

Going Deeper: Church attendance statistics and clergy deployment

1 Introduction

When considering church growth there are a huge variety of elements that may be taken into account. The *From Anecdote to Evidence* report summarises the work of a number of researchers between 2011 and 2013.¹ This report seeks to extend the work in the Statistics strand carried out by Voas and Watt, and the work of Goodhew et al in a sub-strand on amalgamations and team ministries. Further work by Tweedie demonstrated that how the geographic location of a diocese, that is, how rural or urban it is, was also of significance.²

This report extends this earlier work in a number of ways at the level of parishes rather than dioceses. The general aim is to focus our attention on factors which can be changed, such as the number of churches or clergy within a benefice. By identifying the effects of inevitable factors such as parish location and population change, we can partition those and examine more closely the effects of clergy and benefice structure.

Firstly, I look at where a parish is situated – a rural area, or in a town or city – in two ways. On one hand, for continuity we use the classifications, based on access to services, from the previous report. Then on the other hand, we use classifications from DEFRA that are used in other parts of the Church of England. Secondly, I consider the population change in the parish between National Censuses in 2001 and 2011, asking if a parish that has seen a growth in population is more likely to have greater attendance. Thirdly, we look at the size of the congregation – is a larger congregation more likely to grow? By examining these factors, and laying to one side the effects that they have, we may seek to gain a clearer view of the effects of benefice structure and clergy deployment.

Having controlled for rurality, population change and size of congregation, we find that the number of clergy per church has a significant effect on church growth, in particular the change in the number of stipendiary clergy per church between 2005 and 2011. An increase in clergy is associated with the likelihood of growth in attendance, while a decrease in clergy is associated, on average, to a decline in attendance. There is no significant difference in church growth with different numbers of churches in a benefice.

¹<http://www.churchgrowthresearch.org.uk/UserFiles/File/Reports/FromAnecdoteToEvidence1.0.pdf> summarises the findings of the Church Growth Research Programme in 2011-2013, last accessed 10 January 2016.

http://www.churchgrowthresearch.org.uk/UserFiles/File/Reports/Report_Strands_1_2_rev2.pdf. Voas and Watt, accessed 9 June 2014.

<http://www.churchgrowthresearch.org.uk/UserFiles/File/Reports/AmalgamationsandTeamsReportFINAL130214.pdf> Goodhew, with Kautzer and Moffatt, accessed 9 June 2014.

² http://www.churchgrowthresearch.org.uk/UserFiles/File/Reports/Stronger_as_One1.pdf. Tweedie, accessed 14 October 2015.

1.1 Report structure

The subsequent sections deal with the different factors that we consider. Section 2 deals with rurality, introducing the IMD access to services material as used by Tweedie, before turning to the DEFRA classifications. In summary, there are structural differences in benefices across the different ruralities, with areas which are more rural tending to have more churches within a benefice. The number of churches within a benefice makes no statistical difference in average standardised attendance. This holds at both 2001-2011 and 2006-2011 time periods. There are statistical differences in parishes described as *Urban city and town* or *Rural town and fringe*, which have seen significantly less growth only within the 2001-2011 period.

Change within the population of the parish could also be expected to have an effect on church attendance and Section 3 details the data processing and analysis. There is a statistically significant effect of population change on attendance; on average, parishes with an increase in population show more growth, those with a decline in population show less growth. This is less pronounced in more rural areas. There is no statistical difference in standardised attendance between benefices with different numbers of churches.

In previous work, the size of a congregation had not been considered within the analysis. If we control for the location of the church and the change in population, we find in section 4 that congregation size is also statistically significant, but that the effect of this is different in different areas.

The final section, Section 5 looks at the deployment of clergy over the period 2005-2011. Having controlled for the effects of the other factors, we ought to gain a clearer picture of the effects of this factor. We consider clergy present in 2011 and the number of clergy-years between 2005 and 2011, before discovering that the change in clergy deployment, that there has been an increase or decrease in this period is a better predictor of parish growth. Parishes with an increase in clergy over this period are associated with more growth than parishes with a declining number of clergy.

2 Rural classifications by parish

Previous work had considered how urban or rural an area was at the level of the diocese. While deployment decisions may be made at that level, it is the rurality of the individual parish which may be more likely to affect church growth in that area. This section looks at the effect of the rurality of the parish in two different ways:

1. The “Stronger as One?” report used a measure of rurality based on access to services that is part of the Index of Multiple Deprivation. For continuity with that report, the effect of this measure at a parish level was considered. Full details are given in Appendix I.
2. Other parts of the Church make use of a UK Government classification and to be consistent with those, I have also analysed the parishes through this lens.

2.1 IMD classification

Stronger as One? dealt with rurality at a diocesan level by considering the “Geographic Barriers to Housing and Services” sub-domain of the Index of Multiple Deprivation as a measure of rurality.³ The dioceses with fewest geographic barriers to services were classified as “urban”, then “mostly-urban”, “urban-rural”, “rural” and “remote-rural” as the barriers increased. This section introduces the analysis when each parish, rather than each diocese, is individually classified. Table 1 and Figure 1 below show how the different diocesan categories have been distributed amongst the parish categories. We can see that the 927 parishes within “urban” dioceses have been classified across all the parish rural categories. Two thirds (633) fall within the “urban” type, while 55 parishes within “urban” dioceses have geographical barriers as high as “remote-rural” areas.

Table 1: IMD-based rural categories of parishes and dioceses

Diocese	Parish					TOTAL
	Urban	Mostly-urban	Urban - rural	Rural	Remote-rural	
Urban	633	124	71	44	55	927
Mostly-urban	514	305	184	142	495	1640
Urban - rural	535	440	316	294	1655	3240
Rural	291	282	262	258	2562	3655
Remote-rural	130	124	110	140	2371	2875
TOTAL	2103	1275	943	878	7138	12337

We can also see that the numbers of “urban” and “remote-rural” parishes are over twice as big as the number of parishes classed as such using the diocesan category (e.g. 2103 “urban” parishes compared with 927 parishes in “urban” dioceses). Indeed “remote-rural” parishes make up 58% of all parishes. Conversely, the numbers of “mostly-urban”, “urban-rural” and “rural” parishes are much smaller than the diocesan categories.

³ *Stronger as One*, p9ff.

Figure 1 illustrates the same data; while the average parish figure increases with each category, there is considerable variation within dioceses, with some parishes in the most urban categories still experiencing large geographical barriers to services, and some parishes in dioceses described as “remote-rural” (category 5) having low barriers to services.

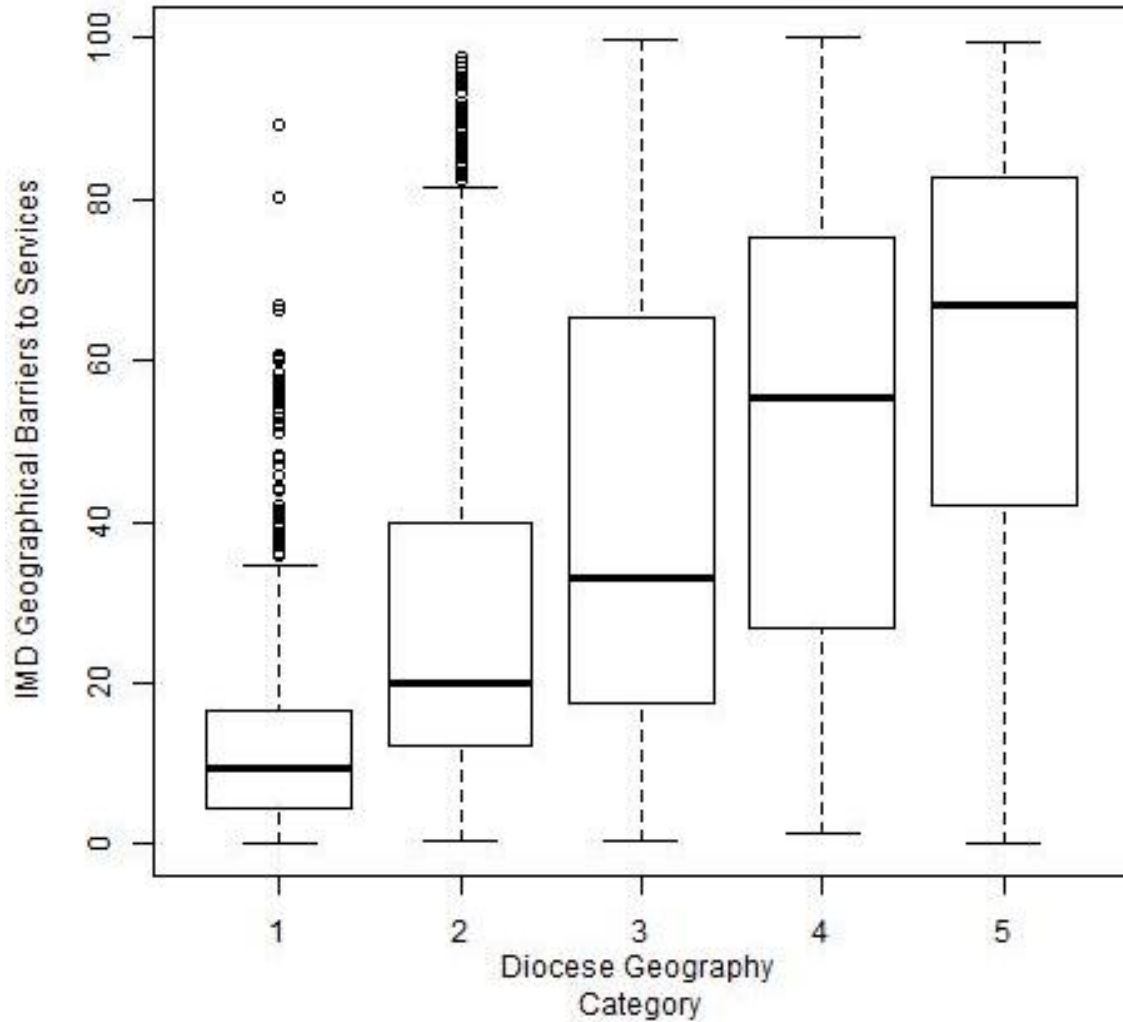


Figure 1: Parish IMD Geographical Access against Diocesan category (1 - urban, ..., 5 - remote rural)

Figure 2, below, shows the structure of the benefices, in terms of the number of churches within the benefice, in each parish geography category. It is similar in many ways to the diocesan figures illustrated in Figure 4 in the earlier *Stronger as One* report.⁴ The main difference is in the “rural” category, where “rural” parishes are much more similar to more “urban” ones, with a higher percentage of smaller structures, and thus a lower percentage of larger amalgamations, particularly of MCU(4-6) structures in comparison with the diocesan classification.

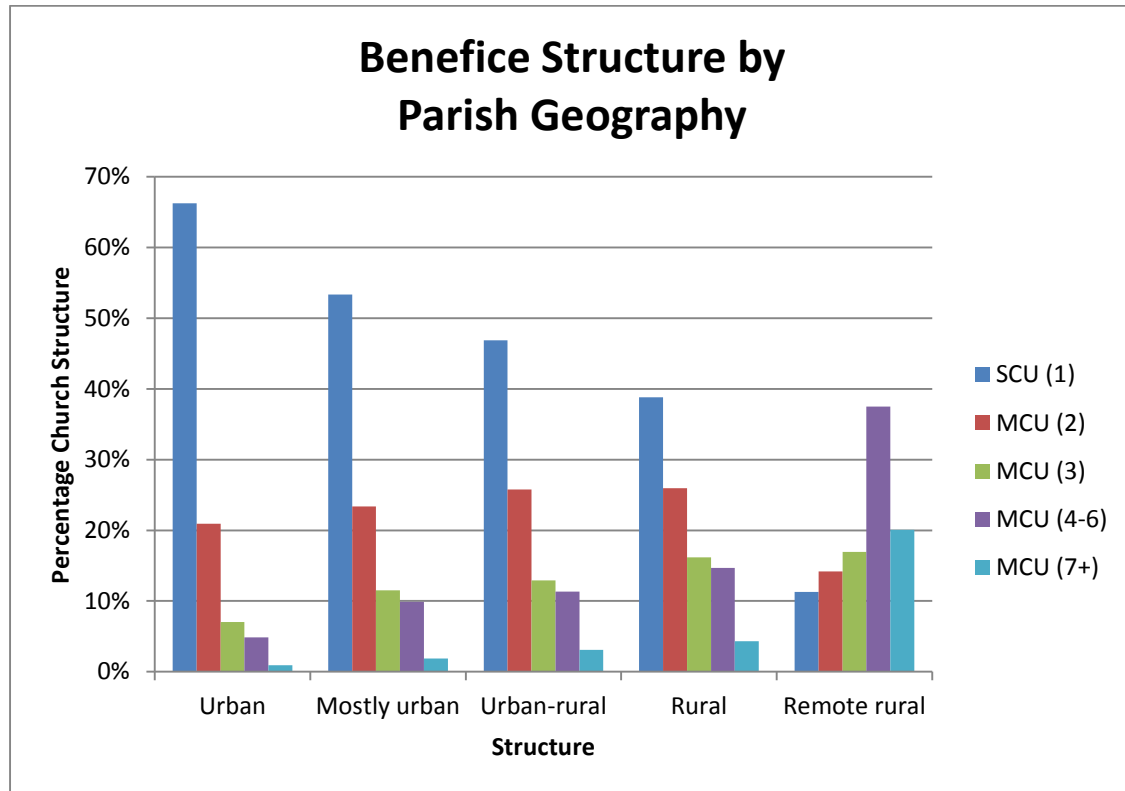


Figure 2: Benefice structure by parish geography

2.1.1 Analysis of Standardised Attendance

The analysis of the standardised attendance data for parishes partitioned in this way is detailed in Appendix I. We find that the more rural areas are associated with less decline, and with data over 10 years, 2001-2011, larger amalgamations also demonstrate less decline.

