

Further statistical research into the impact of benefice structure on numerical growth

Following initial work as part of the church growth research programme, we are pleased to publish this further piece of research, into the **impact of amalgamations and team ministries on church growth**. The initial findings on this complex issue generated significant interest. The new research enables us to reach firmer conclusions about the impact of benefice structure on numerical growth.

The **key findings** of this new research are:

- The effect of amalgamations on the growth or decline of church attendance is complex, and varies considerably by diocese and by geographical access to services (a practical measure of rurality).
- In urban areas, benefice structure does not have any statistically significant effect on the likelihood of growth or decline in attendance being experienced by a parish. It should be noted that in urban areas there are relatively few large multi-parish benefices.
- Within other areas there is evidence that parishes in amalgamated benefice structures perform differently in terms of numerical growth outcomes compared with parishes in single church benefices. However, there is not a simple 'straight-line' pattern of the more churches that are added to the amalgamated structure, the greater the chance of decline.
- In remote rural areas there is evidence that parishes in amalgamated benefice structures perform less well in terms of numerical growth outcomes than parishes in single church benefices (although once again it is not the case that the larger the size of the amalgamation, the greater the chance of decline).
- There is no significant evidence to suggest a difference in attendance patterns at parishes with a Team Ministry.

The further research was undertaken by the Revd Dr Fiona Tweedie, a Minister and the Mission Statistics coordinator for the Church of Scotland (who has previously taught statistics at the Universities of Glasgow and Edinburgh). Dr Tweedie used the same methodology to analyse growth as that employed in the core strands of the research programme by Professor David Voas from the University of Essex. She also built upon the analysis of the previous report by, for example, using data on multi-church parishes that were not included previously.

Kevin Norris
Senior Strategy Officer
Strategy & Development Unit

Dr Bev Botting
Head of Research & Statistics
Archbishops' Council

Stronger as One?

Amalgamations and church attendance

Summary

- Following the publication of the results from the Church Growth Research Programme as “From Anecdote to Evidence”, and in technical reports, a further report was commissioned to investigate issues around amalgamations, sub-strand 3c[1], in more detail.
- Using the methodology proposed by Voas and Watt [2] in the report on Strands 1 and 2, this analysis shows that the effect of amalgamations on the growth or decline of church attendance is complex, and varies considerably by diocese and by geographical access to services (a practical measure of rurality).
- In urban areas, benefice structure does not have any statistically significant effect on the likelihood of growth or decline in attendance being experienced by a parish. It should be noted that in urban areas there are relatively few large multi-parish benefices.
- Within other areas there is evidence that parishes in amalgamated benefice structures perform differently in terms of numerical growth outcomes compared with parishes in single church benefices. However, there is not a simple ‘straight-line’ pattern of the more churches that are added to the amalgamated structure, the greater the chance of decline.
- In remote rural areas there is evidence that parishes in amalgamated benefice structures perform less well in terms of numerical growth outcomes than parishes in single church benefices (although once again it is not the case that the larger the size of the amalgamation, the greater the chance of decline).
- There is no significant evidence to suggest a difference in attendance patterns at parishes with a Team Ministry.
- Further investigations are in progress to consider how the impact of some additional background variables might also be included in the analysis.

1 Introduction

Goodhew et al.’s report issued as Strand 3c of the Church Growth Research Programme showed much careful data preparation, particularly in relation to the types of amalgamations and team ministries. This further analysis was commissioned following concerns about the exclusion of a large amount of data and the statistical analysis that had been employed. This report should be read in conjunction with the original Strands 1, 2, and 3c reports.

This is a first report on investigation of the issues involved. It begins with descriptive information about the various types of benefice structures used by dioceses. As this analysis was carried out on the data as at 2011, before the creation of the Diocese of West Yorkshire and the Dales, I maintain the use of the former dioceses of Bradford, Ripon & Leeds and Wakefield. From examination of the tables, it is evident that dioceses have made differing use of amalgamations, where two or more

^[1] <http://www.churchgrowthresearch.org.uk/UserFiles/File/Reports/AmalgamationsandTeamsReportFINAL130214.pdf> Goodhew, with Kautzer and Moffatt, last accessed 9 June 2014.

