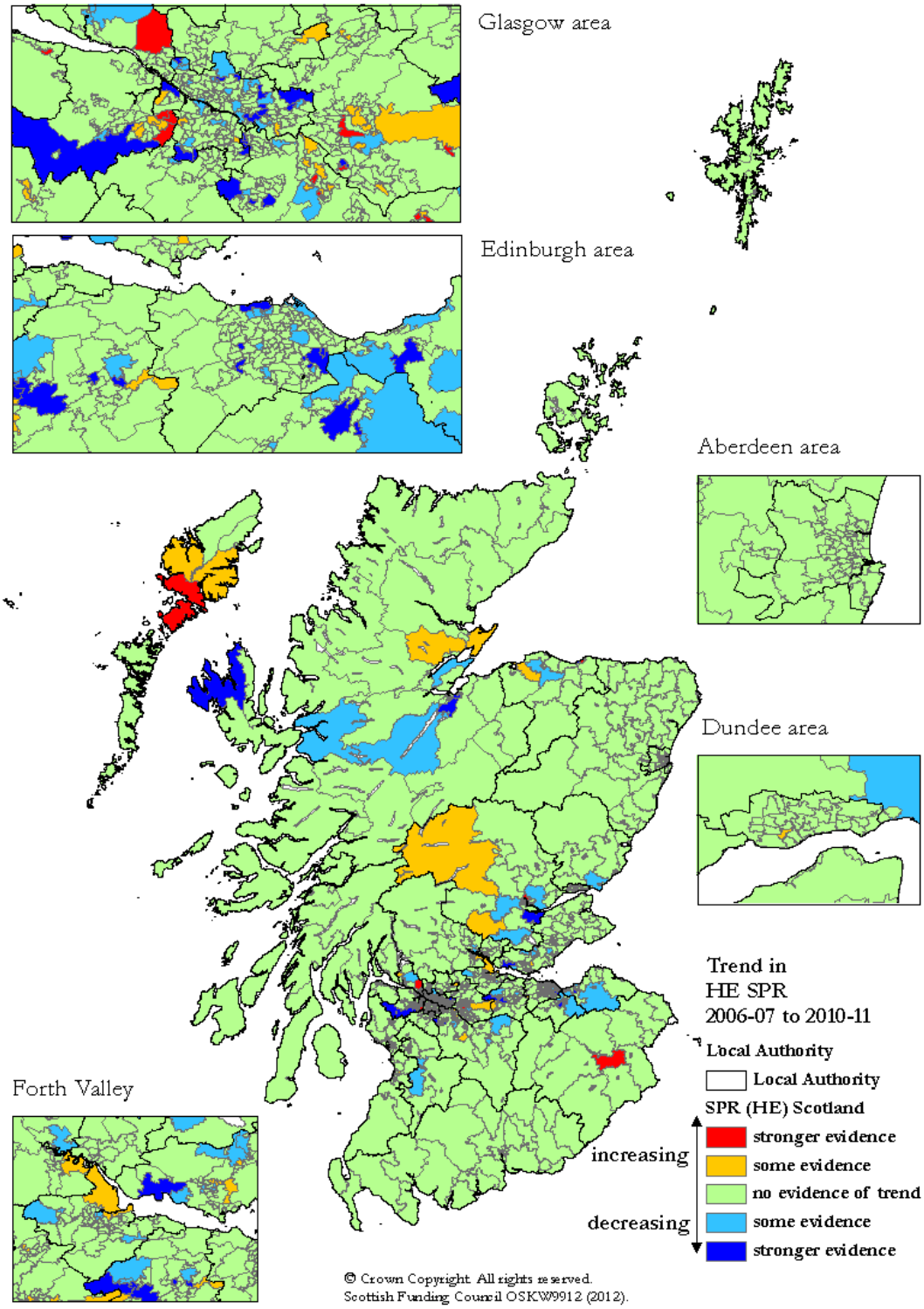
Variation in FTE participation is shown in Figure 4.1.3. Comparing with Figure 4.1.1, some areas, such as parts of the Lothians and some areas around Aberdeen, are relatively higher in terms of FTE because they tend to have a higher proportion of full-time students. Conversely, areas such as the Highlands tend to have a higher proportion of part time students.

Figure 4.1.1 Geographical variation in headcount participation in HE, 2010-11



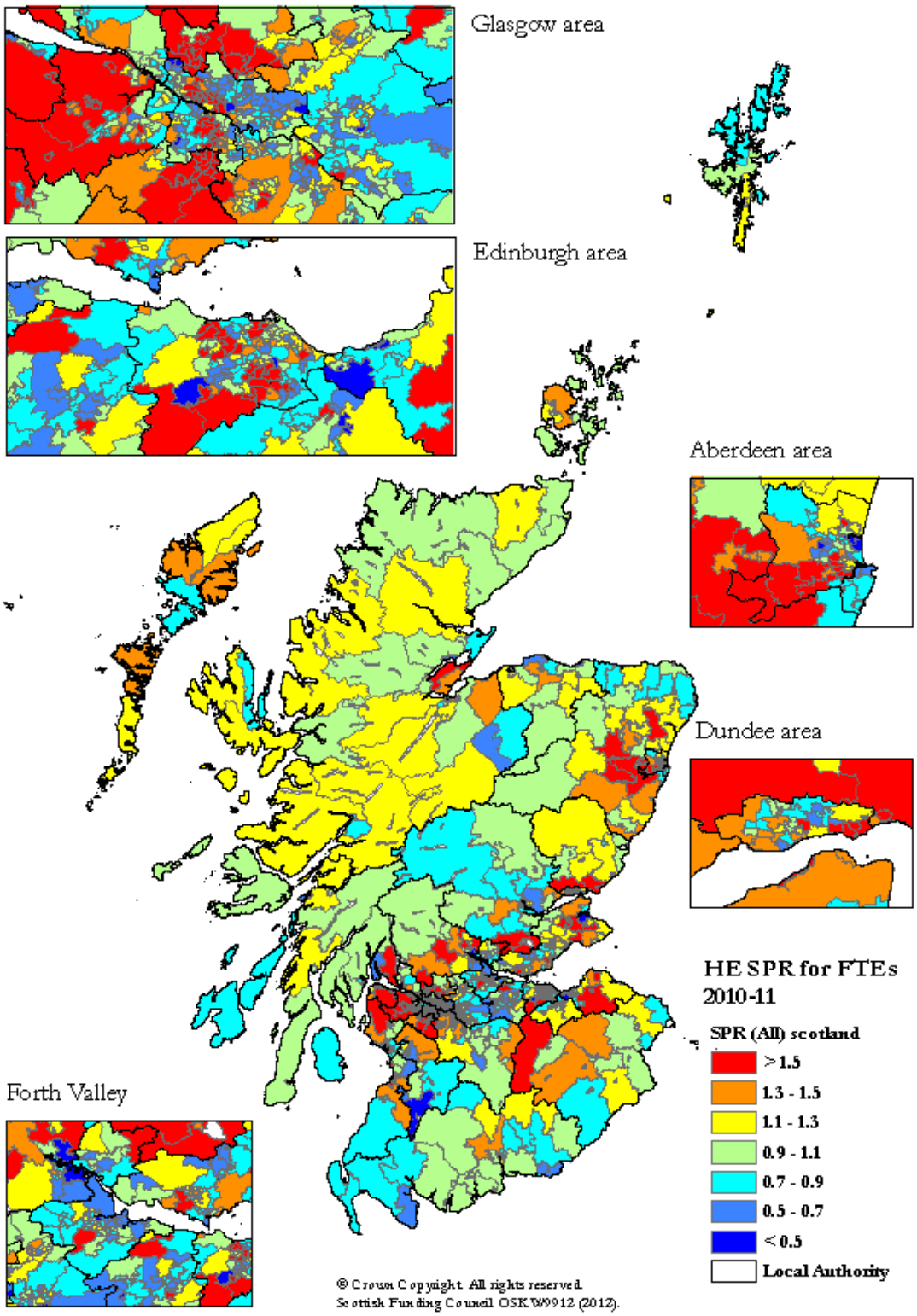
Notes
The Standardised Participation Ratio (SPR) compares the number of participants in an area with what would be expected if national age-gender specific participation rates were applied to the area's population. The SPR ensures areas with differing age-gender distributions are comparable. The national SPR is one. Areas in cyan are close to the national value.

Figure 4.1.2 Strength of statistical evidence of change in headcount participation in HE, 2006-07 to 2010-11



Note
The map highlights those areas which have shown an increasing or decreasing trend in SPR as derived from a statistical model. See Appendix 1 for more information.

Figure 4.1.3 Geographical variation in FTE participation in HE, 2010-11



4.2. Trends by age and gender

Trends by age and gender are summarised in Figure 4.2.1 and Figure 4.2.2. Headcount and FTE participation rates for men and women have fluctuated between 2006-07 and 2010-11.

Participation is consistently higher by women than men, and it should be noted that the difference in the overall participation rates ('All ages') is affected by the fact that there are rather more elderly women than men in the post school leaving population. As participation is low in the elderly they have the effect of reducing overall rates and more so in women than men. Thus, the difference between men and women in the 'Working age' rates is rather larger than in the 'All ages' rate.

Looking at change in young people aged 16-20 since 2007-08, there has been an increase in male and female participation.

The age distribution of headcount participation rates for men and women in 2010-11 is shown in in Figure 4.2.3. Headcount participation is higher in women at most ages and the gap between male and female participation at its maximum at age 19.