⁴ *Stronger as One*, p13

2.2 DEFRA classification

The UK Government Department for Environment, Food and Rural Affairs (DEFRA) produces a set of rural-urban classifications which can also be used to structure the data.⁵ Census Output Areas are split into *urban* or *rural* categories, then into whether their context is *sparse* or not. An area is classified as *rural* if it lies outwith a settlement with more than 10,000 people. If the wider area is remotely populated, the context is described as *sparse*. The rural data is further split into *town and fringe*, *villages*, and *hamlets and isolated dwellings*, at both *sparse* and *not sparse* levels. The urban areas are split into *major conurbation*, *minor conurbation* and *city and town*. There is also a *city and town in a sparse setting* classification. I am grateful to the Research and Statistics Unit for providing the parish-level DEFRA rural-urban classifications.

Table 2 below details the number of parishes in each classification, partitioned by benefice structure. We can see that around one parish in three is in the one of the most rural classifications, *rural hamlets and isolated dwellings* (3,758 out of 11,810 parishes for which we have data). One parish in four is in a *rural village*, and one parish in five is in an *urban city and town* (2,742 and 2,372 respectively).

Table 2: DEFRA classification of parishes by benefice structure

	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Urban major conurbation	1,144	297	123	77	4	1,645
Urban minor conurbation	133	41	9	3		186
Urban city and town	1,286	612	237	200	37	2,372
Urban city and town in a sparse setting	3	3	1	1	1	9
Rural town and fringe	130	123	105	93	40	491
Rural town & fringe in a sparse setting	4	4		5	2	15
Rural village	207	347	493	1,134	561	2,742
Rural village in a sparse setting	9	12	21	67	57	166
Rural hamlets and isolated dwellings	509	609	662	1,325	653	3,758
Rural hamlets and isolated dwellings in a sparse setting	34	32	56	153	151	426
Total	3,459	2,080	1,707	3,058	1,506	11,810

There are few parishes which fall into the *sparse* categories (e.g. 15 in *rural town and fringe in a sparse setting*), so I have amalgamated the *sparse* and *not sparse* settings at each point. There are also few parishes in the *urban minor conurbation* category (186), so I have amalgamated that with the *urban major conurbation* category to form a single *urban conurbation* entry.

⁵ <https://www.gov.uk/government/collections/rural-urban-definition>; accessed 15 Sept 2014.

Table 3 below shows the number of parishes falling into each new classification, along with their benefice structure; Tables 4 and 5 give the percentage equivalents by row and by column.

Table 3: Amalgamated DEFRA classification of parishes by benefice structure

	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	TOTAL
Urban conurbation	1,277	338	132	80	4	1,831
Urban city and town	1,289	615	238	201	38	2,381
Rural town and fringe	134	127	105	98	42	506
Rural village	216	359	514	1,201	618	2,908
Rural hamlets and isolated dwellings	543	641	718	1,478	804	4,184
TOTAL	3,459	2,080	1,707	3,058	1,506	11,810

Table 4: Amalgamated DEFRA rural urban classification of parishes, percentages by structure.

	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	TOTAL
Urban conurbation	70%	18%	7%	4%	0%	100%
Urban city and town	54%	26%	10%	8%	2%	100%
Rural town and fringe	26%	25%	21%	19%	8%	100%
Rural village	7%	12%	18%	41%	21%	100%
Rural hamlets and isolated dwellings	13%	15%	17%	35%	19%	100%

Table 5: Amalgamated DEFRA rural urban classifications of parishes, percentages by DEFRA area type.

	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	TOTAL
Urban conurbation	37%	16%	8%	3%	0%	16%
Urban city and town	37%	30%	14%	7%	3%	20%
Rural town and fringe	4%	6%	6%	3%	3%	4%
Rural village	6%	17%	30%	39%	41%	25%
Rural hamlets and isolated dwellings	16%	31%	42%	48%	53%	35%
TOTAL	100%	100%	100%	100%	100%	100%

Figure 3 illustrates the benefice structures at each DEFRA classification. We can see that in *urban conurbation* areas, 70% of parishes are in single church, SCU(1), benefices, while in *rural villages*, the figure falls to 7%. *Urban* areas, as well as *rural town and fringe* areas, have more benefices with a single church, SCU(1), with a falling percentage of larger benefice structures, while *rural villages* and *rural hamlets and isolated dwellings* have higher percentages of larger benefice structures. In the two most *rural* areas the most common benefice structure is that of between 4 and 6 churches, MCU(4-6).

It is broadly similar to Figure 2 based on the IMD Geographical barriers classification. In general, this DEFRA classification allows for more detail in rural areas, splitting the previous “remote-rural” classification, and amalgamating some of the “urban” ones.⁶

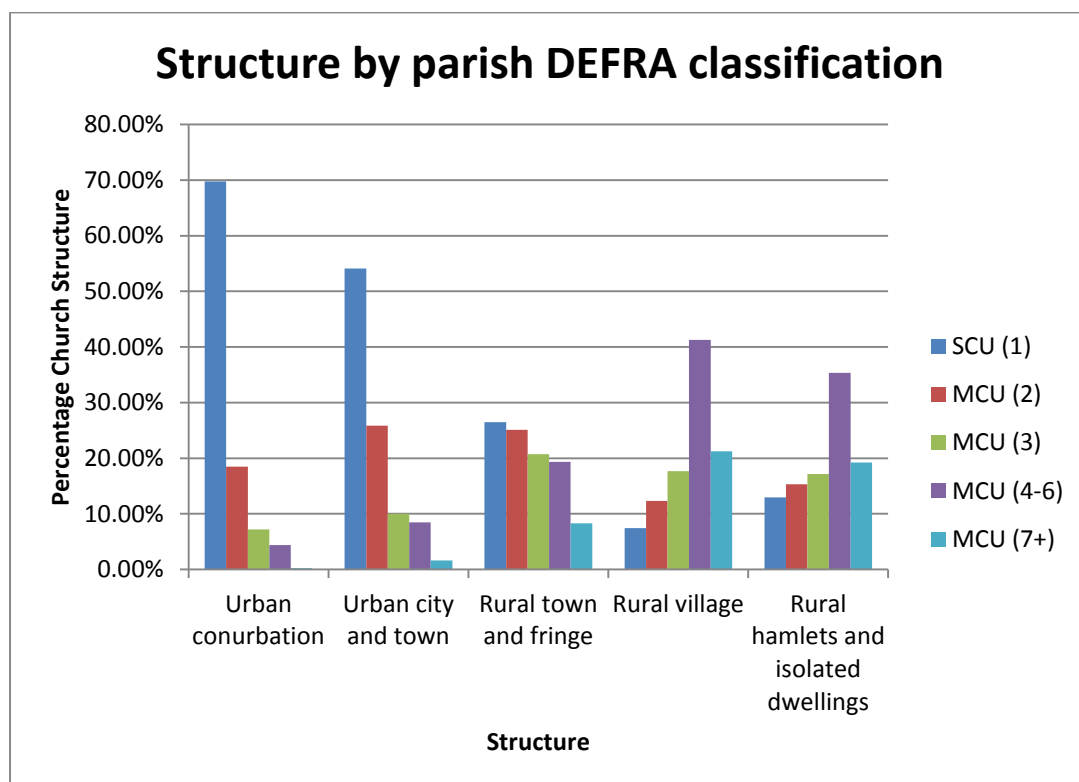


Figure 3: Parish benefice structure by DEFRA classification

⁶ The main differences are in the *rural town and fringe* and *rural village* classes. Here, the *rural town and fringe* classification has far fewer SCU(1) churches in comparison with the central “Urban-rural” IMD class. The *rural village* category here, in contrast with the “Rural” category from the IMD classification, is similar in structure to the *rural hamlets and isolated dwellings*, with many MCU(4-6) parishes. These both reflect the “Remote-rural” IMD class.

2.2.1 Analysis of Standardised Attendance

Voas and Watt developed a measure of standardised attendance which uses four measures of attendance and is scaled to reduce the dependence on the size of the congregation.⁷ The measures used are Adult usual Sunday attendance (Adult uSa), Child average Sunday attendance (Child uSa), All-age Average attendance (AWA) and All-age Easter attendance. Full details of the methods used to calculate the standardised attendance are given in Voas and Watt's report.⁸ To ensure comparability with both the Voas and Watt, and Goodhew reports, as well as the further work by Tweedie, we consider here both 10 and 5 year time periods, using data at 2001-2011 and 2006-2011.

Table 6 shows the percentages of parishes in each DEFRA classification and benefice structure that were growing, stable or declining between 2001 and 2011. Each cell shows the percentage of parishes in that structure/parish classification that is a) growing, b) remaining stable, c) declining, e.g. 14% of SCU(1) churches in *urban conurbation* areas are growing, while 20% are declining. We can see that around 10% of the parishes are growing, with more *urban conurbation* and *rural village* parishes seeing growth, and fewer *rural town and fringe* parishes.

Table 6: 10 year data, %s of each DEFRA/structure combination classified as growth, stability or decline

10-year changes	GROWTH				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban conurbation	14%	15%	21%	14%	50%
Urban city and town	11%	10%	7%	9%	21%
Rural town and fringe	9%	8%	10%	7%	12%
Rural village	13%	12%	12%	12%	14%
Rural hamlets and isolated dwellings	11%	11%	12%	14%	14%
	STABILITY				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban conurbation	66%	61%	57%	59%	50%
Urban city and town	66%	63%	70%	62%	55%
Rural town and fringe	67%	65%	78%	66%	69%
Rural village	73%	73%	74%	74%	74%
Rural hamlets and isolated dwellings	73%	71%	71%	71%	71%
	DECLINE				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban conurbation	20%	24%	22%	28%	0%
Urban city and town	23%	27%	23%	29%	24%
Rural town and fringe	24%	27%	12%	27%	19%
Rural village	14%	15%	14%	14%	12%
Rural hamlets and isolated dwellings	16%	19%	17%	16%	15%

⁷ Voas and Watt, p5-6.

⁸ Voas and Watt, Appendix 2, pp73-81.

Table 7 replicates this for the data from 2006 to 2011. In general, around 8% of parishes have grown in this period, while around 14% have declined. The figures are similar across all DEFRA classifications and benefice structures in each group.

Table 7: 5 year data, % of each DEFRA/structure combination classified as growth, stability or decline

5-year changes	GROWTH				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban conurbation	9%	9%	9%	11%	0%
Urban city and town	7%	8%	9%	11%	11%
Rural town and fringe	5%	7%	9%	11%	10%
Rural village	10%	9%	8%	8%	10%
Rural hamlets and isolated dwellings	9%	6%	8%	8%	8%
	STABILITY				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban conurbation	75%	75%	78%	69%	75%
Urban city and town	79%	77%	75%	70%	76%
Rural town and fringe	84%	77%	77%	74%	81%
Rural village	79%	77%	78%	77%	79%
Rural hamlets and isolated dwellings	80%	79%	80%	79%	79%
	DECLINE				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban conurbation	16%	15%	13%	20%	25%
Urban city and town	14%	15%	16%	19%	13%
Rural town and fringe	11%	16%	14%	14%	10%
Rural village	11%	13%	14%	14%	11%
Rural hamlets and isolated dwellings	12%	15%	12%	13%	14%

Figures 4 and 5 overleaf show the average standardised attendance for each combination of benefice structure and DEFRA rating. The first figure shows the 10-year data where we can see that there are small declines across almost all the benefice structures and area types, with the exception of MCU(3) benefices in *urban conurbations* where there is very small average growth.⁹ *Rural village* churches have least change while *urban city and town* and *rural town and fringe* have most. With the 5-year data (Figure 5), almost all of the categories have an average change in standardised attendance of around -0.2. We should note here that a parish is considered to be “declining” if the change is less than -1, so a change of -0.2 is not large.

⁹ The average standardised attendance in urban conurbation MCU(7+) churches was 0.61 across 10 years, and -0.42 across 5 years. However, there are only four churches in this category, so it cannot be taken as representative of large amalgamations and has been omitted from this analysis.

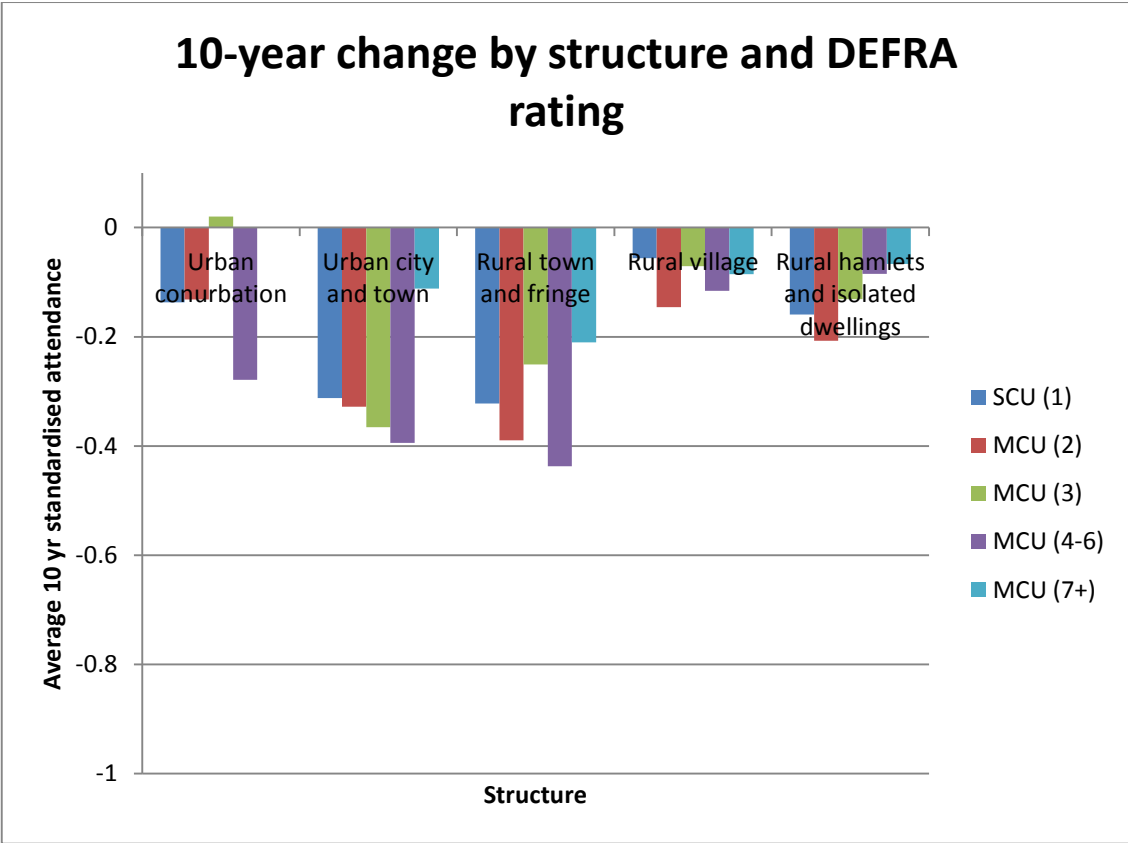


Figure 4: 10 year change in average standardised attendance by parish DEFRA rating