^[2] http://www.churchgrowthresearch.org.uk/UserFiles/File/Reports/Report_Strands_1_2_rev2.pdf. Voas and Watt, last accessed 9 June 2014.

churches are grouped together under an incumbent. There is a clear geographical effect, as seen through the Geographical Barrier sub-domain of the Index of Multiple Deprivation.

In order to make a coherent whole with the methodology used in the analysis of Strands 1 and 2, the standardised data used by Voas and Watt is used for this report. I am grateful to Professor Voas for the use of his data and his helpfulness in dealing with questions. The definitions and categories proposed by Goodhew et al in the Strand 3c report have also been used here. In particular, “the term “amalgamation” refers to where two or more churches are grouped together under an incumbent – however that structure is named.”¹

Data on church attendance is held at the parish level, and the analysis described in this report is based on categorising the parishes based on the structure in which they fall. Statistical analysis of the parish attendance data, categorised by amalgamation category, indicates that the effect of geography cannot be ignored, and that the effect of amalgamations on church attendance differs across geographical categories of diocese. Details of these effects are described in this report, for example, single church units are not always the structure which has least deterioration in attendance figures, with large amalgamations in rural areas attracting more people than might be otherwise expected.

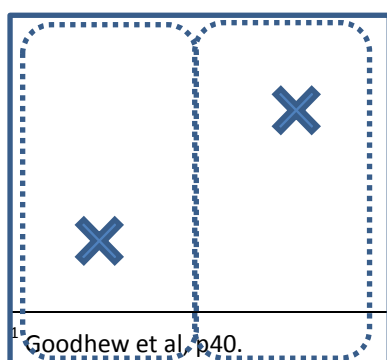
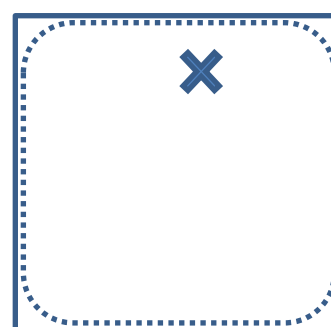
2 Descriptive statistics

The following two sections examine the data by diocese and in terms of geography.

2.1 Structural differences by Diocese

It was generally understood that different dioceses, particularly those in urban and rural areas, have different types of structures, with rural areas believed to have more churches and parishes per benefice than urban dioceses.

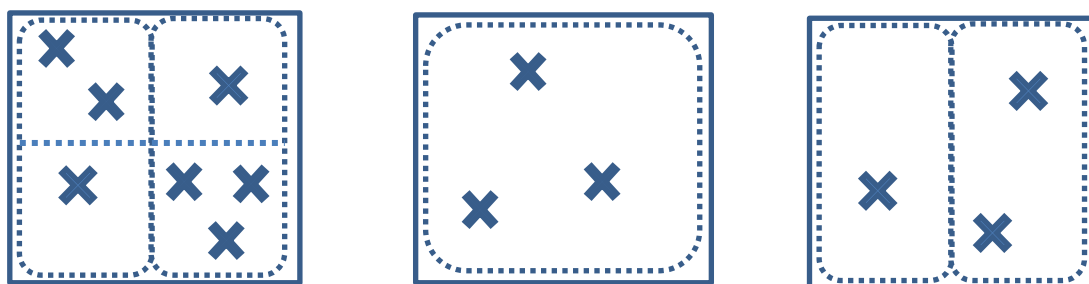
The church units considered in this report can be formed in different ways. The most straightforward is the benefice which consists of a single parish within which is one church. The diagram to the right illustrates this scenario. The benefice is represented by the solid outline square and the parish by the dotted lines, here slightly indented for clarity. The cross represents the church. This type of parish was termed by Goodhew et al as a single-church-parish/single-church-unit or SCP/SCU.



A parish with one church, but part of a benefice which contains more than one parish, is termed a single-church-parish/multiple-church-unit or SCP/MCU. The diagram on the left illustrates the example where one benefice contains two parishes (dotted lines) and one church (cross) in each parish. Each of these parishes is classified as SCP/MCU.