Figure 4.2.1 Headcount participation rates in higher education by age and gender

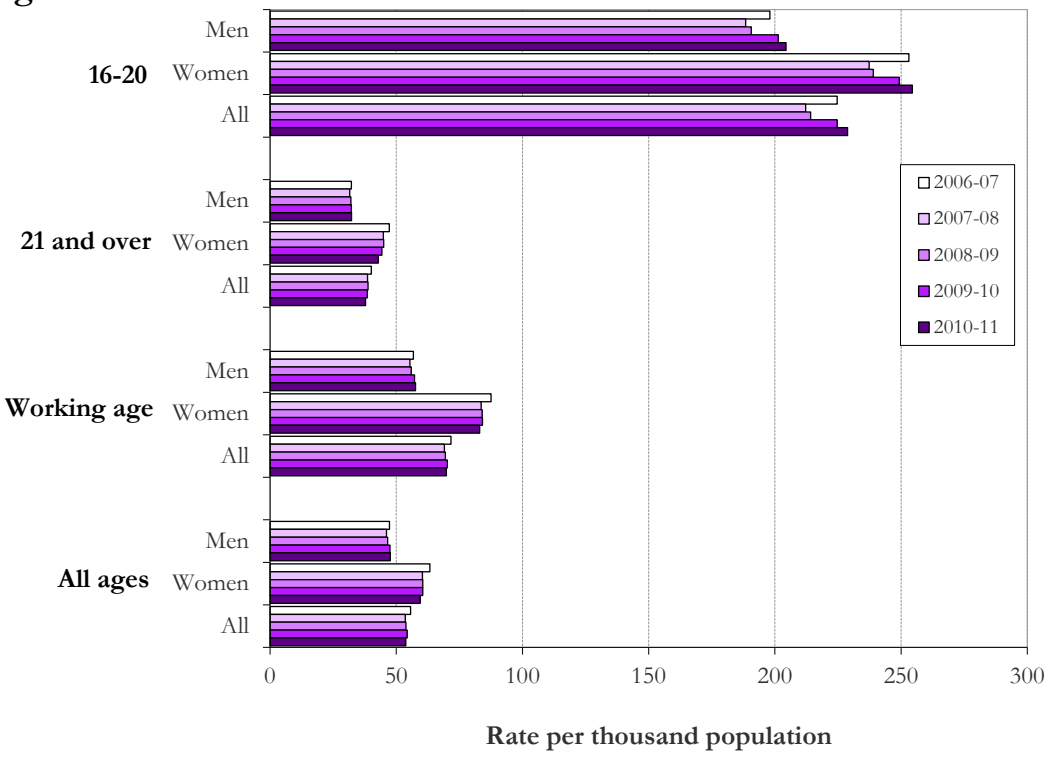
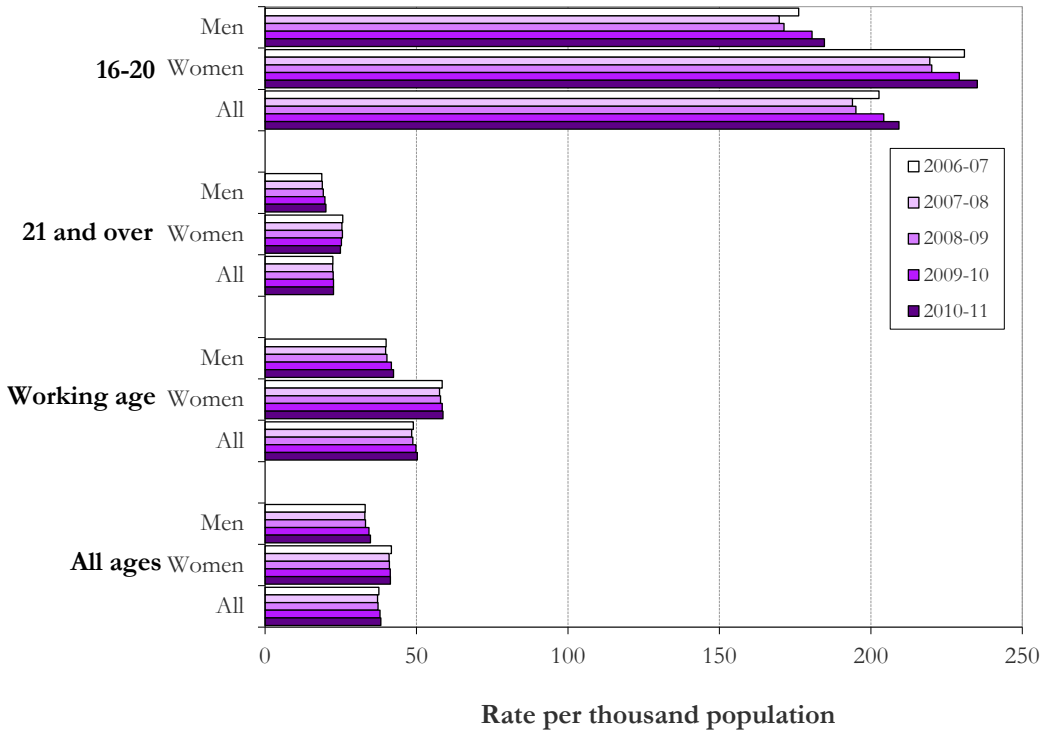
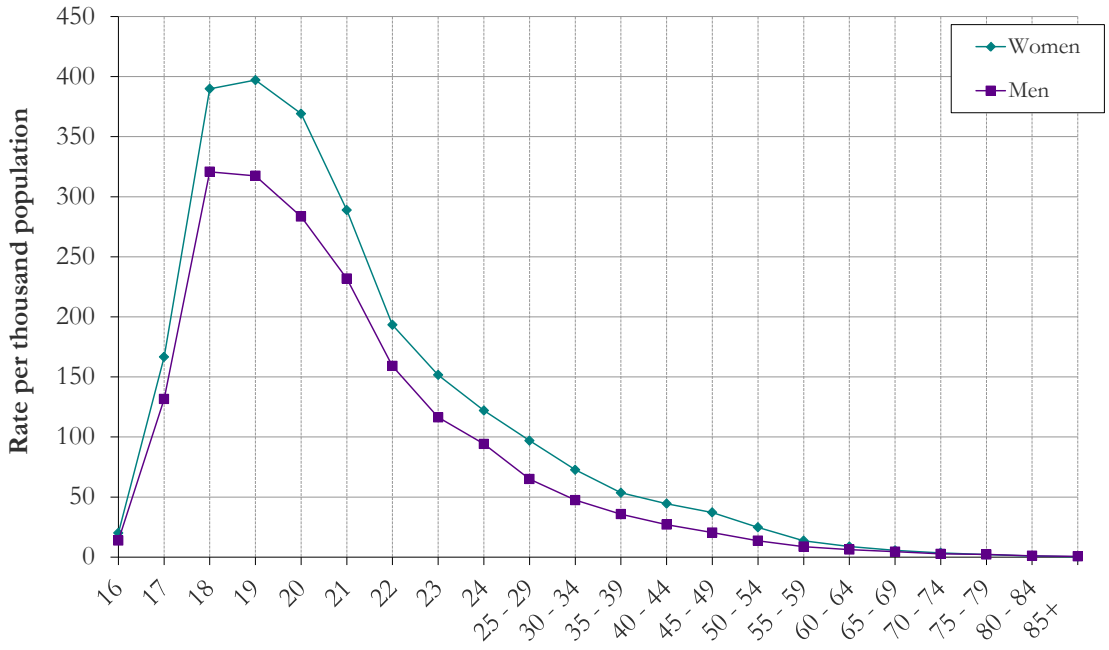


Figure 4.2.2 FTE participation rates in higher education by age and gender



Note
Rates are calculated using the relevant population group, e.g. women aged between 16 and 20.

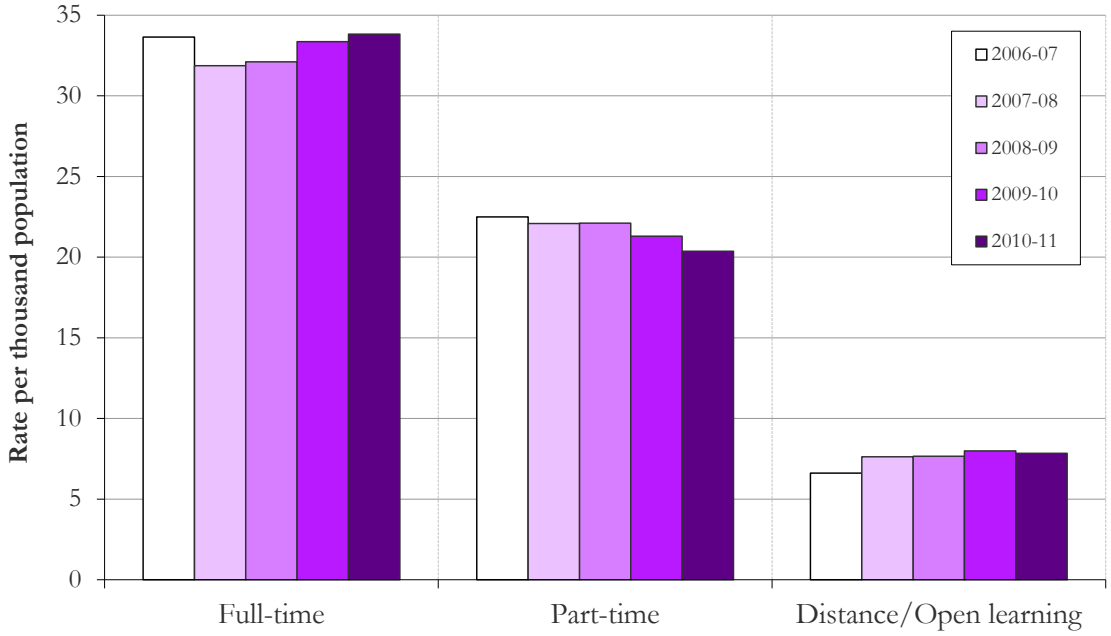
Figure 4.2.3 Participation rates in HE by age and gender, 2010-11



4.3. Trends by mode of study

Figure 4.3.1 shows the rates of participation according to mode of study. The small numbers of students on 'short full-time' courses have been classed as part-time.

Figure 4.3.1 Headcount participation in HE by mode of study



Part-time headcount participation has declined since 2006-07, although the full-time rate has been increasing since 2007-08. In terms of FTE, there has been an increase for full-time courses (3.4%), and a decline of six per cent for part-time courses over the five-year period presented.