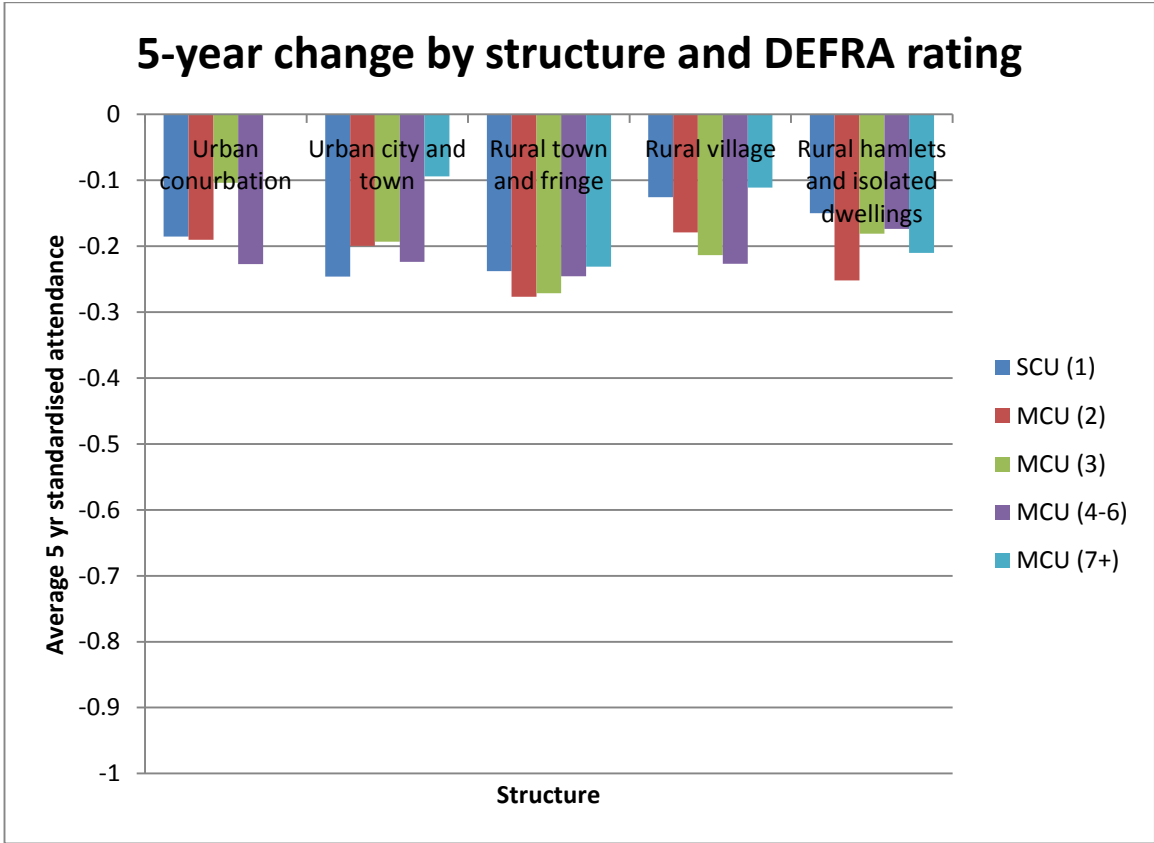


Figure 5: 5-year change in average standardised attendance by parish DEFRA rating.

2.2.2 Statistical Analysis

Linear modelling is used to investigate the effect of rurality on church growth. The standardised attendance score across 10 years is used as the response variable while the DEFRA rating and benefice structure are introduced as explanatory variables.

Analysis of the variation in the model shows that rurality is an extremely significant factor ($p < 2 \times 10^{-16}$, where a factor is considered significant at $p < 0.05$) while benefice structure ($p = 0.26$) and their interaction ($p = 0.53$) are not. The percentage of variation in the attendance data explained by these variables is 1%. Removing the benefice structure factor gives a model with 0.75% of variation explained and rurality as a factor is significant at $p < 2.2 \times 10^{-16}$. The percentage of variation explained is very small indeed, but this is an indication of the huge amount of variability in this large data set.

Inspection of the data shows that parishes in *urban city and town* and *rural town and fringe* areas show significantly greater decline than parishes in other areas at the ten year stage. Parishes in these areas have seen an average change in standardised attendance of -0.33 (*urban city and town*) and -0.34 (*rural town and fringe*) while *urban conurbation* parishes have fallen on average by 0.13, *rural villages* by 0.08, and *rural hamlets* by 0.12.

The analysis is repeated with data at 5 years, from 2006 to 2011. Here none of the factors are significant (rurality: $p = 0.31$; benefice structure: $p = 0.76$; interaction: $p = 0.62$).

2.3 Conclusion

We conclude that the rurality of a parish area, as described by both the IMD and the DEFRA rating, does affect the standardised attendance scores across 10 years. We will therefore include this factor in subsequent analyses in this report. For ease of comparison with other work carried out by the Church of England, we will proceed with the DEFRA ratings rather than those derived from the IMD.

3 Population change

While there is no requirement that people attend their parish church, house-building or conversely depopulation of an area might be expected to have an impact on church attendance. We can look at this effect using population data from the Census for each parish in 2001 and 2011. I am most grateful to the Research and Statistics Unit for providing this information.

On inspection, it transpires that considerable parish adjustments have taken place over this period. In addition, changes in data collection and calculation methods have allowed estimates to be produced for smaller parishes in 2011 than were available in 2001. In this analysis, I have excluded parishes for which there is incomplete data and also trimmed the data, removing the most extreme data points at either end to exclude major parish alterations. Trimming the data removes a given percentage of major changes and allows us to look in more detail at the more usual population changes. Here 5% at either extreme of the data was removed, leaving the central 90%. The analysis was also carried out with the central 80% and 70% of the data for checking purposes.

Figure 6 plots 5 and 10-year standardised attendance change against numerical and percentage change in Census population. The lines indicate the position of no change on each axis. Figure 6 indicates that there does not appear to be a large effect of population change between 2001 and 2011 and standardised attendance change. There are many growing churches in parishes with falling populations (found in the top left quadrant of the plots), and vice versa (in the bottom right quadrant).

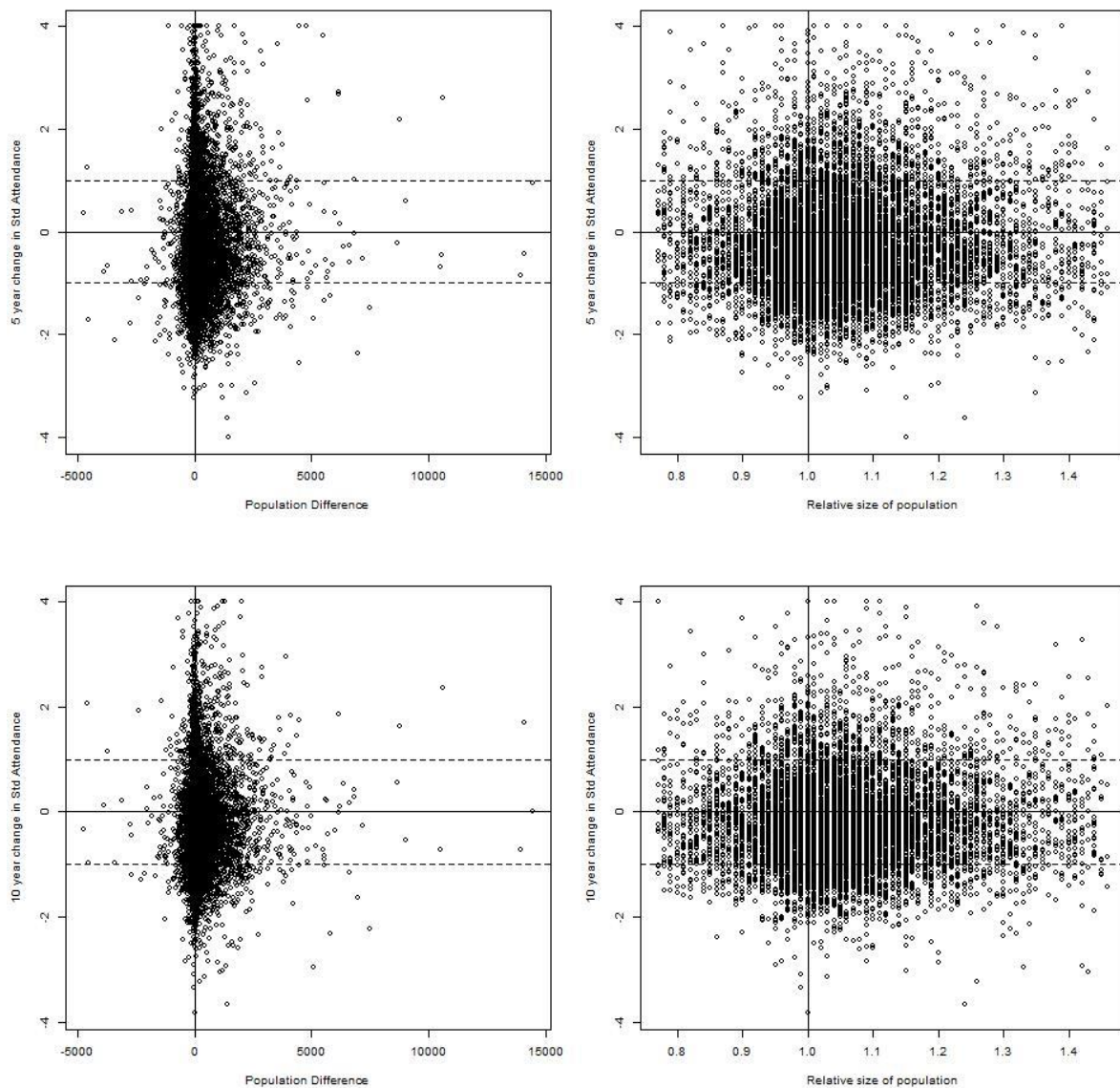


Figure 6: Population change 2001-2011, central 90% of data

Tables 8 and 9 show the percentage of churches in each DEFRA classification and quintile of population change that are growing, stable, or declining for 10 year and 5 year data respectively. A quintile is a fifth, or 20%, of the data. Here Q1 is the lowest and Q5 the highest 20% of the standardised attendance change. The first quartile, Q1, ranges from a decrease of 24% to 3%, Q2 ranges from a decrease of 3% to an increase of 2%, Q3 from 2% to 7% increase, Q4 from 7% to 15% and Q5 from 15% to an increase of 46%.

If population change were to have an effect on standardised attendance, we would expect to see a higher percentage of churches in Q5 than Q1 to be showing growth, and conversely a higher percentage of churches in Q1 than Q5 to be showing decline. Tables 8 and 9 indicate that this may be the case, particularly in *urban* areas, but the effect appears less pronounced in *rural* ones. Note that in the statistical analysis we use the actual figures rather than the quintile groups that are tabulated here. The quintile groups are only used for display purposes.

Table 8: 10 year data, %s of each parish population growth quintile/DEFRA combination classified as growth, stability or decline

10-year changes	GROWTH				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	10.1%	10.8%	12.9%	14.8%	17.3%
Urban city and town	7.1%	8.5%	8.1%	11.2%	13.0%
Rural town and fringe	6.1%	8.5%	2.8%	8.9%	16.2%
Rural village	11.7%	10.9%	11.3%	13.0%	14.1%
Rural hamlets and isolated dwellings	13.3%	9.8%	10.3%	11.9%	11.8%
	STABILITY				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	61.8%	65.6%	65.6%	60.4%	65.4%
Urban city and town	65.5%	61.1%	68.0%	65.5%	62.6%
Rural town and fringe	71.2%	68.5%	68.9%	70.3%	67.6%
Rural village	74.9%	73.3%	72.5%	72.6%	71.5%
Rural hamlets and isolated dwellings	68.9%	71.2%	70.9%	68.2%	72.0%
	DECLINE				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	28.1%	23.6%	21.5%	24.9%	17.3%
Urban city and town	27.4%	30.3%	23.9%	23.4%	24.4%
Rural town and fringe	22.7%	23.1%	28.3%	20.8%	16.2%
Rural village	13.4%	15.8%	16.3%	14.4%	14.3%
Rural hamlets and isolated dwellings	17.8%	19.0%	18.8%	19.9%	16.1%

Table 9: 5 year data, %s of each parish population growth quintile/DEFRA combination classified as growth, stability or decline

5-year changes	GROWTH				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	7.0%	9.2%	7.6%	9.3%	11.0%
Urban city and town	8.1%	6.6%	5.5%	7.7%	11.4%
Rural town and fringe	3.0%	6.2%	8.5%	9.9%	6.8%
Rural village	8.1%	8.3%	7.1%	8.8%	8.6%
Rural hamlets and isolated dwellings	6.4%	8.8%	7.7%	5.9%	8.0%
	STABILITY				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	76.9%	75.4%	74.2%	74.1%	75.3%
Urban city and town	75.8%	75.6%	80.6%	75.8%	75.6%
Rural town and fringe	78.8%	78.5%	76.4%	80.2%	83.8%
Rural village	79.5%	76.8%	81.9%	77.0%	76.8%
Rural hamlets and isolated dwellings	80.9%	76.3%	78.3%	78.8%	78.8%
	DECLINE				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	16.1%	15.4%	18.2%	16.6%	13.7%
Urban city and town	16.1%	17.8%	13.9%	16.5%	13.0%
Rural town and fringe	18.2%	15.4%	15.1%	9.9%	9.5%
Rural village	12.4%	14.9%	11.0%	14.2%	14.6%
Rural hamlets and isolated dwellings	12.7%	14.9%	14.1%	15.3%	13.2%

3.1 Statistical modelling

The population change may be included in the linear model that we have established so far, with the DEFRA rural classifications. When the standardised attendance change is modelled using the central 90% of the data, we find that population change (whether numerical or percentage) and DEFRA geography, and their interaction, are all significant with both 5 year and 10 year data.¹⁰ There is no statistical effect of benefice structure in addition to these factors.