¹ Goodhew et al, p40.

Parishes with more than one church are termed multiple-church-parish/multiple-church-units or MCP/MCU. Some examples of possible configurations are shown below, from left to right: a benefice with four parishes with differing numbers of churches in each; a benefice with a single parish which has three churches; a benefice with two parishes, one of which has two churches. In each case, parishes with more than one church will be classified as MCP/MCU, parishes with a single church as SCP/MCU.



Due to concerns over data received from parishes within some of these benefices, Goodhew et al had removed the entire MCP/MCU category from their analysis.²

Table 1 shows the percentages of each type of single or multiple **parish** structure by diocese. For example, the diocese of Birmingham has 67.8% of its parishes in single-church-parishes/single-church-units, while 12.1% are single-church-parishes in multiple-church units. The number of **churches** in each category is shown on the second line of each entry. All of the church figures are included for ease of comparison with “on-the-ground” impressions; the report otherwise deals with information at a **parish** level.

For the MCP/MCU parishes there is additional information about the number of such parishes which are the only parish in the benefice – the central diagram above – described as “1-parish” in the table below.

Table 1: Parish structure by Diocese

Diocese	SCP/SCU	SCP/MCU	MCP/MCU;1-parish
Bath & Wells	11.2% 52 churches	74.2% 345 churches	14.6% 161 churches; 22 1-parish with 64 churches
Birmingham	67.8% 101	12.1% 18	20.1% 78; 28 1-parish with 73 churches
Blackburn	60.9% 126	14.5% 30	24.6% 120; 40 1-parish with 96 churches
Bradford	48.8% 60	24.4% 30	26.8% 72; 22 1-parish with 50 churches
Bristol	36.8% 60	44.8% 73	18.4% 71; 20 1-parish with 51 churches
Canterbury	18.2% 47	58.9% 152	22.9% 136; 30 1-parish with 74 churches
Carlisle	14.3% 38	63.8% 169	21.9% 139; 23 1-parish with 63 churches
Chelmsford	37.2% 168	42.0% 190	20.8% 233; 74 1-parish with 192 churches

² Goodhew et al, p13.

Chester	40.6% 112	32.6% 90	26.8% 163; 66 1-parish with 147 churches
Chichester	44.7% 166	30.7% 114	24.5% 204; 68 1-parish with 158 churches
Coventry	34.9% 69	46.5% 92	18.7% 87; 24 1-parish with 60 churches
Derby	29.0% 73	50.0% 126	21.0% 131; 32 1-parish with 89 churches
Durham	56.1% 128	29.8% 68	14.0% 75; 29 1-parish with 69 churches
Ely	36.9% 114	55.3% 171	7.8% 55; 17 1-parish with 40 churches
Exeter	11.5% 56	69.1% 337	19.5% 215; 21 1-parish with 52 churches
Gloucester	7.8% 24	71.2% 218	20.9% 142; 15 1-parish with 39 churches
Guildford	51.5% 84	23.3% 38	25.2% 92; 31 1-parish with 72 churches
Hereford	6.2% 21	75.8% 257	18.0% 136; 17 1-parish with 40 churches
Leicester	13.7% 32	64.5% 151	21.8% 134; 23 1-parish with 67 churches
Lichfield	30.4% 129	46.2% 196	23.4% 250; 65 1-parish with 178 churches
Lincoln	15.7% 76	73.1% 354	11.2% 179; 30 1-parish with 126 churches
Liverpool	54.9% 112	31.9% 65	13.2% 68; 23 1-parish with 59 churches
London	80.7% 326	3.2% 13	16.1% 144; 64 1-parish with 142 churches
Manchester	52.7% 138	30.2% 79	17.2% 113; 34 1-parish with 87 churches
Newcastle	45.0% 77	24.6% 42	30.4% 127; 29 1-parish with 78 churches
Norwich	8.9% 50	80.6% 452	10.5% 134; 18 1-parish with 47 churches
Oxford	17.6% 108	61.6% 378	20.9% 325; 68 1-parish with 191 churches
Peterborough	14.0% 48	78.8% 270	7.3% 52; 13 1-parish with 28 churches
Portsmouth	61.9% 86	18.0% 25	20.1% 60; 23 1-parish with 50 churches
Ripon & Leeds	31.5% 52	38.8% 64	29.7% 137; 26 1-parish with 80 churches
Rochester	61.6% 133	21.8% 47	16.7% 82; 32 1-parish with 74 churches
Salisbury	6.9% 31	74.8% 338	18.4% 203; 26 1-parish with 73 churches
Sheffield	58.6% 102	25.3% 44	16.1% 65; 23 1-parish with 55 churches
Sodor & Man	50.0% 14	7.1% 2	42.9% 30; 12 1-parish with 30 churches
Southwark	64.5% 187	16.2% 47	19.3% 132; 49 1-parish with 118 churches