Within the colleges 'distance/open learning' students include those on courses designed for private study and flexible learning. The vast majority of all distance learners are mature students (21 and over) and around 61 per cent are studying at the OU. Around 13 per cent of all HE students are enrolled on distance/open learning courses. It should be noted however, that many institutions allow a range of mixed modes of study with students able to move between distance and face-to-face learning. Thus the student record may not always clearly differentiate distance/open learning modes from other forms of part-time study.

Overall, between 2006-07 and 2010-11, participation rates in distance/open learning increased by 18 per cent in terms of headcount, and by around 10 per cent in terms of FTE.

Trends in full-time and part-time participation for men and women are illustrated separately in Figure 4.3.2. In both genders, part-time participation

has declined overall since 2006-07, and full-time participation has increased since 2007-08.

Figure 4.3.2 Headcount participation in HE by mode of study and gender

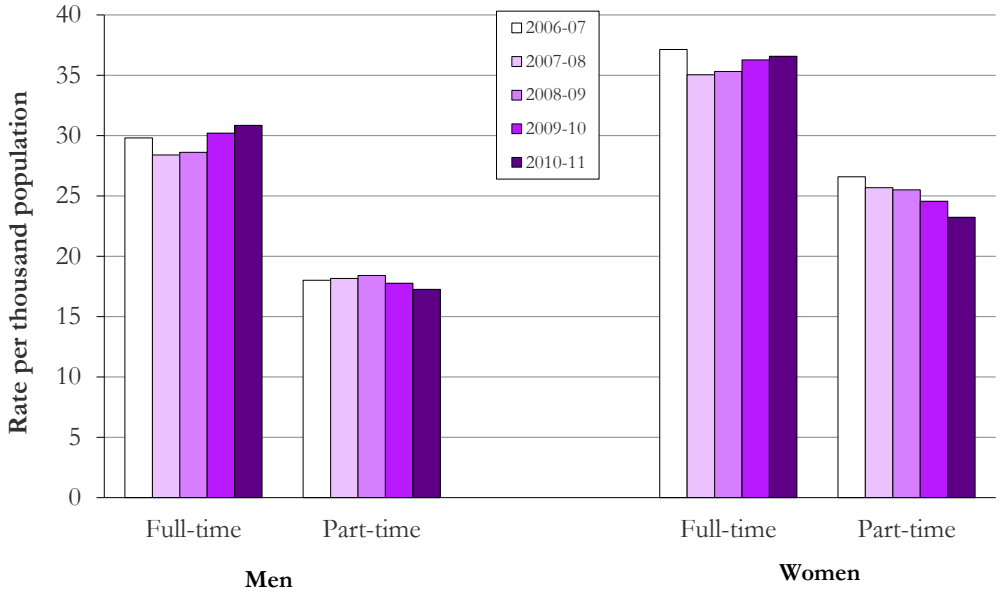
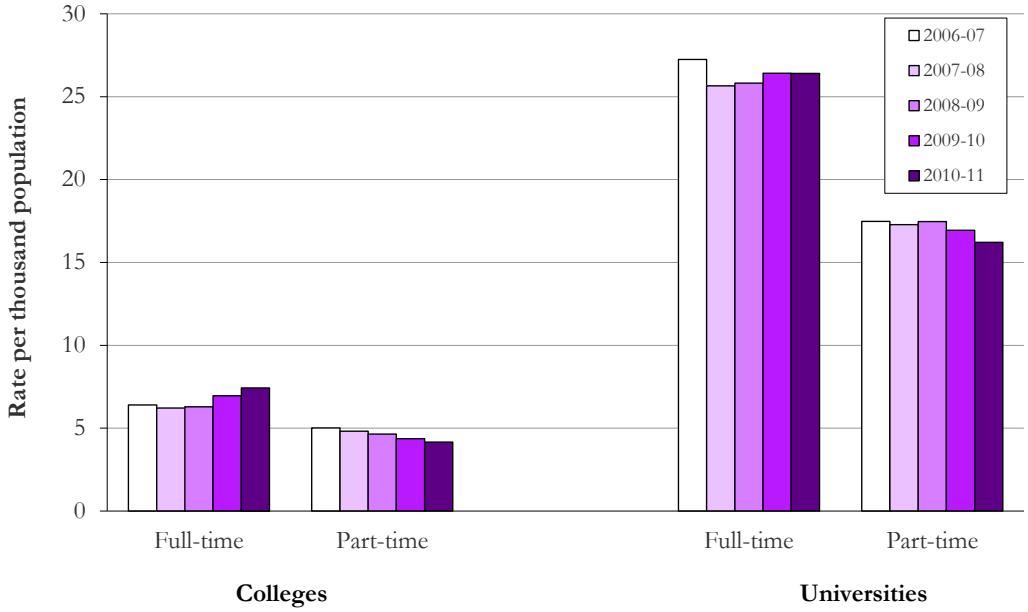


Figure 4.3.3 shows that in both colleges and universities part-time participation has declined. Full-time participation has been increasing since 2007-08; albeit with an overall increase in participation in colleges, and an overall decrease in universities from 2006-07.

Figure 4.3.3 Headcount participation in HE within colleges and universities by mode of study

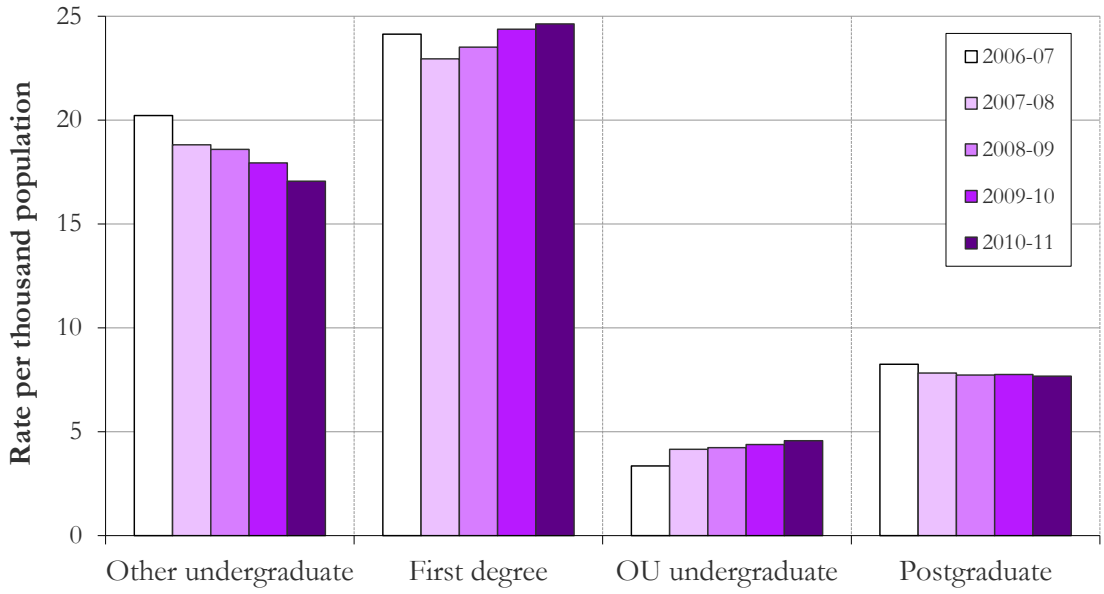


4.4. Trends by level of study

Figure 4.4.1 shows participation rates according to level of study. Students at the Open University (OU) study individual modules and are not required to link these to a specific qualification aim. They may do so at some point but the circumstances and timing of this can vary considerably from one student to another. As a result, OU undergraduate students are shown separately.

Participation at first degree and OU undergraduate level has increased overall, whereas that for 'Other undergraduate' and postgraduate has decreased over the five-year period presented.

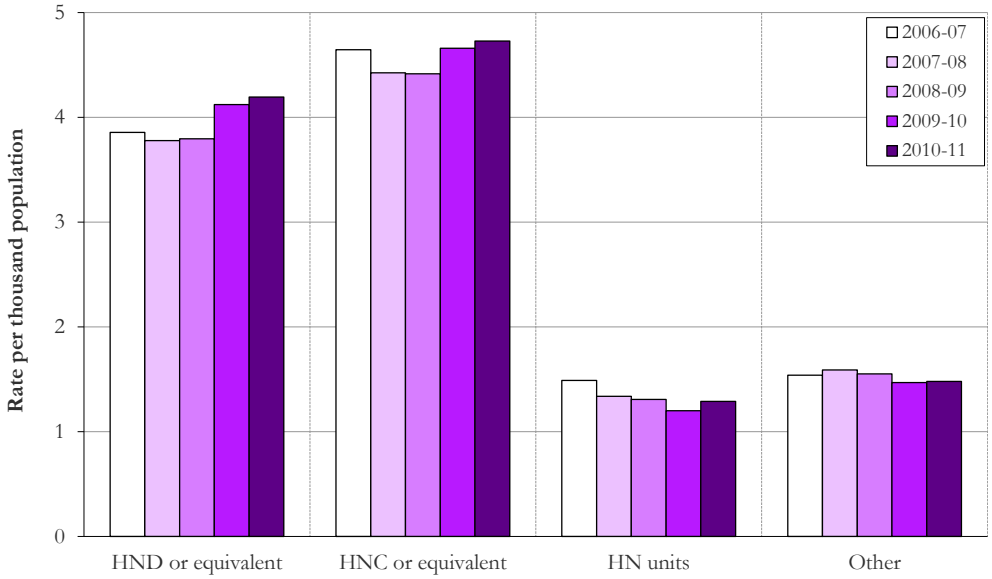
Figure 4.4.1 Participation in HE by level of study



Note
There is a small overlap between the levels of study as some students studied courses at more than one level in the same year.

The category 'Other undergraduate' comprises a variety of qualification aims in both universities and colleges. Within the colleges the vast majority of HE students fall into this category and most are studying for an HNC, HND, or HN units. The number studying for the former two has increased since 2007-08, whereas the number studying for HN units has decreased overall since 2006-07, as shown in Figure 4.4.2.