Areas with larger increases in population between 2001 and 2011 see higher average standardised growth, and conversely parishes with a decline in population see lower average standardised growth. This effect is less pronounced in more rural areas.

For completeness, the analysis was also carried out with the central 80% and 70% of the data.

Using the central 80% of the data, we find that there is a significant interaction between percentage population change and geography. Population change has less effect on attendance change in more rural areas.¹¹ Controlling for population change and geography, and introducing the benefice structures, shows no significant differences between benefice structures ($p=0.48$ at 10 years, $p=0.39$ at 5 years).

Using only the central 70% of the population change data, the 10-year data shows no significant effects of any factors.¹² At the 5-year level, there are significant effects of geography and percentage population change, but not their interaction.¹³

3.2 Conclusions

It is clear that the change in population in an area has a significant effect on the standardised church growth value. It will be important to keep this factor in our models, along with the DEFRA rurality rating and the interaction of these factors. To include as much of the data as possible, we will use the 90% trimmed percentage population change data in the rest of the report.

¹⁰ At the 10-year stage, % population change $p=0.0032$; DEFRA $p=0.30$; interaction $p=0.017$; $R^2=0.28\%$; 5 years, %population change $p=2.1*10^{-4}$; DEFRA $p=1.0*10^{-14}$; interaction $p=3.2*10^{-7}$; $R^2=1.2\%$.

¹¹ At the 10-year stage, %population change $p=0.0042$; DEFRA $p=0.097$; interaction $p=0.042$; $R^2=0.51\%$; 5 years %population change $p=1.2*10^{-5}$; DEFRA $p=2.2*10^{-13}$; interaction $p=0.010$; $R^2=1.4\%$.

¹² %population change $p=0.074$; DEFRA $p=0.12$; interaction $p=0.35$; $R^2=0.40\%$.

¹³ %population change $p=1.4*10^{-4}$; DEFRA $p=6.8*10^{-12}$; interaction $p=0.072$; $R^2=1.4\%$.

4 Size of congregation

The final “inevitable” factor that we consider is that of the size of the congregation. When added to our model so far, we hope that it will combine with rurality and population change to allow us to control for those issues and examine factors around clergy deployment in greater detail.

While both of the original Strand 3 reports considered size, neither of them used it within their models: Voas and Watt standardised the data in an attempt to remove the effect of size, while Goodhew et al. stratified the data into five size groupings and analysed each individually.¹⁴ Neither report was able to take into account the rurality or population change within the parish.

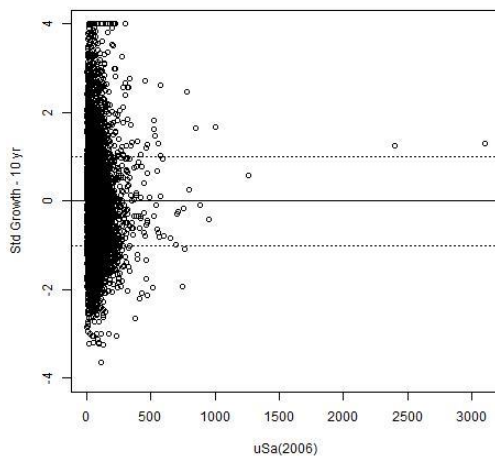


Figure 7: Size v Standardised growth

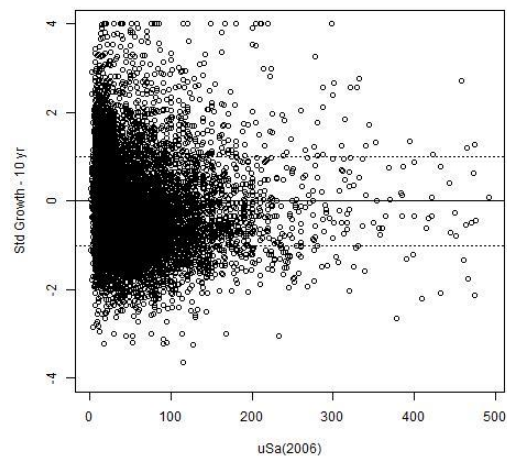


Figure 8: Size v standardised growth, uSa <500

Figures 7 and 8 show scatter-plots of the 10-year standardised growth against the usual Sunday Attendance (uSa) figure for 2006, the mid-point of the standardised data. The solid horizontal line is at 0, indicating no change, while dotted lines at 1 and -1 indicate the levels beyond which a congregation is classified as “growing” or “declining”. Figure 6 shows the detail in congregations with usual Sunday attendance less than 500 in 2006. The thousands of data points in these plots do not make patterns easy to observe.

¹⁴ Voas and Watt, p5; Goodhew et al, p83ff.

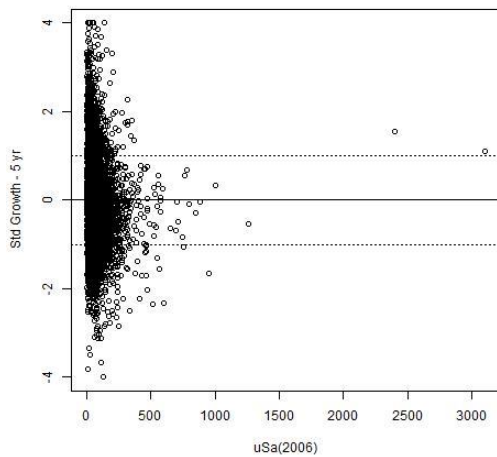


Figure 9: Size v Standardised growth

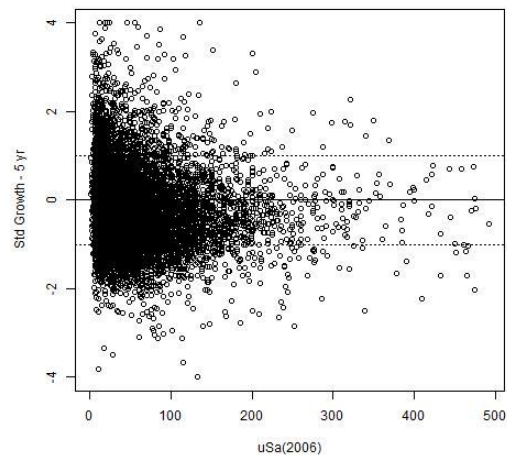


Figure 10: Size v standardised growth, uSa <500

Figures 9 and 10 show scatter-plots of the 5-year standardised growth against the usual Sunday Attendance (uSa) figure for 2006. The dotted indicator lines show where a congregation is classified as “growing” (above 1) or “declining” (below -1), the solid line is at 0. Figure 10 shows the detail in congregations with usual Sunday attendance less than 500 in 2006.

Tables 10 and 11 below show the percentage of each congregation size quintile and DEFRA classification combination that is growing, stable or declining. Note that these tables cannot illustrate the additional effect of population change which is part of the statistical model. In addition, the quintile groups are only used here for display purposes; the actual figures are used in the statistical analysis. Here, the first quintile goes from a uSa of 1 to 16, Q2 ranges from 16 to 30, Q3 to 55, Q4 to 91, and Q5 from 91, up to 3,100.

Table 10: 10 year data, % of each congregation size quintile/DEFRA combination classified as growth, stability or decline

10-year changes	GROWTH				
	Q1	Q2	Q3	Q4	Q5
Urban conurbation	33.3%	13.0%	13.8%	11.7%	16.5%
Urban city and town	13.3%	15.5%	7.6%	9.8%	9.8%
Rural town and fringe	15.4%	6.0%	8.1%	6.3%	8.0%
Rural village	14.9%	12.8%	9.2%	5.7%	10.3%
Rural hamlets and isolated dwellings	13.7%	11.8%	9.7%	10.4%	8.9%
	STABILITY				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	33.3%	59.8%	62.5%	63.3%	65.0%
Urban city and town	66.7%	56.0%	64.5%	63.4%	66.6%
Rural town and fringe	61.5%	64.2%	68.3%	72.1%	72.0%
Rural village	73.9%	73.6%	70.2%	71.5%	67.6%
Rural hamlets and isolated dwellings	70.3%	72.6%	67.3%	67.8%	67.3%

	DECLINE				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	33.3%	27.2%	23.6%	25.0%	18.6%
Urban city and town	20.0%	28.4%	27.9%	26.8%	23.6%
Rural town and fringe	23.1%	29.9%	23.6%	21.6%	20.0%
Rural village	11.2%	13.6%	20.6%	22.8%	22.1%
Rural hamlets and isolated dwellings	16.0%	15.6%	23.0%	21.8%	23.7%

Table 11: 5 year data, %s of each congregation size quintile/DEFRA combination classified as growth, stability or decline

5-year changes	GROWTH				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	16.7%	17.4%	11.2%	6.8%	6.3%
Urban city and town	13.3%	15.5%	10.6%	6.7%	6.3%
Rural town and fringe	15.4%	13.4%	4.9%	6.3%	4.0%
Rural village	12.5%	6.6%	5.1%	3.3%	2.9%
Rural hamlets and isolated dwellings	9.6%	7.7%	4.5%	5.8%	3.9%
	STABILITY				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	66.7%	77.2%	73.5%	74.2%	75.8%
Urban city and town	66.7%	69.8%	74.3%	75.4%	76.6%
Rural town and fringe	76.9%	65.7%	82.9%	75.7%	82.7%
Rural village	76.5%	78.9%	72.8%	69.9%	69.1%
Rural hamlets and isolated dwellings	80.1%	78.9%	74.3%	74.1%	77.0%
	DECLINE				
Parish Geography	Q1	Q2	Q3	Q4	Q5
Urban conurbation	16.7%	5.4%	15.3%	19.1%	18.0%
Urban city and town	20.0%	14.7%	15.2%	17.9%	17.0%
Rural town and fringe	7.7%	20.9%	12.2%	18.0%	13.3%
Rural village	11.0%	14.5%	22.1%	26.8%	27.9%
Rural hamlets and isolated dwellings	10.3%	13.4%	21.2%	20.1%	19.1%

4.1 Statistical modelling

We now add congregation size to the linear model that we have developed to this point, taking into account the location of the parish and the population change.

We find that there are statistically significant effects of size, but that the effect of congregation size differs depending on the rurality of the area, that is to say there is an interaction between size and rurality. This applies at both 10 year and 5 year intervals.¹⁵ In urban areas, larger congregations are more likely to grow, while in rural areas it is smaller congregations that see more growth. This is difficult to see in the tables above as they are unable to take into account the population change which is also part of the model.

There is no significant effect of the number of churches within the benefice, in addition to size, location, and population change.

4.2 Conclusions

We can see that size of congregation is also an important factor in analysing standardised attendance church growth although the effects are different in different parish locations. It will continue to be included in the analysis as we proceed to consider clergy deployment.

¹⁵ At the 10-year stage, % population change $p=3.5*10^{-5}$; DEFRA $p=2.7*10^{-12}$; interaction $p=2.7*10^{-7}$; uSa 2006 $p=0.022$; DEFRA-uSa interaction $p=6.4*10^{-6}$; $R^2=1.8\%$; 5 years, % population change $p=9.8*10^{-4}$; DEFRA $p=0.46$; interaction $p=0.011$; uSa 2006 $p=2.6*10^{-6}$; DEFRA-uSa interaction $p=6.6*10^{-15}$; $R^2=1.5\%$.

5 Clergy deployment

Having considered a number of factors that are fixed with respect to a parish, location, size and population change, we can now control for these factors and look in more detail at the effects of clergy deployment. In our statistical analysis we shall add clergy factors into the model already developed in earlier sections.

For the purposes of this study, data is available on clergy deployment to benefices from 2005 to 2011. This data is only available at the benefice level, so we are unable to consider the exact deployment of clergy amongst parishes in a benefice. While we know that clergy are deployed differently across parishes, in order to handle the large amount of data with the resources available and allow for benefices of different sizes, we have made the assumption of assignment of clergy evenly across all the churches. We have considered the number of clergy per church in the benefice in a number of ways:

- Stipendiary clergy,
- Self-supporting clergy, including OLMs, and
- All clergy.

The data are then examined by:

- the number of clergy per church serving in the benefice in 2011, and
- the total number of clergy-years between 2005 and 2011.

Clergy per church in 2011

Table 12 and Figure 11 show the percentage of parishes in the DEFRA classification of areas which are served by different numbers of stipendiary clergy. A value of 0 indicates that there are no stipendiary clergy in the benefice in 2011. We can see that *urban* areas have their highest points with at least one stipendiary clergy per church (62% for *urban conurbations*; 46% for *urban city and town*; light blue in Figure 11). In contrast, the *rural* areas have their peak at between a fifth and a half (0.2<0.5) of a clergyperson (43% *rural towns*; 47% *rural villages*; 39% *rural hamlets*; green).

Table 12: The percentage of parishes with number of stipendiary clergy deployed in 2011 per church within the benefice, by DEFRA classification.