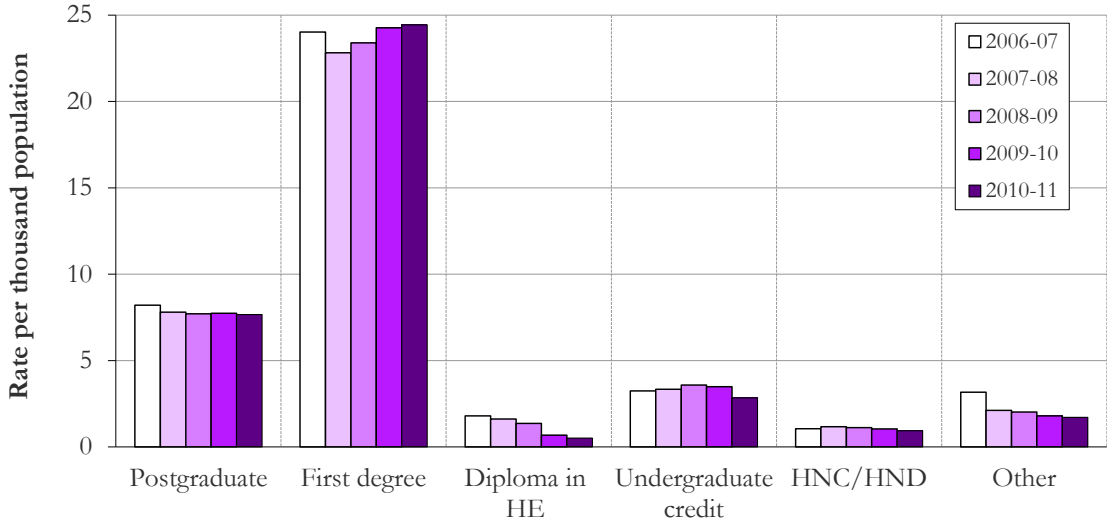
Figure 4.4.2 Headcount participation in HE within colleges by level of study



Excluding the OU, the most popular qualification aims for 'Other undergraduates' within the universities are undergraduate credits, which may be counted towards other HE qualifications, followed by Diploma of Higher Education and HNC/HND (although these two positions reversed in 2009-10 due to a decline in the numbers studying for diplomas). The number studying for undergraduate credits increased up to 2009-10 before decreasing again in 2010-11, whereas Diploma and HNC/HND numbers have declined overall (Figure 4.4.3). 'Other undergraduate' numbers at universities have also declined since 2006-07.

Participation has decreased overall between 2006-07 and 2010-11 for those studying for postgraduate degrees; after an initial decrease, participation in those taking first degrees has increased since 2007-08.

Figure 4.4.3 Headcount participation in HE within universities by level of study (excluding Open University undergraduate students)



Considering both colleges and universities as a whole, the decline in the total number of 'Other undergraduates' as shown in Figure 4.4.1, has mainly been in those studying for Diplomas. 'Other undergraduates' headcount and FTE rates have declined by 13 and one per cent respectively, between 2006-07 and 2010-11.

Figure 4.4.4 and Figure 4.4.5 show trends in headcount and FTE participation by level of study and gender between 2006-07 and 2010-11. Headcount and FTE participation at first degree level follows a similar pattern for both males and females, with an initial decline, followed by an increase. Headcount and FTE participation at post graduate level has slightly declined in women but there is a slight increase in headcount participation in males. Male postgraduate FTE remained at a similar level over the five years presented.

At 'other undergraduate level' there is a decline in headcount rates for both males and females, with the decline being more pronounced in females. Overall, FTE increased in males, but decreased in females.

Figure 4.4.4 Headcount participation in HE by level of study and gender (excluding Open University undergraduate students)

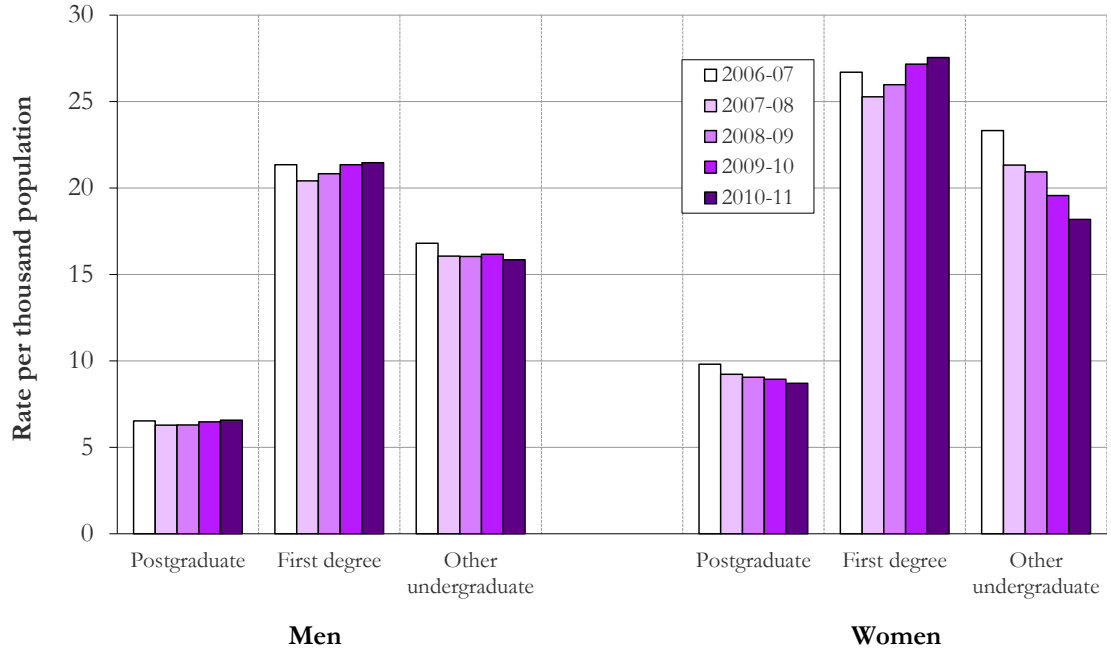
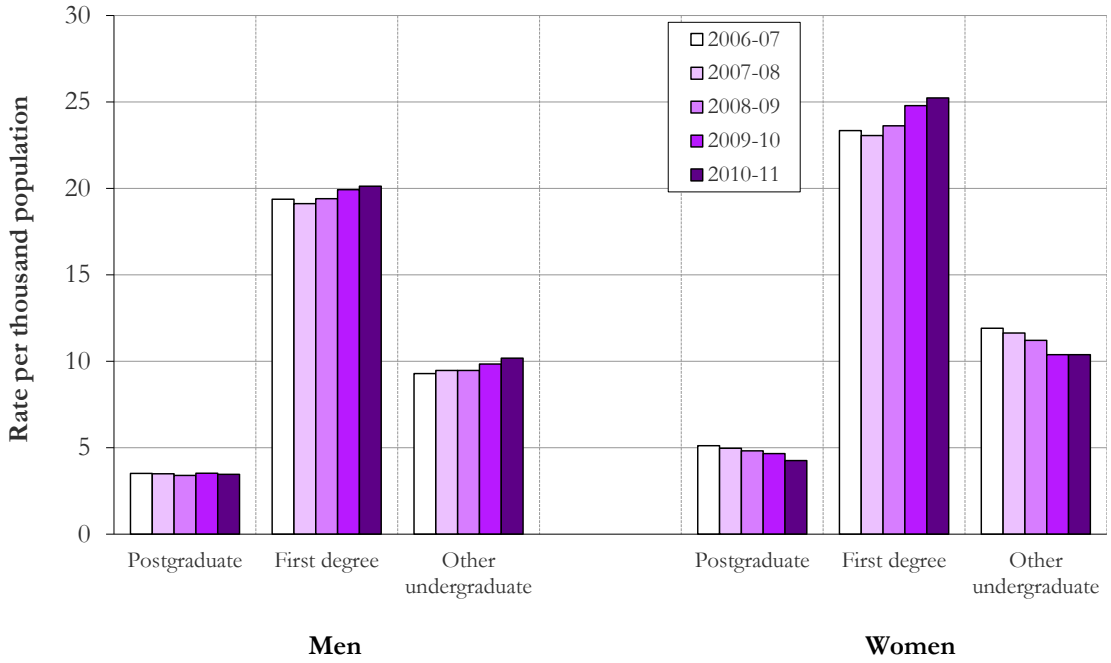


Figure 4.4.5 FTE participation in HE by level of study and gender (excluding Open University undergraduate students)



4.5. Local authority trends

Table 4.5.1 summarises current levels of participation in higher education by local authority and trends since 2006-07. Figure 4.5.1 and Figure 4.5.2 show trends in standardised participation for headcount and FTE respectively.

In 2010-11:

- headcount SPR ranged from 0.81 (Falkirk) to 1.51 (East Renfrewshire); and
- FTE SPR ranged from 0.83 (Falkirk) to 1.57 (East Renfrewshire);
- East Dunbartonshire and East Renfrewshire have particularly high participation in terms of both headcount and FTE. Both areas have a relatively high proportion of school leavers entering higher education (see Appendix 2);
- Dumfries and Galloway has one of the lowest raw rates of participation but a relatively higher SPR because it has a relatively old population compared to other local authorities (in 2010 an estimated 53 per cent of those above school leaving age (16 and over) were 50 or over compared to 44 per cent for Scotland as a whole).

Between 2006-07 and 2010-11:

- Dundee City, East Dunbartonshire and Renfrewshire experienced a significantly declining trend in participation in terms of headcount; and
- Glasgow City experienced a significant increase in headcount participation.

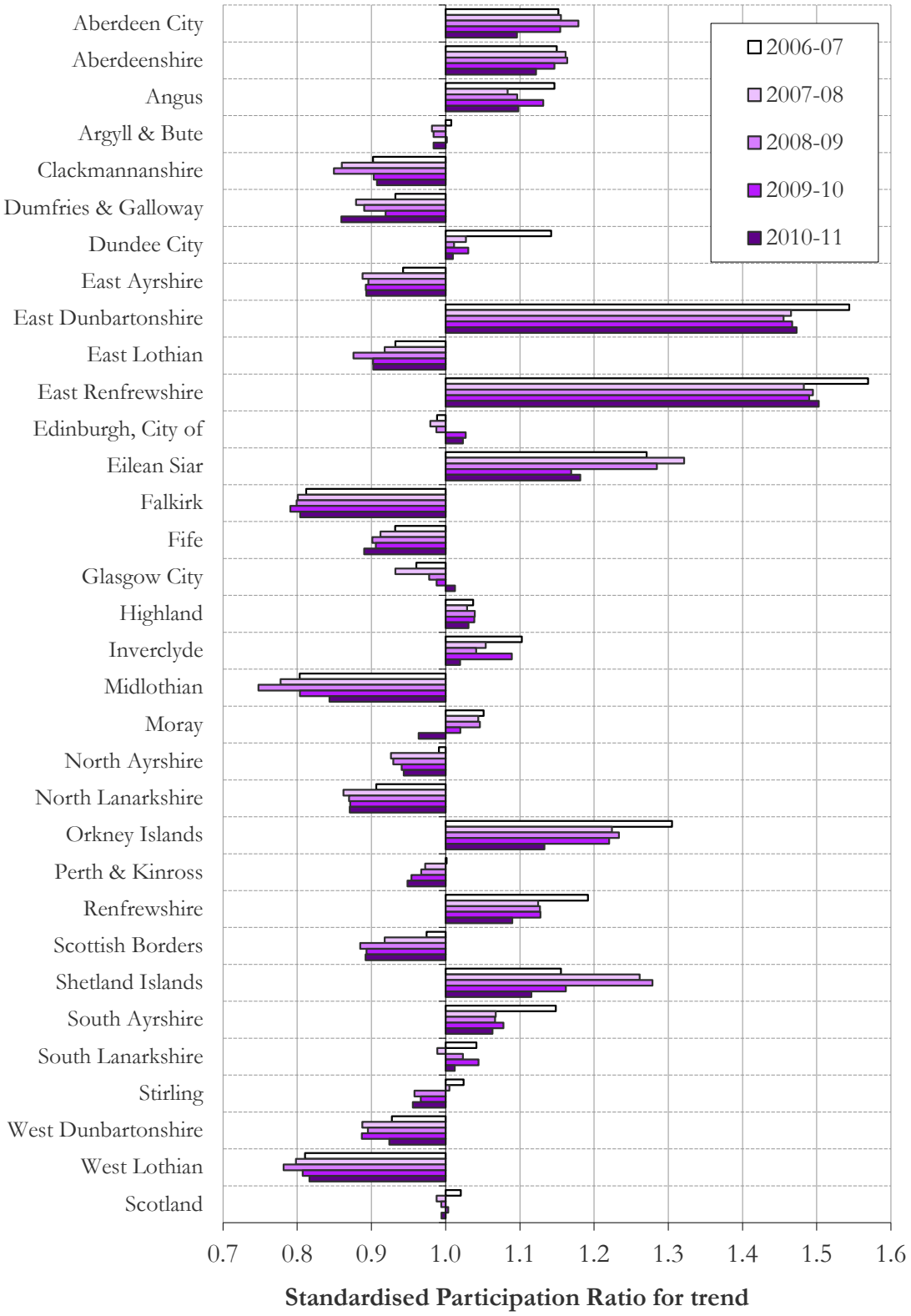
The above results and the other trends in this report are based on a statistical model. Further details are available in our technical report, please approach the contacts on the front page.

Table 4.5.1 Participation in higher education by local authority

Local authority	Headcount			FTE	
	2010-11 Rate /1,000	2010-11 SPR	Trend (2006-07 to 2010-11)[1]	2010-11 Rate /1,000	2010-11 SPR
Aberdeen City	62.7	1.10		40.4	1.00
Aberdeenshire	57.3	1.13		39.4	1.10
Angus	53.6	1.11		38.6	1.13
Argyll & Bute	48.5	0.99		34.3	0.97
Clackmannanshire	48.8	0.91		35.6	0.93
Dumfries & Galloway	41.0	0.87		29.0	0.86
Dundee City	58.4	1.01	↓	43.8	1.05
East Ayrshire	47.7	0.90		34.2	0.90
East Dunbartonshire	75.6	1.48	↓	54.8	1.50
East Lothian	47.6	0.91		35.8	0.95
East Renfrewshire	78.2	1.51		58.2	1.57
Edinburgh City	59.0	1.03		42.2	1.06
Eilean Siar	57.1	1.19		41.3	1.21
Falkirk	43.3	0.81		31.3	0.83
Fife	49.2	0.89		34.6	0.87
Glasgow City	60.3	1.02	↑	42.1	1.01
Highland	51.3	1.04		34.6	0.99
Inverclyde	53.5	1.03		39.3	1.06
Midlothian	45.2	0.85		32.8	0.86
Moray	50.3	0.97		34.1	0.91
North Ayrshire	48.9	0.95		35.2	0.96
North Lanarkshire	47.6	0.88		34.9	0.91
Orkney Islands	56.8	1.14		38.1	1.07
Perth & Kinross	49.4	0.95		36.1	0.97
Renfrewshire	57.9	1.10	↓	42.0	1.12
Scottish Borders	43.5	0.90		31.3	0.91
Shetland Islands	59.9	1.12		38.2	0.99
South Ayrshire	52.7	1.07		38.4	1.10
South Lanarkshire	53.2	1.02		37.8	1.02
Stirling	56.4	0.96		40.8	0.93
West Dunbartonshire	50.1	0.93		36.0	0.94
West Lothian	45.1	0.82		32.9	0.84
Scotland	**53.8**	**1.00**		**38.2**	**1.00**

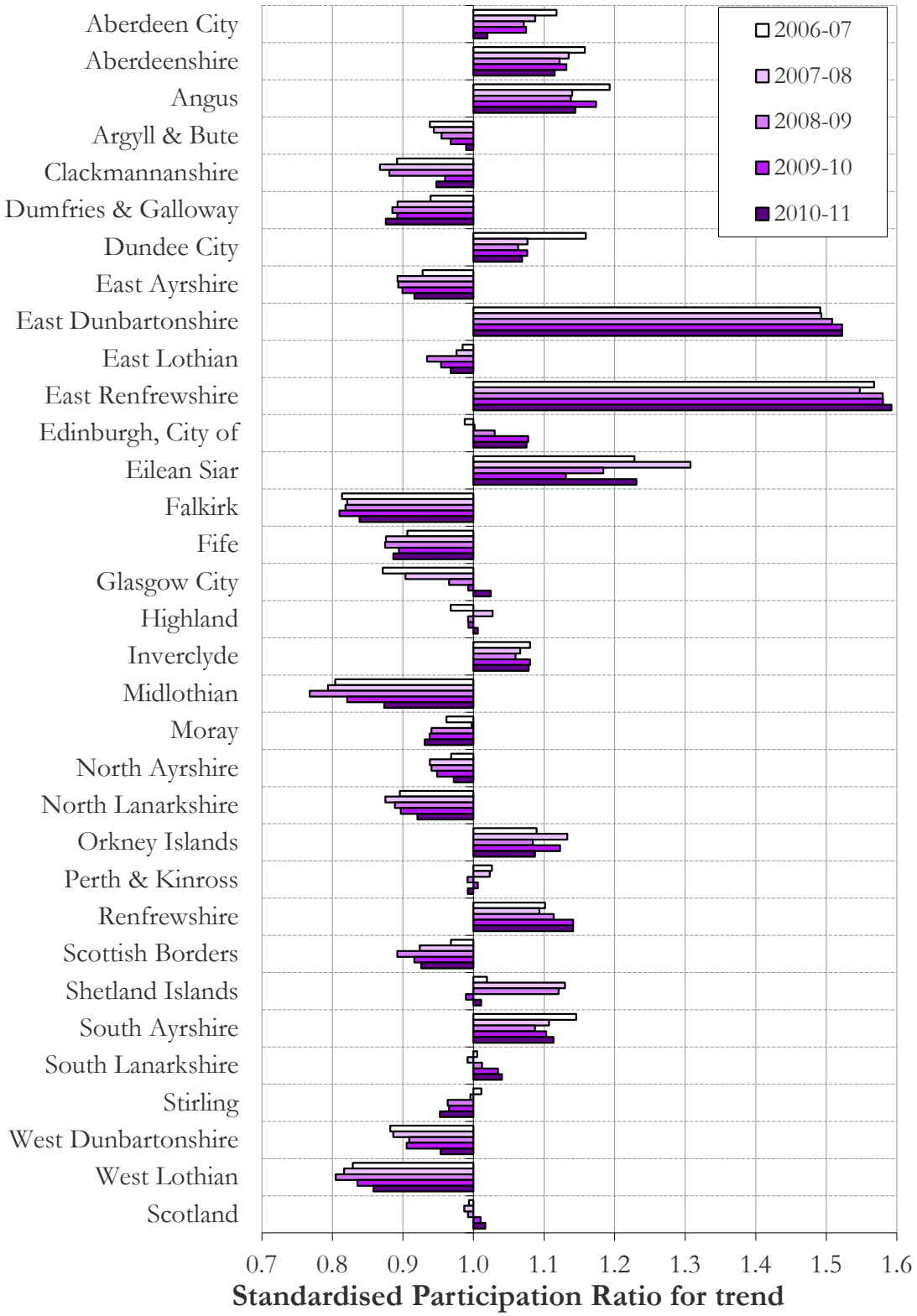
[1] A statistical model has been used to identify areas where the trend in participation is likely to be real rather than a result of random fluctuations

Figure 4.5.1 Trends in standardised headcount participation in HE by local authority



Note
The five-year national average Standardised Participation Ratio (SPR) for trend is one. Thus SPRs above or below one are above or below this national average.

Figure 4.5.2 Trends in standardised FTE participation in HE by local authority



Note
The five-year national average Standardised Participation Ratio (SPR) for trend is one. Thus SPRs above or below one are above or below this national average.