Parish Geography	0	0<0.2	0.2<0.5	0.5<1	1+
Urban conurbation	12%	0%	5%	20%	62%
Urban city and town	16%	1%	12%	25%	46%
Rural town and fringe	15%	5%	36%	23%	22%
Rural village	24%	19%	43%	9%	5%
Rural hamlets and isolated dwellings	21%	19%	37%	13%	9%

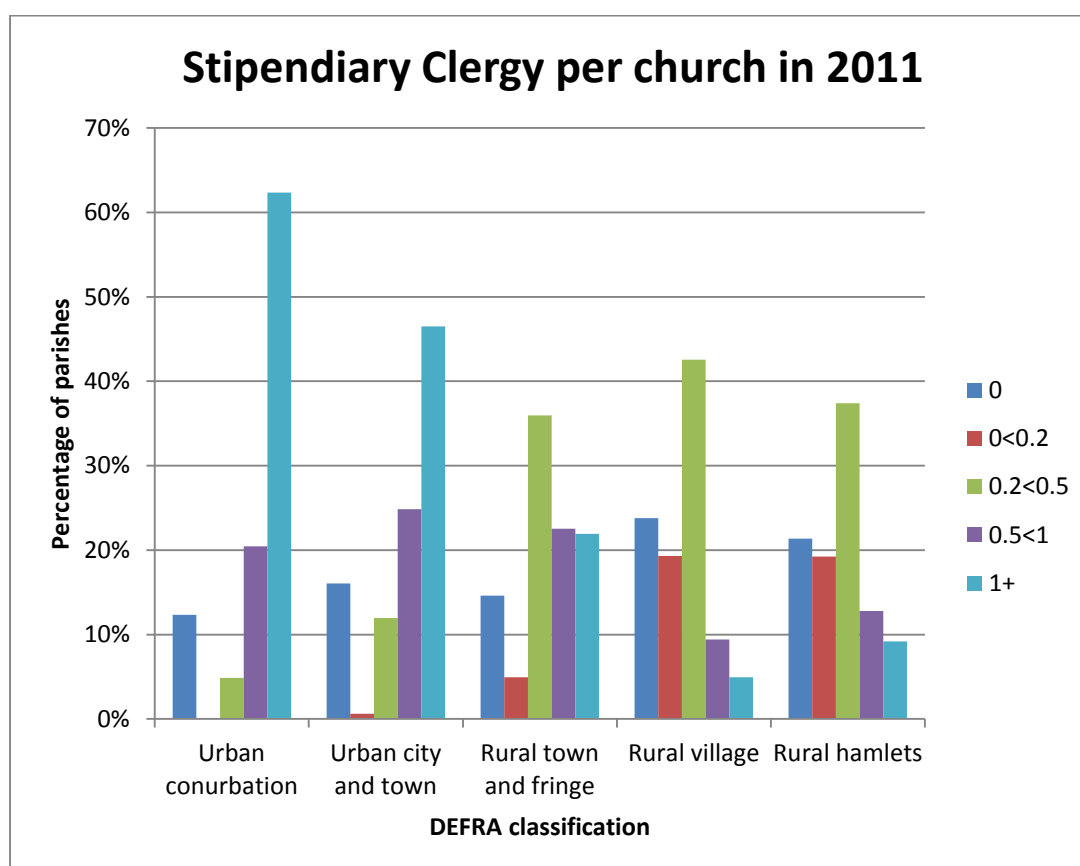


Figure 11: Stipendiary clergy per church in 2011

We now turn to non-stipendiary ministers, that is those who are self-supporting or ordained local ministers (referred to here as SSM). Information is not available on the hours provided by self-supporting clergy. While being fully aware that non-stipendiary clergy contribute a wide variety of amounts of time, in order to combine stipendiary and non-stipendiary clergy in this section I have

assumed that a non-stipendiary clergyperson contributes around half of the time of their stipendiary colleague. The tables and graphs in this section are presented with those values, expressed in terms of full-time-equivalency. For example, one SSM post is said to contribute 0.5 of a clergy-person.

Table 13 and Figure 11 illustrate the number of parishes with SSM per church in 2011. The majority of churches in each area do not have any self-supporting ministers in 2011, but around one in five *urban* churches have at least one SSM (21% at 0.5+). In *rural* areas, however, if we consider churches who have at least some SSM clergy, the peak is at between 0.1 and 0.25 FTE of a SSM per church.

Table 13: The number of full-time equivalents self-supporting or OLM clergy deployed in 2011 per church within the benefice, by DEFRA classification.

Parish Geography	0	0<0.1	0.1<0.25	0.25<0.5	0.5+
Urban conurbation	68%	0%	4%	7%	21%
Urban city and town	64%	1%	6%	9%	19%
Rural town and fringe	67%	4%	13%	8%	8%
Rural village	62%	11%	20%	5%	2%
Rural hamlets and isolated dwellings	63%	10%	15%	6%	5%

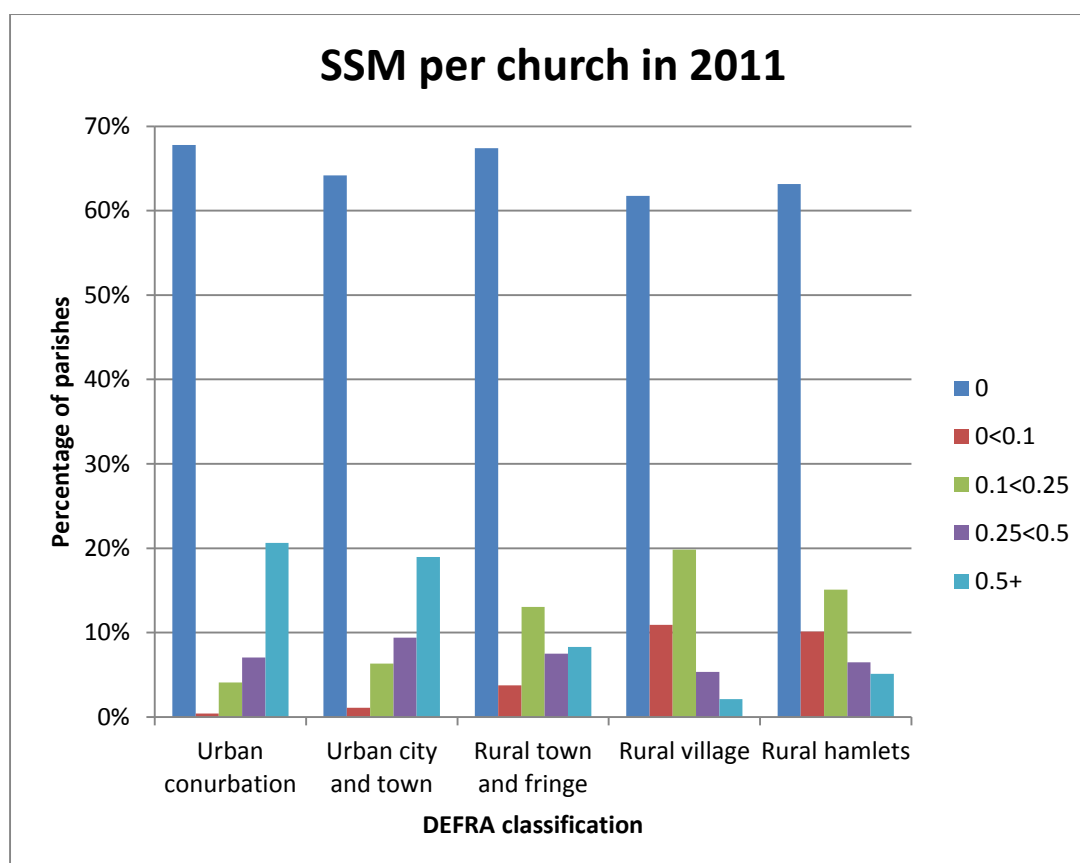


Figure 12: Self-supporting and Ordained Local Ministers per church within the benefice in 2011

We now present the figures of combined stipendiary and self-supporting clergy, expressed in FTE terms in Table 14 and Figure 13. The patterns are very similar to those in Table 12 and Figure 11 above but the numbers of clergy have risen when compared to stipendiary clergy only. We can see, however, that 10% of *urban conurbation* churches had no clergy in 2011, rising to 18% of parishes in *rural villages*. In general, the more rural an area, the fewer clergy are available to parishes, although *rural hamlets* are slightly better served than *rural villages*.

Table 14: The number of full-time equivalents self-supporting or OLM clergy deployed in 2011 per church within the benefice, by DEFRA classification.

Parish Geography	0	0<0.2	0.2<0.5	0.5<1	1+
Urban conurbation	10%	0%	3%	23%	64%
Urban city and town	12%	1%	9%	29%	49%
Rural town and fringe	12%	4%	32%	28%	23%
Rural village	18%	16%	44%	16%	5%
Rural hamlets and isolated dwellings	17%	15%	39%	19%	11%

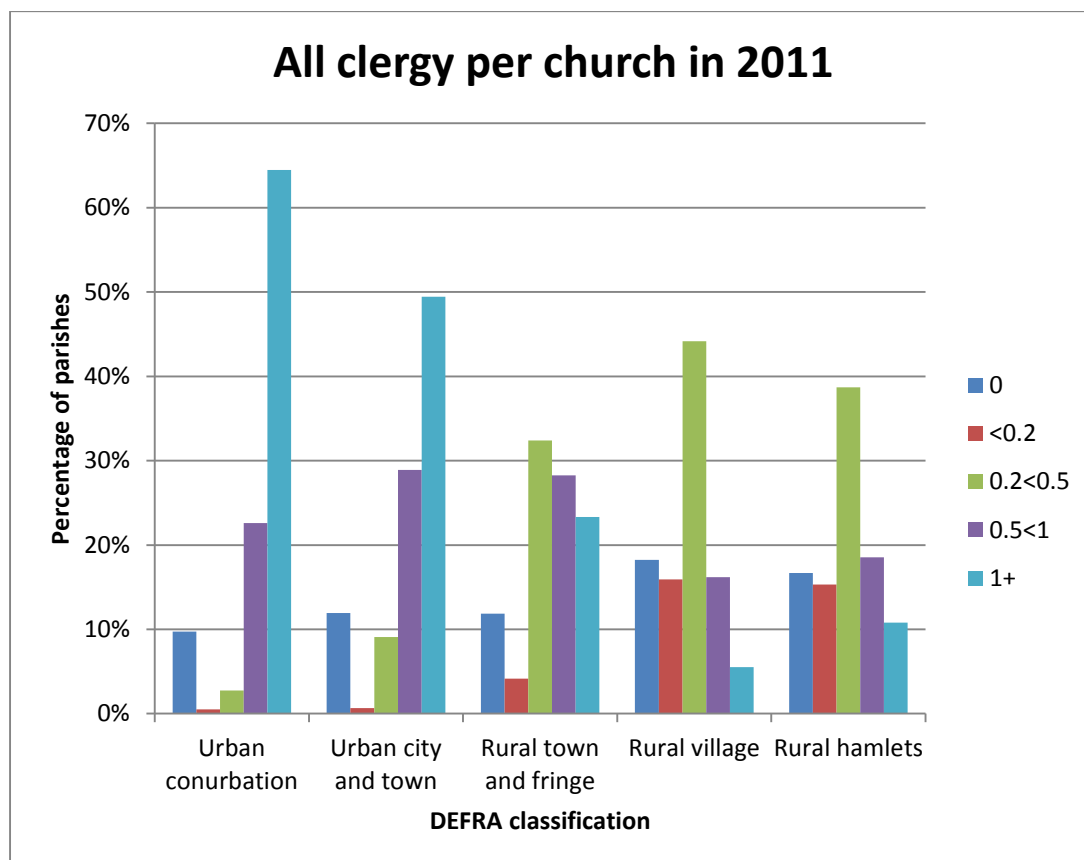


Figure 13: All clergy per church in 2011

Clergy-years per church in 2005-2011

Up to this point, these data concern only the picture in 2011, not over the whole period under consideration. To address this, we add up the number of clergy-years over the seven year period for which we have data. Taking stipendiary clergy, Table 15 and Figure 14 show the percentage of parishes at each geographical area with the number of clergy-years. We can see that 37% of parishes in *urban conurbations* have had at least one stipendiary clergy per year, while 6% of *rural hamlet* parishes have not had any stipendiary clergy in the benefice during this period. In *rural village* areas 90% of parishes have had less than half a clergy-person per year over this period (7%+40%+43%).

Table 15: Percentage of parishes with stipendiary clergy-years by DEFRA classification

Parish Geography	0	0<1.4	1.4<3.5	3.5<7	7+
Urban conurbation	1%	3%	15%	45%	37%
Urban city and town	2%	6%	24%	40%	28%
Rural town and fringe	3%	20%	44%	22%	12%
Rural village	7%	40%	43%	8%	2%
Rural hamlets and isolated dwellings	6%	37%	40%	12%	5%

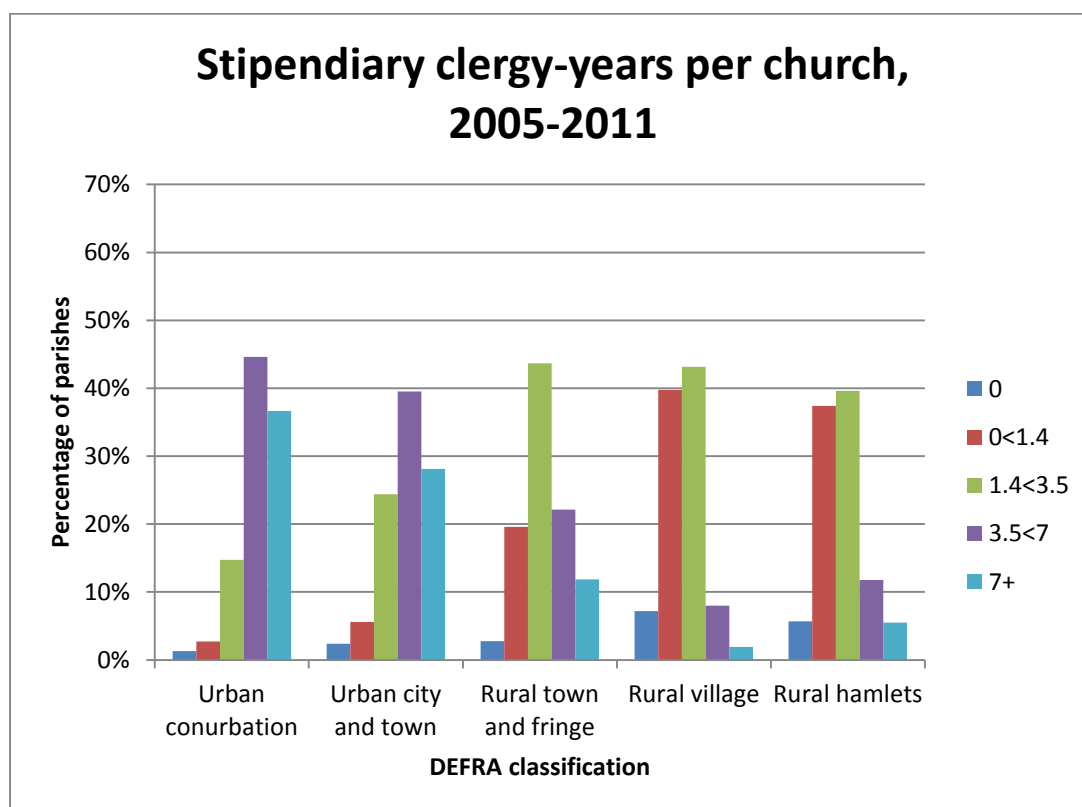


Figure 14: Stipendiary clergy-years per church

Table 16 and Figure 15 give the equivalent figures of self-supporting and ordained local ministers. We find that around half of parishes in all areas have had no such clergy in the whole time period (53% for *urban conurbations*; 46% for *rural town and fringe*). There are larger differences in the number of clergy-years per church when we look at the higher numbers; 10% of parishes in *urban conurbations* have at least 1 SSM per year, while only 1-3% of *rural* areas have the same resources.