4.6. Participation within deprivation classes

The Scottish Index of Multiple Deprivation 2009 (SIMD) (Scottish Government, 2009) ranks each of the 6,505 Scottish Neighbourhood Statistics data zones using a score derived from seven domains of deprivation: income; employment; health; education, skills and training; geographic access to services; crime; and housing. This ranking was used to group the data zones into two classes: the most deprived data zones, which contain approximately 20 per cent of the 2009 mid-year population, and the rest. The two classes are termed the 'most deprived' and the 'less deprived'.

Table 4.6.1 shows participation rates in higher education by deprivation class and year together with the ratio of participation from the most deprived data zones to that from the less deprived. This is an indicator of how strongly participation is related to deprivation in an area. In particular:

- this ratio has increased since 2006-07 from 0.62 to 0.72; and
- participation has declined in the less deprived class and has been increasing since 2007-08 in the most deprived class.

Table 4.6.1 Headcount participation in higher education by deprivation class and year

Year	Deprivation		Ratio of most to less deprived
	Less deprived	Most deprived	
	Rate/1,000		
2006-07	60.3	37.2	0.62
2007-08	57.8	36.4	0.63
2008-09	57.8	37.4	0.65
2009-10	58.1	38.4	0.66
2010-11	56.7	41.0	0.72

Figure 4.6.1 and Figure 4.6.2 show trends in headcount participation by deprivation class and by gender and age group respectively. These indicate that:

- for women, participation has noticeably declined in the less deprived data zones, and increased in the most deprived data zones;
- participation has increased in males from the most deprived datazones;
- young participation has increased in both the less deprived data zones (after an initial decrease), and the most deprived zones; and
- mature participation was little changed in the most deprived, although there was a slight decline in the least deprived zones.

Figure 4.6.1 Trends in headcount participation in HE by gender and deprivation class

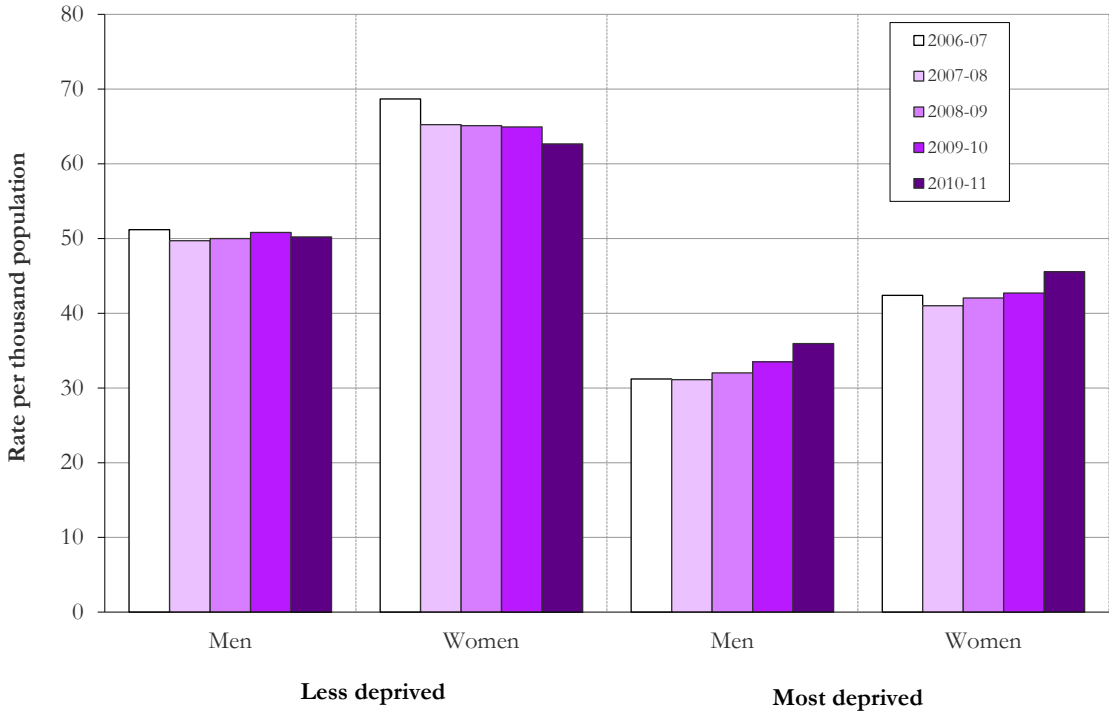
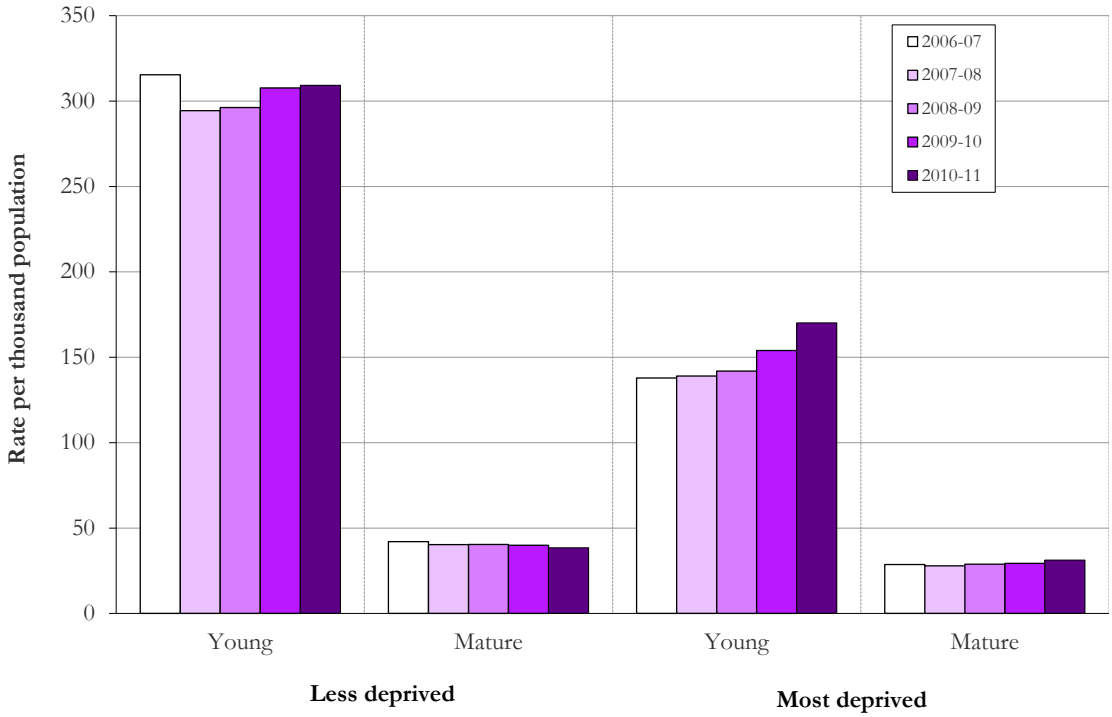


Figure 4.6.2 Trends in headcount participation in HE by age group and deprivation class



Notes
Young = 16 - 20, Mature = 21 and over

Table 4.6.2 shows participation rates in higher education by deprivation class and local authority for 2010-11 together with the ratio of participation from the most deprived data zones to that from the less deprived. A number of local authorities have relatively small populations in the most deprived class and are therefore likely to have fluctuating participation rates. These have been indicated in the table.

Excluding those with small populations, Angus has the highest participation in their most deprived data zones compared to the less deprived (0.99), and Stirling has the lowest participation in the most deprived datazones compared to the least deprived (0.44).

Table 4.6.2 Headcount participation in HE by local authority and deprivation class, 2010-11

Local Authority	Deprivation		Ratio of most to less deprived
	Less deprived	Most deprived	
	Rate/1,000		
Aberdeen City	64.6	48.1	0.74
Aberdeenshire	57.9	26.0	0.45
Angus	53.6	53.1	0.99
Argyll & Bute	50.0	31.2	0.62
Clackmannanshire	53.4	33.1	0.62
Dumfries & Galloway	42.0	31.3	0.75
Dundee City	65.2	46.5	0.71
East Ayrshire	52.0	36.6	0.70
East Dunbartonshire	76.8	45.5	0.59
East Lothian (*)	48.3	28.4	0.59
East Renfrewshire	80.1	51.9	0.65
Edinburgh, City of	61.5	41.3	0.67
Eilean Siar	57.1	-	-
Falkirk	44.7	32.2	0.72
Fife	52.4	33.3	0.63
Glasgow City	76.6	43.3	0.57
Highland	52.5	38.8	0.74
Inverclyde	66.2	36.4	0.55
Midlothian	46.2	31.5	0.68
Moray (*)	50.9	24.8	0.49
North Ayrshire	53.7	38.9	0.72
North Lanarkshire	52.3	36.4	0.70
Orkney Islands	56.9	-	-
Perth & Kinross	50.0	37.3	0.75
Renfrewshire	61.5	47.3	0.77
Scottish Borders	44.3	24.4	0.55
Shetland Islands	59.9	-	-
South Ayrshire	54.6	42.6	0.78
South Lanarkshire	57.6	33.9	0.59
Stirling	58.6	25.8	0.44
West Dunbartonshire	53.7	42.9	0.80
West Lothian	48.2	30.2	0.63
Scotland	**57.1**	**39.8**	**0.70**

Notes
* = local authorities that have a relatively small population in the most deprived deprivation class (below 3,000 in 2010)
- = no population in that class

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Appendix 1: Methodology

Further detail of the methods used to prepare and analyse the data used in this report is presented in a separate technical report, which is available on request.

Data sources

The principal sources of data are the Further Education Statistics (FES) student record for FE and HE participation within the college sector; the Higher Education Statistics Agency (HESA) student records for HE participation in the university sector; and population estimates from the National Records of Scotland (NRS). Data from the pupil census of publicly-funded schools in Scotland were also included in some analyses. All pupils who are aged 16 or over by the beginning of March have been included, including those at special schools, were included.

FES student record

The FES student record contains details of all enrolments on courses at FE Colleges in Scotland that attract funding from the Scottish Funding Council (SFC).

The enrolment data were used to estimate a headcount of the number of participants on FE and HE courses in each academic year, and a full-time equivalent (FTE) measure that roughly quantifies a student's total study time in relation to that for a full-time course. Multiple enrolments by an individual student were detected by matching enrolments by students with the same student number, initials, gender, date of birth and the same or similar surname.

The FTE for each enrolment was calculated in a way designed to be broadly comparable with data from the HESA student record. FTE for full-time enrolments is calculated as the proportion of course days completed, so those completing a course get an FTE of one. For part-time enrolments FTE was estimated using the number of hours of study as a proportion of the expected number of hours for a full-time course. This was set at 720 hours for FE enrolments, 600 hours for Higher National Diploma courses and 480 hours for other HE enrolments. The number of hours of study had to be imputed for non-funded students, using information from students on the same or similar courses.

FTE could not be calculated reliably for each year of courses split across two academic years. Therefore students on these courses were given an

FTE for the whole course when in their final year of study. This should not substantially affect overall estimates of FTE where the full-course FTE given to final year students will compensate for first year students getting a zero FTE, but may slightly bias estimates for small geographical areas.

For each student, the FTE for each enrolment were summed to give an overall FTE and, where relevant, a separate FTE for their HE and FE courses. A maximum FTE of one is set for all students from the FES record except those on courses for special needs students whose full-time courses can take rather longer than 720 hours of study. These were allowed a maximum FTE of two.

HESA student record

The HESA student record covers all students enrolled at a higher education institution in the UK for each academic year. Thus, this analysis does not cover students studying abroad. The student record includes the institution's academic judgement of a student's FTE which is calculated by the institutions with reference to a full-time, full-year student who would normally receive an
FTE of one. FTE for those on part-time courses or who leave part way through a year are estimated pro-rata on either a credit or time basis. A complication arises when an academic year spans two HESA years which runs from the 1st August to the 31st July. Institutions are not required to split a student's FTE across the years provided the overall FTE for the programme of study is correct. This will not affect overall estimates of FTE but may slightly bias estimates for small geographical areas.

Inclusions/Exclusions

For each academic year students and school pupils were included if their domicile was in Scotland and they were 16 or over by the 28th February of the academic year in question. Thus the vast majority of schoolchildren who were not eligible to leave school either prior to, or during the academic year were excluded. Nonetheless, as the school census is carried out in September we have unavoidably included pupils who leave school in December rather than staying on for post-compulsory education. In addition, there will be a small amount of double counting when pupils leave school in December and then undertake an FE or HE course in the same academic year.

For some courses at FE colleges that are funded from sources other than the SFC (full cost recovery courses) only a summary of the number of enrolments is available. These have, of necessity, been excluded as there is

insufficient information to identify multiple enrolments by the same individuals. However, the vast majority of courses are funded by the SFC and in 2007-08 data was unavailable for only about 23,000 enrolments.

Population estimation

NRS has published annual mid-year population estimates for Scotland by data zone, gender and single year of age for 2005 to 2009. As with the 2001 census, full-time students and schoolchildren studying away from home are recorded at their term-time address which raises an issue for measuring participation. To estimate the proportion of an area's resident population which is engaged in study, students should ideally be recorded at their home residence. Otherwise, the resident population will be over-estimated for areas with significant amounts of student accommodation and under-estimated for areas with students studying away from home.

Information is available from the 2001 census on the number of schoolchildren and students in full-time education living away from home in term-time and on the number of full-time students and schoolchildren in an area by their accommodation type. Those recorded as living in student group households or educational establishments are likely to be living away from home. For each area and year, the number of students away from home and the number who live elsewhere were estimated and used to estimate the area's resident population. This revised estimate of the mid-year population was then aged by three months to provide estimates of the population on the 1st October.

These estimates of the resident population may still be inaccurate in that we can only calculate very approximate estimates for the number of students. However, they will be closer to the true resident population than the NRS published figures.

Comparable figures for the number of students according to their age on the 1st October were then used to calculate participation rates.

Measuring participation

National levels of participation for student subgroups have been presented as rates per thousand head of population. However, to facilitate an examination of geographical variation in participation some standardisation is required as different areas are likely to have different participation rates simply because one area has a different demographic composition – an older population or a different gender balance for example. Such rates have therefore been standardised by comparing the observed number of

participants to what would be expected if national age-gender specific participation rates applied. This gives rise to a *Standardised Participation Ratio* (SPR) where values above or below one indicate that the area has higher or lower participation respectively than Scotland as a whole, taking into account the area's age-gender composition.

FTE has been presented in the same way as headcount: as population rates and SPRs.

Mapping participation

Participation has been mapped using the Scottish Neighbourhood Statistics Intermediate Geography. Intermediate geography areas, or intermediate zones, are aggregations of data zones within local authorities and contain between 2,500 and 6,000 people. Data zones are too small to provide stable participation rates and too numerous to allow easy detection of geographical patterns. There are 1,235 intermediate zones thereby providing a reasonable level of local detail.

Students were allocated to data zones, and thence to intermediate zones, using their home postcode. Data zones for students whose postcode was missing, invalid or found to match an institutional postcode were imputed using a process called hot-decking. This uses characteristics which are available for all students which help estimate where a student's data zone is likely to be. For FE college students, their campus and local authority were used as the characteristics, whereas the student's previous institution (usually a school or FE college) and local authority were used for university students. Overall, data zones for 1.8 per cent of both college and university students were imputed.

Participation has been mapped in terms of the SPR using a common scale that shows in green those areas close to the national rates and uses shades of yellow to red and of blue for those above or below the national rates respectively. Inevitably when values are mapped using a small set of classes (colours), some values will be close to the boundary with the adjacent class. This should be kept in mind when interpreting the maps.

A problem arises when SPRs for relatively small areas like intermediate zones are based on a small number of participants. An extreme value for the SPR can arise by chance that doesn't reflect the underlying level of participation for that area. Smoothed estimates of the underlying SPR can be obtained by using statistical models that incorporate information about the participation in the neighbourhood surrounding each area. If participation in this neighbourhood tends to be homogeneous then it makes

sense to use this neighbourhood as a guide to what the area's SPR would be if more information were available. The resulting SPRs are called shrinkage estimates because the models tend to shrink an area's SPR towards the SPR of the whole neighbourhood.

However, the shrinkage estimate is only substantially different from the original SPR if the number of participants is small and the neighbourhood is fairly uniform. Thus models have little effect on maps of overall FE or HE participation but more so for subgroups of students.

Smoothed estimates are presented using, for simplicity, the local authority containing each intermediate zone as the neighbourhood.

Detecting trends

To examine change in participation within intermediate zones and local authorities, participation rates were standardised using the combined national rates across the five years included in the study, rather than the rates for each year separately. The resulting measure is termed the Standardised Participation Ratio for Trend, or Trend SPR for short. Thus the Trend SPR will be greater than one for years with a higher participation than the overall national rate across the five years.

Statistical models were used to identify significant trends over the five years considered (i.e. those not likely to be simply due to random fluctuation). The models take account of the consistency that is likely in an area's participation from one year to the next as some of the same students will be studying in both years and many of the factors that affect an area's participation will change slowly.

Deprivation

To examine levels of participation in relation to deprivation, the Scottish Index of Multiple Deprivation 2009 (SIMD) was used (Scottish Government, 2009). This provides a ranking for each data zone derived from seven domains of deprivation: income; employment; health; education, skills and training; geographic access to services; crime; and housing. This is in contrast to the 2007-08 report where the 2006 SIMD version was used. The ranking was used to group the data zones into two classes: the most deprived data zones, which contain approximately 20 per cent of the 2009 mid-year population, and the rest.

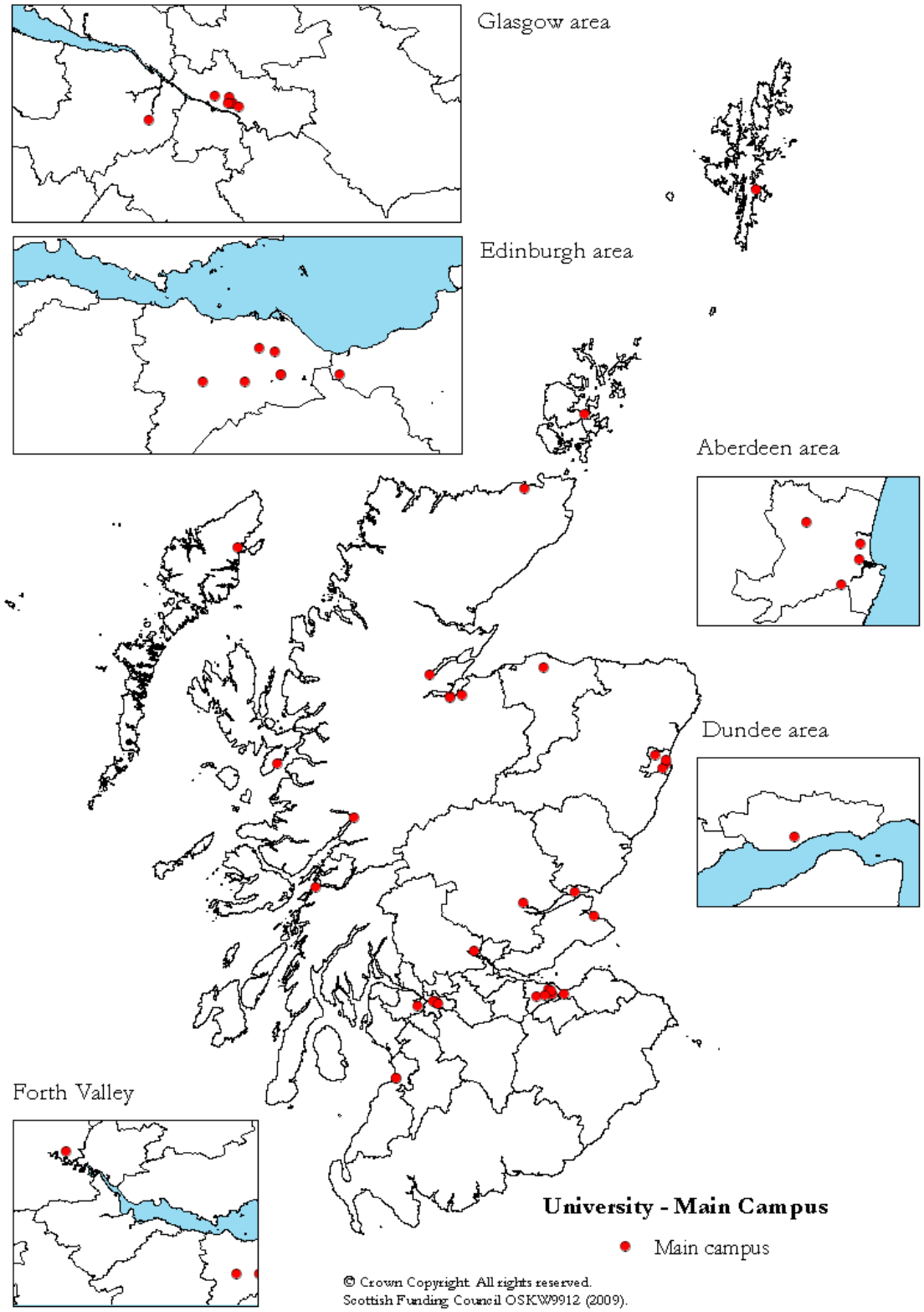
Two classes were used in preference to a common alternative of dividing the data zones into five quintiles of equal population. This is because the SIMD