Table 16: Self-supporting clergy-years per church in 2005-2011

Parish Geography	0	0<0.7	0.7<1.75	1.75<3.5	3.5+
Urban conurbation	53%	8%	16%	14%	10%
Urban city and town	50%	12%	17%	12%	9%
Rural town and fringe	46%	34%	15%	3%	1%
Rural village	50%	28%	15%	5%	2%
Rural hamlets and isolated dwellings	50%	24%	17%	5%	3%

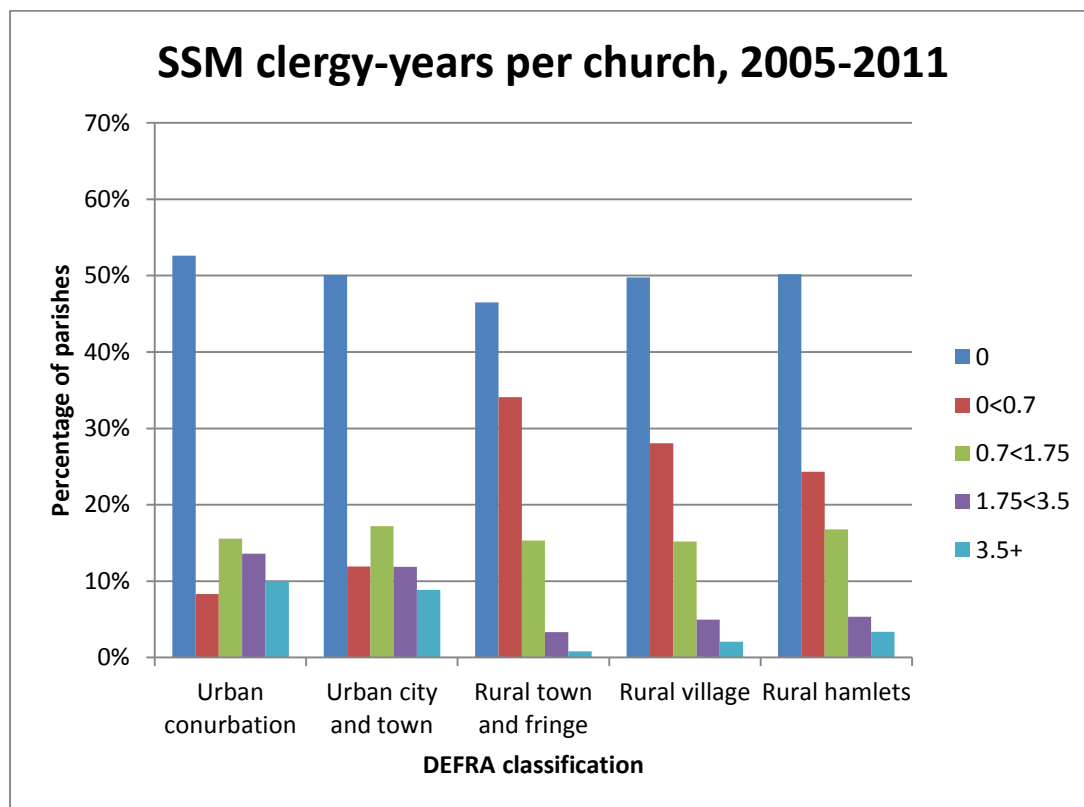


Figure 15: Non-stipendiary clergy-years per church

To see the complete picture, we add the stipendiary and SSM figures together, resulting in Table 17 and Figure 16. There is a clear difference between *urban* and *rural* areas, with the vast majority of *urban* churches having at least 0.5 FTE clergy per year (3.5 over 7 years), while most *rural* churches have less than 0.5 FTE per year.

Table 17: All clergy-years per church in 2005-2011 by DEFRA classification

Parish Geography	0	0<1.4	1.4<3.5	3.5<7	7+
Urban conurbation	1%	2%	11%	38%	48%
Urban city and town	2%	4%	19%	38%	38%
Rural town and fringe	2%	13%	44%	27%	15%
Rural village	5%	32%	48%	12%	3%
Rural hamlets and isolated dwellings	4%	29%	44%	16%	7%

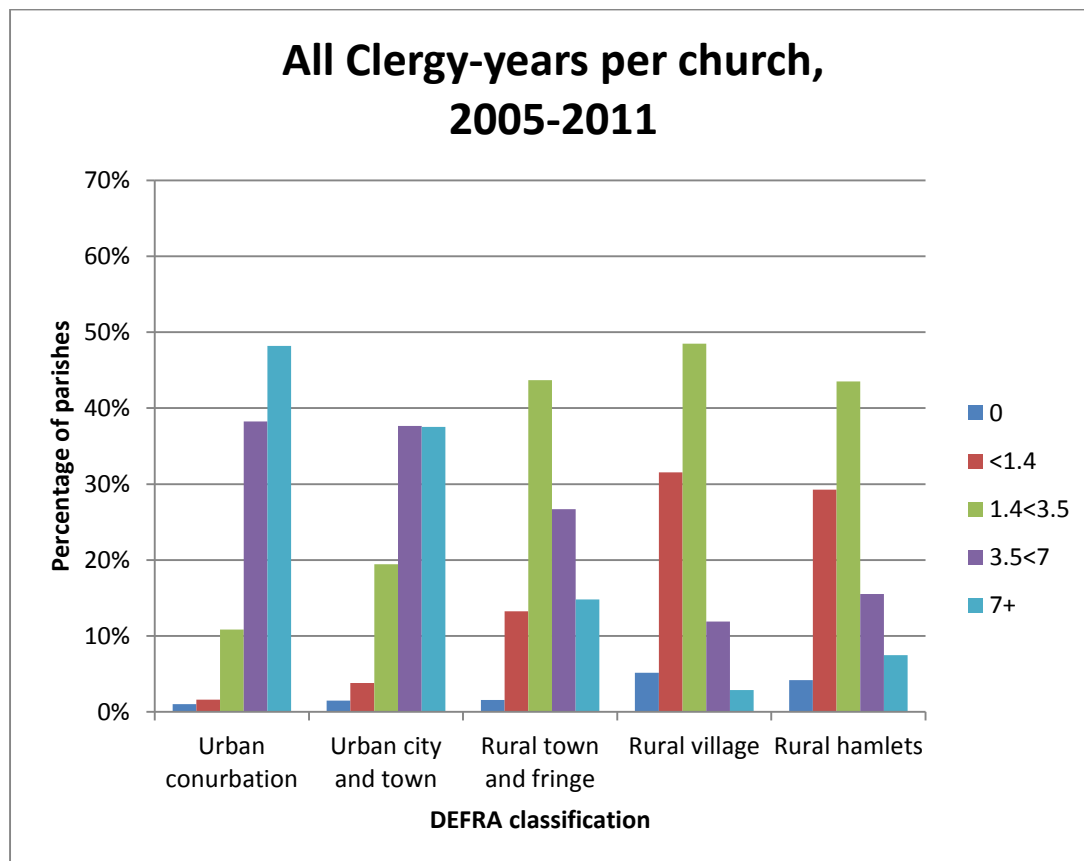


Figure 16: All clergy-years per church in 2005-2011 by DEFRA classification

We will now use the linear model developed in earlier sections to analyse this data. By already controlling for the variation caused by parish location, population change and congregation size we will be able to better understand the effect of clergy numbers.

5.1 Statistical analyses

Number of clergy

The number of clergy per church is added to the linear model developed in the preceding sections. At the 10-year stage the number of stipendiary clergy in 2011 is not significant ($p=0.56$, $R^2=1.9\%$) but it is significant at the 5-year stage ($p=0.014$, $R^2=1.8\%$). The same results are found when the number of self-supporting clergy are analysed (10 years $p=0.57$, $R^2=1.9\%$; 5 years $p=0.045$, $R^2=1.6\%$) and when all clergy are considered (10 years $p=0.82$, $R^2=2.1\%$; 5 years $p=0.0044$, $R^2=1.8\%$).¹⁶ Thus, when we control for the rurality, size of congregation, and population change in an area, the number of clergy per church, whether stipendiary, self-supporting or their total in 2011, each has a significant effect on standardised growth in the 5 years preceding, from 2006-2011, but not in the ten-year period 2001-2011. In all cases, having a larger number of clergy in 2011 is associated with more growth in 2006-2011.

We now look at the total number of clergy-years available to the parish in 2005-2011. For stipendiary clergy, there are significant effects over the ten years 2001-2011 ($p=0.0099$; $R^2=1.8\%$) but not at five years ($p=0.94$; $R^2=1.6\%$). The number of non-stipendiary clergy over either time period is not statistically significant.¹⁷ Combining the stipendiary and non-stipendiary figures gives the same pattern as the stipendiary clergy data with significant differences just observed at 10 years but not five years.¹⁸ As with the 2011 data above, having more clergy is associated with more growth, but this time in 2001-2011.

Change in clergy numbers

Rather than looking only at the number of clergy, if we consider instead any **changes** in the number of clergy available to the parish over the 2005-2011 period, we may discover a closer association with growth or decline.¹⁹ Having already controlled for external factors such as population change and geographical area, we find that the change in clergy numbers is a better predictor of growth than the numbers themselves. Between 2001 and 2011, the change in stipendiary clergy is very significant ($p=3.9 \times 10^{-5}$; $R^2=1.9\%$), and between 2006 and 2011 is it even greater ($p=1.3 \times 10^{-7}$; $R^2=1.8\%$). The number of clergy is not significant in addition to the change in clergy numbers. An increase in stipendiary clergy between 2005 and 2011 is associated with growth, a decrease with decline.

There is a statistical effect of borderline significance when the difference in non-stipendiary ministers are considered at 5 or 10 year intervals (10 years $p=0.052$, $R^2=1.9\%$; 5 years $p=0.06$, $R^2=1.6\%$). In each case, an increase in non-stipendiary ministers is associated with more growth.

Combining the two gives a statistically significant result for the change in all ministers at both 5 and 10 years (10 years $p=1.6 \times 10^{-5}$, $R^2=2.2\%$; 5 years $p=1.6 \times 10^{-7}$, $R^2=2.1\%$). Again, an increase in the number of ministers is associated with less decline.

¹⁶ At the 10-year stage in this model there is also a significant interaction term between size and the number of clergy indicating that more clergy have a bigger effect in bigger congregations.

¹⁷ 10 years $p=0.61$, $R^2=1.8\%$; 5 years $p=0.46$, $R^2=1.6\%$.

¹⁸ 10 years $p=0.050$, $R^2=1.8\%$; 5 years $p=0.69$, $R^2=1.6\%$.

¹⁹ The change is defined as the difference between the 2011 and 2005 figures.

Tables 18 and 19 give the percentage of parishes in each DEFRA classification and change category that have grown, remained stable, or declined in 2001-2011 and 2006-2011. We can see that in many, but not all, geographical classifications, more parishes with an increase in clergy are growing, while more parishes with a decrease in clergy are declining.

These tables can only give us part of the story of the effect of clergy on growth as other factors, such as population change and congregation size cannot all be displayed. However, we can see that changes in clergy numbers appear to have less effect in *rural villages and hamlets* in comparison with *urban* areas, as there is less difference between the columns for these rows as for the rows describing *urban* areas. This is most evident in Table 19.

Table 18: 10 year changes, DEFRA/stipendiary clergy change combination classified as growth, stability or decline

10-year changes	GROWTH		
Parish Geography	Increase in clergy	No change	Reduction
Urban conurbation	14.6%	14.0%	12.2%
Urban city and town	13.8%	9.9%	5.9%
Rural town and fringe	8.3%	8.6%	5.4%
Rural village	11.9%	12.1%	12.5%
Rural hamlets and isolated dwellings	12.9%	11.1%	11.3%
	STABILITY		
Parish Geography	Increase in clergy	No change	Reduction
Urban conurbation	57.6%	65.2%	62.0%
Urban city and town	58.1%	66.2%	61.6%
Rural town and fringe	65.6%	71.4%	62.5%
Rural village	72.2%	73.0%	74.3%
Rural hamlets and isolated dwellings	70.6%	69.9%	70.5%
	DECLINE		
Parish Geography	Increase in clergy	No change	Reduction
Urban conurbation	27.8%	20.9%	25.8%
Urban city and town	28.1%	23.9%	32.5%
Rural town and fringe	26.0%	20.0%	32.1%
Rural village	15.8%	14.9%	13.2%
Rural hamlets and isolated dwellings	16.5%	18.9%	18.2%

Table 19: 5 year data, %s of each DEFRA/stipendiary clergy change combination classified as growth, stability or decline

5-year changes	GROWTH		
Parish Geography	Increase in clergy	No change	Reduction
Urban conurbation	13.1%	9.3%	5.0%
Urban city and town	15.8%	6.6%	7.4%
Rural town and fringe	5.2%	8.0%	5.4%
Rural village	10.6%	7.3%	8.7%
Rural hamlets and isolated dwellings	9.4%	6.7%	6.9%
	STABILITY		
Parish Geography	Increase in clergy	No change	Reduction
Urban conurbation	71.2%	75.4%	76.5%
Urban city and town	72.3%	79.4%	67.8%
Rural town and fringe	82.3%	78.5%	78.6%
Rural village	77.0%	78.7%	79.2%
Rural hamlets and isolated dwellings	77.1%	79.1%	79.2%
	DECLINE		
Parish Geography	Increase in clergy	No change	Reduction
Urban conurbation	15.7%	15.4%	18.6%
Urban city and town	11.9%	14.0%	24.8%
Rural town and fringe	12.5%	13.5%	16.1%
Rural village	12.4%	14.0%	12.1%
Rural hamlets and isolated dwellings	13.5%	14.1%	13.8%

6 Conclusions

The variety of factors that affect change within a congregation's Statistics for Mission figures is enormous. Voas and Watt touched on many of them in their report. In this document, we have shown that the location of a parish, the congregation size, and the population change in the parish all have statistically significant effects on a congregation's growth. These are not factors that we can change, but being able to partition out the effects of these factors, we can look in more detail at the effect of other factors such as benefice structure and clergy numbers.