is designed to primarily detect particularly deprived areas and the less deprived quintiles are not so clearly distinguishable. However, the basis of the division into two classes is still quintile based, with four of the five quintiles being combined to form the less deprived class.

It should also be noted that earlier academic years are also being compared with SIMD 2009, and that in some areas which are now recorded as deprived might not have been recorded as deprived in previous editions of SIMD.

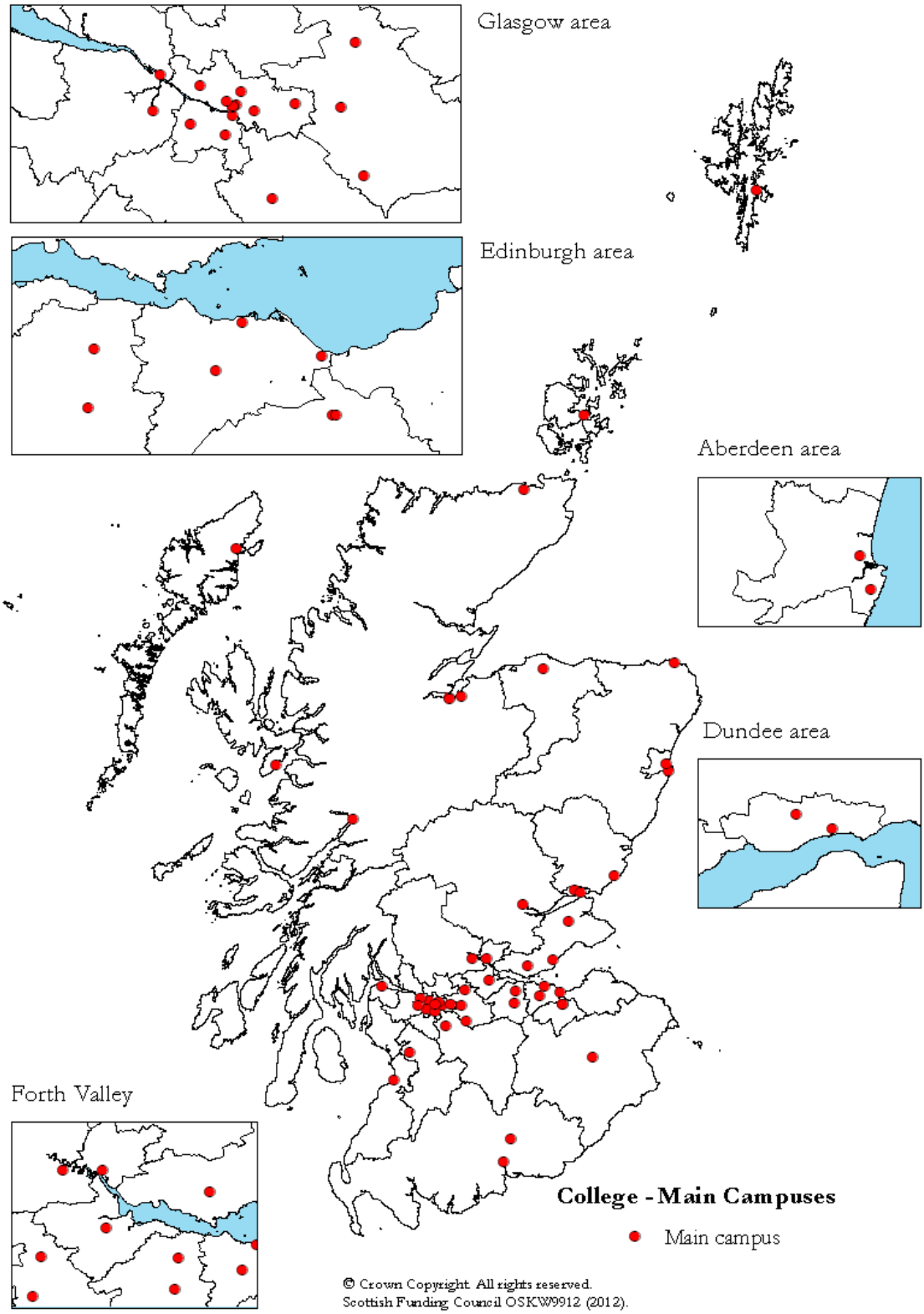
Appendix 2: Context maps

Figure A2.1 University main campus locations, 2010-11



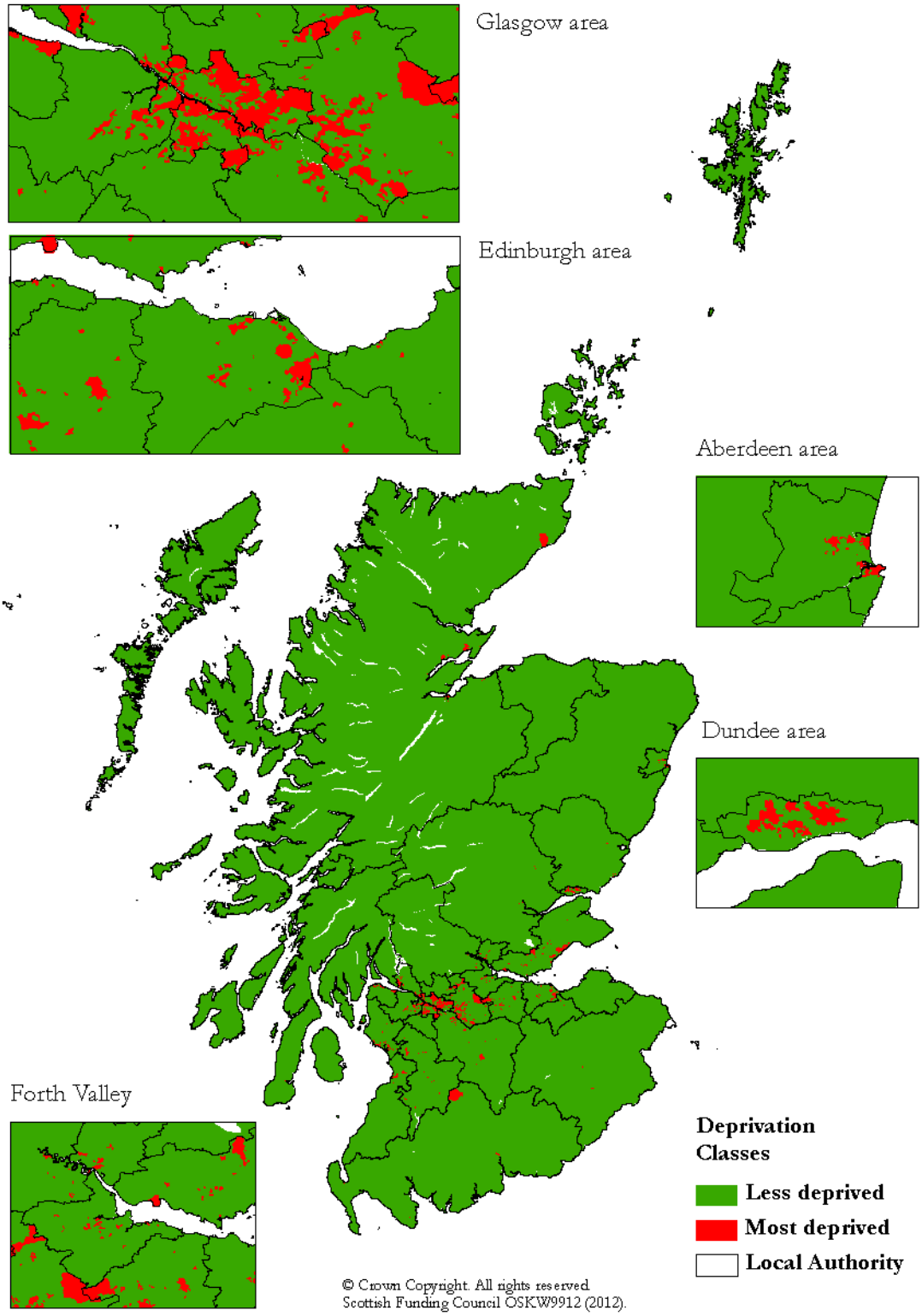
Note
Campuses identified from a combination of university websites and HESA student returns

Figure A2.2 College main campus locations, 2010-11



Note
Locations identified from college returns.

Figure A2.3 Scottish Index of Multiple Deprivation, most deprived data zones, 2009 version 2



Note
Classes derived from the Scottish Index of Multiple Deprivation 2009v2 (Scottish Government, 2010). See Appendix 1 for more information.