The change in the number of clergy per church in the parish has a significant effect on growth in that parish. Where there is an increase in stipendiary clergy, there is a greater likelihood of growth, a decrease in stipendiary clergy is more likely, on average, to lead to decline.

Fiona J Tweedie, January 2016

Appendix I: IMD analysis

This appendix details the statistical analysis of the standardised attendance data, as partitioned by rurality defined by the “Geographic Barriers to Housing and Services” sub-domain of the Index of Multiple Deprivation. Descriptive statistics and graphs are given in Section 2.1 of the main report.

Tables i-iii below give the figures and percentages of parishes in each of the geography categories, split by the number of churches in the benefice. From Table i we can see the sample sizes that are available; for example, there are few parishes in benefices with 7+ churches in “urban” to “rural” areas. Table ii shows how the parishes within each geographical category are structured. While 66% of “urban” parishes are single church units (SCU(1)), this falls to 11% in “remote-rural” areas. In contrast, the proportion of urban parishes in a unit with more than six churches is 1%, rising to 20% in remote-rural areas. Table iii presents the percentages by the number of churches within the benefice. We can see within benefices with two churches, 20% of parishes are found within “urban” areas, 13% in “mostly urban” areas, and 46% in “remote-rural” areas.

Table i: Counts of parishes by Parish Geography and benefice Structure

Parish Geography category	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Urban	1393	440	148	102	19	2102
Mostly urban	680	298	147	126	24	1275
Urban-rural	442	243	122	107	29	943
Rural	341	228	142	129	38	878
Remote-rural	805	1014	1211	2676	1431	7137
Total	3661	2223	1770	3140	1541	12335

Table ii: Percentage of each Parish Geography category by benefice structure

Parish Geography category	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Urban	66%	21%	7%	5%	1%	100%
Mostly urban	53%	23%	12%	10%	2%	100%
Urban-rural	47%	26%	13%	11%	3%	100%
Rural	39%	26%	16%	15%	4%	100%
Remote-rural	11%	14%	17%	37%	20%	100%

Table iii: Percentage of each structure of benefice by Parish Geography category

Parish Geography category	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Urban	38%	20%	8%	3%	1%	17%
Mostly urban	19%	13%	8%	4%	2%	10%
Urban-rural	12%	11%	7%	3%	2%	8%
Rural	9%	10%	8%	4%	2%	7%
Remote-rural	22%	46%	68%	85%	93%	58%
Total	100%	100%	100%	100%	100%	

I.1 Average Standardised Attendance figures

We can look at the standardised attendance figures partitioned by parish geography and benefice structure. A parish is defined as “growing” if its standardised attendance is greater than 1, “declining” if it less than -1, and “stable” otherwise.

Considering first the 10-year data, taken between 2001 and 2011, Table iv shows the split across parish geography categories of growing, stable and declining parishes. Each cell shows the percentage of parishes in that structure/parish geography that is a) growing, b) remaining stable, c) declining, e.g. 13% of SCU(1) churches in “urban” areas are growing, while 21% are declining.

Table iv: 10 year data, %s of each Geography/structure combination classified as growth, stability or decline

10-year changes	GROWTH				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	13.35%	12.05%	14.86%	9.80%	15.79%
Mostly-urban	9.12%	12.42%	12.24%	7.14%	8.33%
Urban-rural	11.09%	11.52%	10.66%	10.28%	10.34%
Rural	11.73%	10.96%	11.27%	11.63%	18.42%
Remote-rural	11.80%	10.45%	12.30%	13.00%	13.70%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	65.69%	63.64%	58.78%	65.69%	63.16%
Mostly-urban	67.06%	59.06%	68.03%	57.94%	70.83%
Urban-rural	65.61%	64.20%	69.67%	57.94%	51.72%
Rural	66.57%	60.53%	71.83%	61.24%	60.53%
Remote-rural	71.30%	71.60%	71.26%	72.09%	72.40%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	20.96%	24.32%	26.35%	24.51%	21.05%
Mostly-urban	23.82%	28.52%	19.73%	34.92%	20.83%
Urban-rural	23.30%	24.28%	19.67%	31.78%	37.93%
Rural	21.70%	28.51%	16.90%	27.13%	21.05%
Remote-rural	16.89%	17.95%	16.43%	14.91%	13.91%

In comparison with the diocesan categories in *Stronger as One*, the parish Geography figures show a lower percentage of “Urban” churches growing (around 20% in Table 16, p23, here around 13%), and a higher percentage declining (around 23% here, compared with 21% previously). There are also much higher percentages of declining “urban-rural” and “rural” parishes with large amalgamations in comparison with the diocesan categories.

The three graphs that make up Figure A show the average standardised attendance change over 10 years in each of the growing, stable and declining categories. In most cases, the geographic category and the number of churches within a benefice make little difference to the growth or otherwise of the parish.

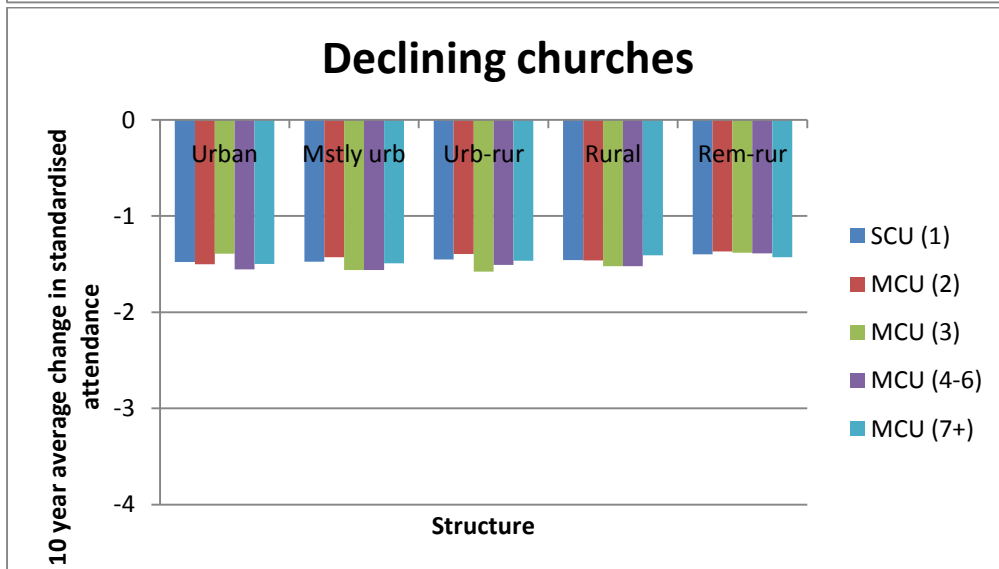
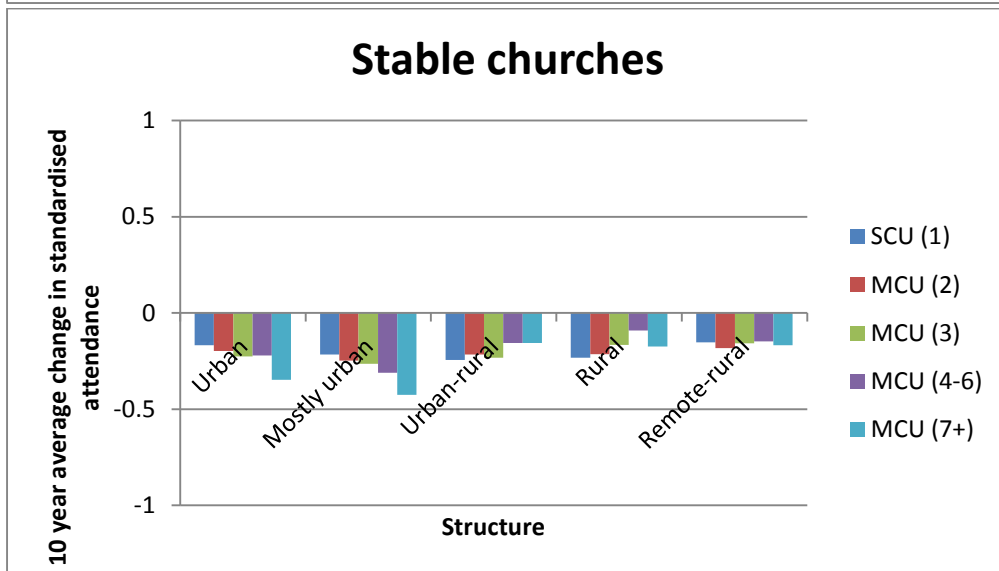
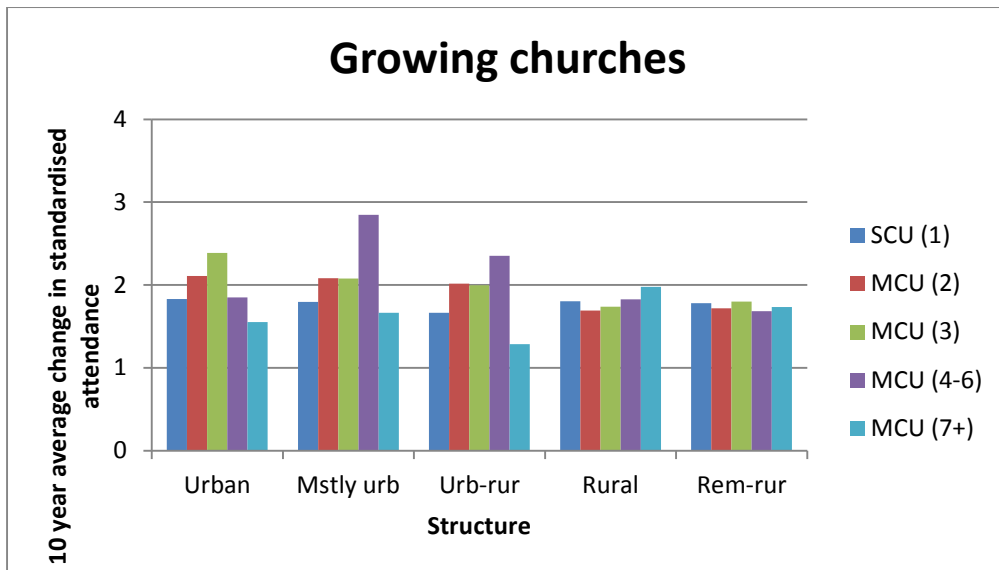


Figure A: 10-year standardised attendance change

Turning to the 5-year data, Table v details the change in standardised attendance between 2006 and 2011. We can see that here 9% of parishes in SCU(1)s in “urban” parishes have grown between 2006 and 2011, 76% have remained stable, and 15% declined. These figures are roughly similar to the diocesan categorisation, shown in Table 15, page 22, of *Stronger as One*. There is a slight increase in percentages in each group being stable and correspondingly fewer churches classified as growing or declining.

Table v: 5 year data, %s of each Geography/structure combination classified as growth, stability or decline

5-year changes	GROWTH				
Parish Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	9.34%	9.55%	11.49%	9.80%	10.53%
Mostly-urban	7.06%	9.40%	10.20%	10.32%	4.17%
Urban-rural	6.56%	7.41%	6.56%	11.21%	13.79%
Rural	6.16%	5.70%	7.04%	10.85%	7.89%
Remote-rural	9.19%	7.59%	7.93%	8.37%	8.67%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	75.65%	75.68%	75.68%	74.51%	68.42%
Mostly-urban	78.09%	74.50%	74.83%	66.67%	91.67%
Urban-rural	78.05%	79.01%	77.87%	66.36%	72.41%
Rural	80.94%	80.26%	78.17%	74.42%	81.58%
Remote-rural	79.13%	77.81%	78.78%	78.06%	78.62%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	15.01%	14.77%	12.84%	15.69%	21.05%
Mostly-urban	14.85%	16.11%	14.97%	23.02%	4.17%
Urban-rural	15.38%	13.58%	15.57%	22.43%	13.79%
Rural	12.90%	14.04%	14.79%	14.73%	10.53%
Remote-rural	11.68%	14.60%	13.29%	13.57%	12.72%

Figure B overleaf shows the average change in standardised attendance for each of the geographic and benefice structure categories. In comparison with the 10-year figures in Figure A, there is more difference across the categories but little evidence of systematic changes.

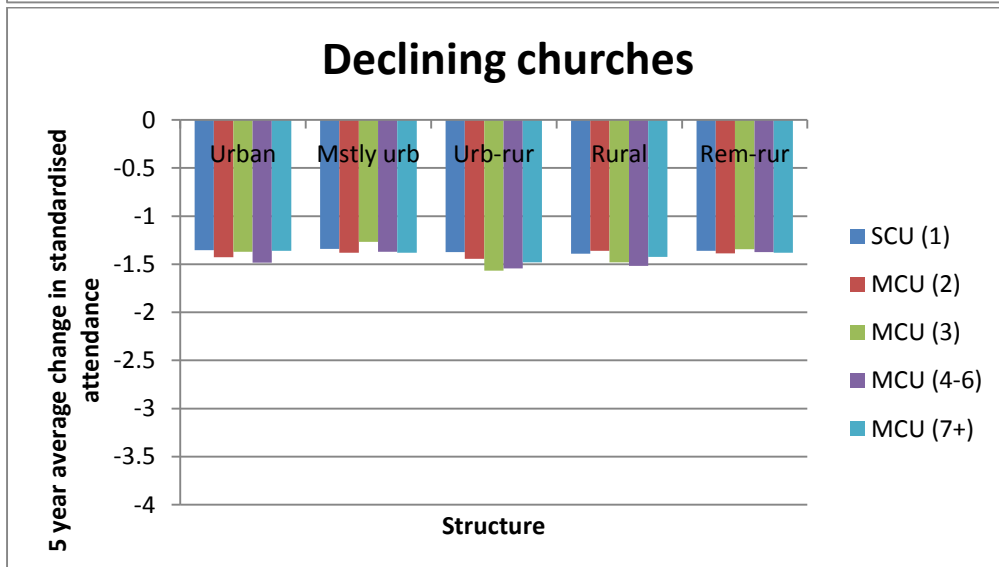
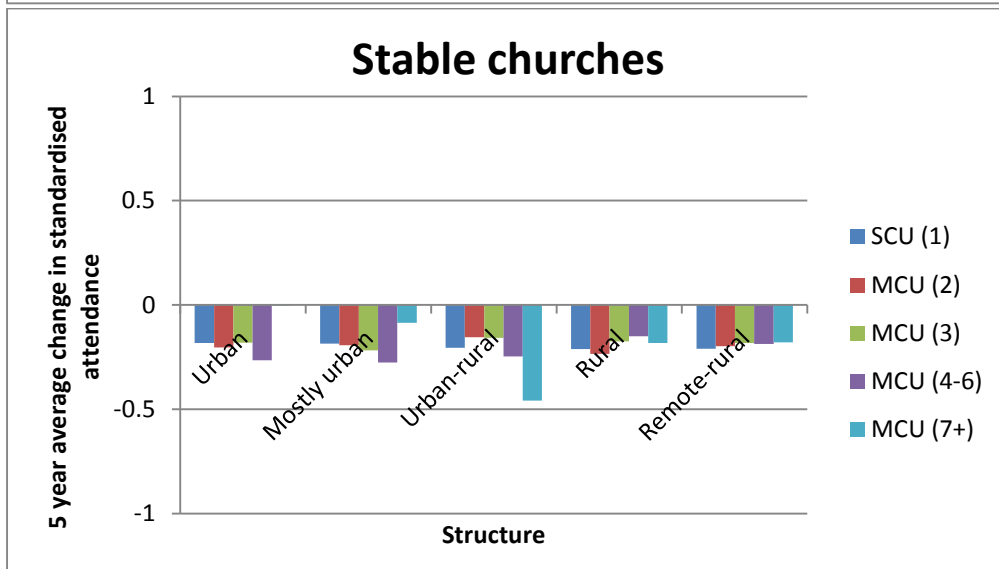
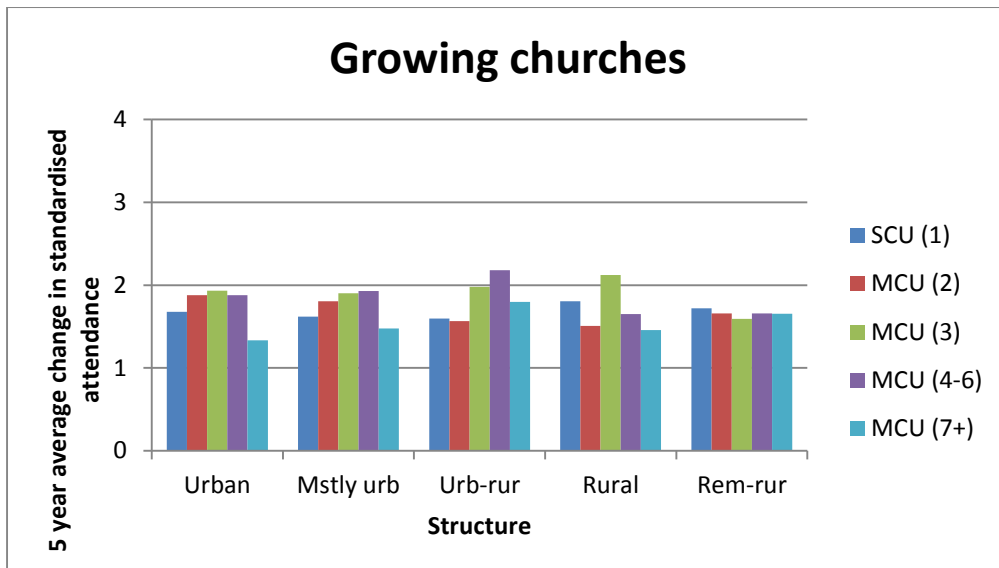


Figure B: 5-year standardised attendance change

Figure C illustrates the average change in standardised attendance between 2001 and 2011 for all parishes, split by structure and parish geography. A parish is described as “declining” if the standardised attendance is less than -1; it can be seen here that even the greatest average declines are far from this value.

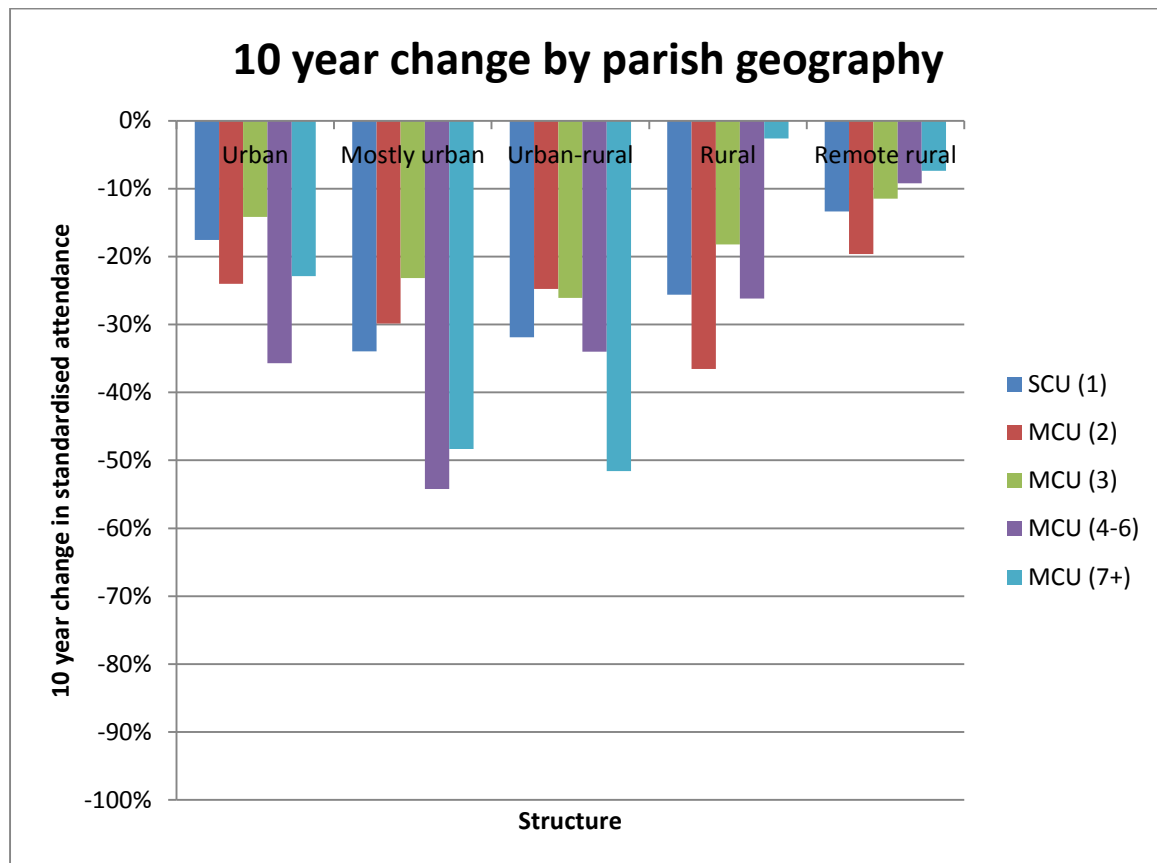


Figure C: 10 year change by structure and parish geography

We can see that in “rural” and “remote-rural” parishes, the structure with the biggest decrease is that of two-church units – MCU(2). Single church units (SCU(1)) also show a lot of decline. The least decline is in the largest amalgamations, MCU(7). In “urban” and “mostly urban” areas there are larger declines in large amalgamated structures, but it should be noted that Table i indicated that there are few benefices in these categories: around 100 churches in MCU(4-6) and 20-30 in MCU(7+) in all urban categories.

Figure D below gives the equivalent figures for the five-year change between 2006 and 2011. The vertical scale is the same as in Figure C, showing the difference between these values and the -1 criterion. We can see that the average change for all of the categories is less than -0.3 with most being between -0.1 and -0.3.

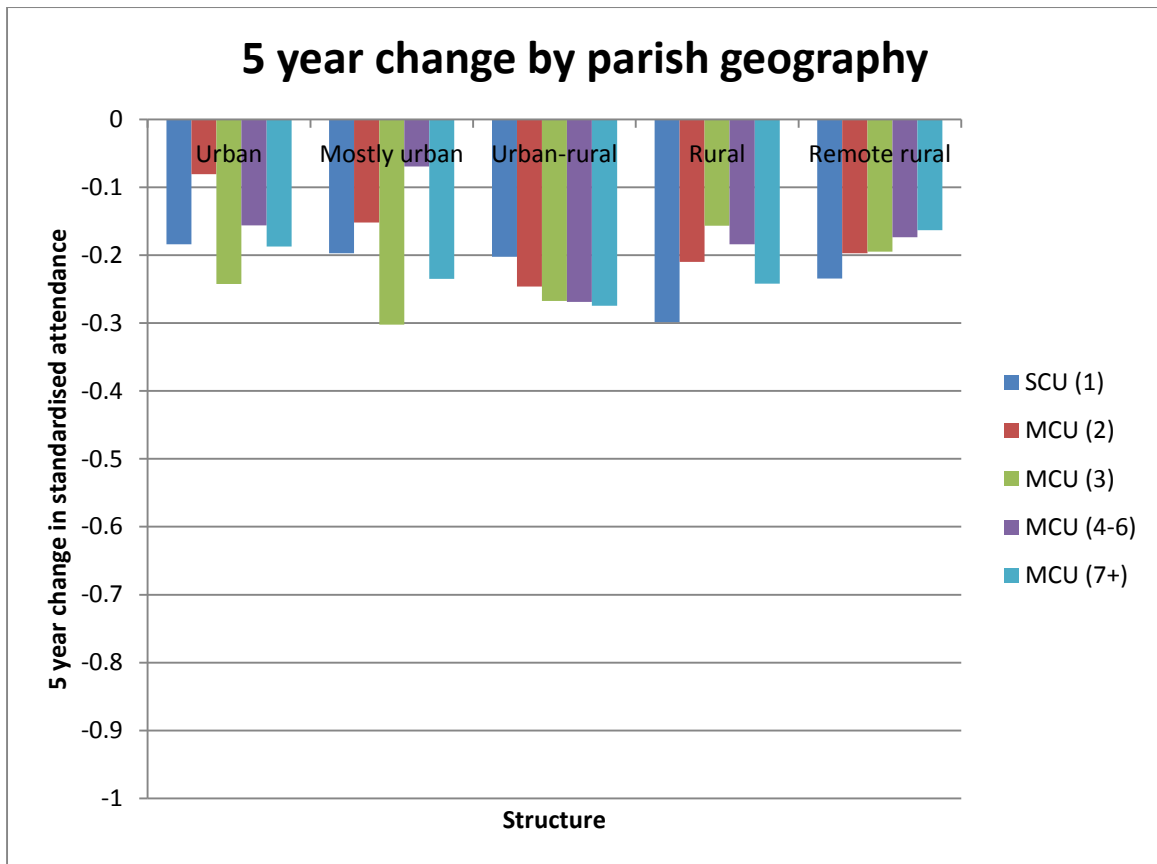


Figure D: Change in 5 years by IMD parish geography

I.2 Statistical Analysis

When linear modelling is used to examine the effects of rurality and benefice structure on average standardised church growth over 10 years we find the following. The IMD rurality factor is significant ($p=0.0037$) as is benefice structure ($p=2.0 \times 10^{-9}$) but not their interaction ($p=0.052$). In general the more rural an area is, the less the decline in average standardised attendance: “urban” areas see an average change of -0.20, then -0.34, -0.30, -0.26, -0.11 through to “remote-rural” areas respectively. Benefice structure effects are seen in average changes of -0.22 and -0.24 for SCU(1) and MCU(2) parishes, while MCU(3), MCU(4-6) and MCU(7+) parishes have reduced average changes of -0.14, -0.13 and -0.09 respectively.

Looking at the changes over 5 years, we find that there are no significant effects of rurality, benefice structure nor their interaction ($p=0.34$; $p=0.47$; $p=0.17$).

I.3 Covariate analysis

Throughout this section, we have categorised each parish into a geographical grouping such as “urban” or “remote-rural”. However, the IMD Geographic Barriers to Housing and Services score is a number between 0 and 100 so it is possible to make use of this figure directly. Instead of grouping parishes into categories like “urban” or “remote-rural”, it is also possible to treat each parish individually, making use of its own IMD Geographic Barriers to Housing and Services score. In this case the parish IMD barrier acts as a covariate in the model.

When the analysis is carried out in this way, there is no significant difference in average standardised attendance by benefice structure, but there is a small but significant effect of rurality ($p < 2 \times 10^{-16}$ - 10 years; $p = 0.0041$ - 5 years). The more difficult the access to services, the greater the increase in standardised attendance ($r = 0.079$ - 10 years; $r = 0.027$ - 5 years), and this is similar across all benefice structures. At 10 years, the increase in standardised growth for unit increase in IMD rurality score is 0.00325, for 5 years the increase is 0.00085).

I.4 Conclusions

When statistical analysis is applied to the data we find that the rurality of an area, as defined by the “Geographic Barriers to Housing and Services” sub-domain of the Index of Multiple Deprivation, is a significant factor in average standardised church growth. In general, the more remote an area is, the less decline the parish has seen.

The 10-year data shows a statistical effect of benefice structure. Here, larger amalgamations show less average decline than smaller parish groups.