Southwell & Nottingham	36.5% 93	48.6% 124	14.9% 89; 23 1-parish with 58 churches
St.Albans	29.3% 96	54.6% 179	16.2% 126; 32 1-parish with 81 churches
St.Edmundsbury & Ipswich	6.6% 29	86.2% 381	7.2% 70; 8 1-parish with 20 churches
Truro	16.6% 36	53.5% 116	30.0% 153; 36 1-parish with 90 churches
Wakefield	41.5% 76	36.6% 67	21.9% 93; 31 1-parish with 71 churches
Winchester	28.5% 84	44.8% 132	26.8% 190; 49 1-parish with 118 churches
Worcester	18.8% 33	48.3% 85	33.0% 165; 28 1-parish with 96 churches
York	22.8% 102	52.4% 234	24.8% 266; 55 1-parish with 143 churches
Total	29.9% 3749	51.1% 6403	18.9% 5697; 1399 1-parish 3599 churches

It can be seen that dioceses do make different use of parish structures. The dioceses of Worcester, Newcastle, Truro and Ripon and Leeds³ have around 30% of their parishes in MCP/MCU formats, while the three dioceses of Ely, Peterborough and St.Edmundsbury & Ipswich have around 7% of their parishes in this structure. Removing all of the MCP/MCU data, as carried out in Goodhew et al's report, may have very different effects on the analysis for different dioceses. It is hoped that the standardisation and capping methodology used by Voas and Watt will mitigate the problems described by Goodhew et al, and the MCP/MCU parishes will be retained for much of this report. The conclusions presented have been checked for robustness with respect to the inclusion or otherwise of this data.⁴

Goodhew et al categorise the parishes within benefice structures into church units with one, two, three, four to six and more than seven units, denoted as SCU(1), MCU(2), MCU(3), MCU(4-6), and MCU(7+) respectively. Again for the purposes of homogeneity with the original reports, I will use these categories here. Table 2 on the following page lists the percentage of different church structures by size of unit and by diocese.

³ This analysis was carried out on the data as at 2011, before the creation of the Diocese of West Yorkshire and the Dales.

⁴ The conclusions reached in this report differ in only one respect when MCP/MCU churches are removed, and that is within urban dioceses where the effect of benefice structure becomes significant. Close inspection of the data reveals that this is due to a small number of multiple-church-units in London and Southwark dioceses. For more information, see Appendix II.

Table 2: Different benefice structures by diocese - percentages

Dioceses	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Bath & Wells	11.2%	15.9%	20.0%	36.6%	16.3%
Birmingham	67.8%	18.8%	8.7%	4.7%	0.0%
Blackburn	60.9%	19.8%	12.6%	6.8%	0.0%
Bradford	48.8%	26.0%	15.5%	9.8%	0.0%
Bristol	36.8%	19.0%	21.5%	17.8%	4.9%
Canterbury	18.2%	26.0%	26.7%	29.1%	0.0%
Carlisle	14.3%	10.6%	22.3%	32.8%	20.0%
Chelmsford	37.2%	25.9%	15.9%	17.5%	3.5%
Chester	40.6%	37.7%	14.1%	7.6%	0.0%
Chichester	44.7%	27.2%	16.7%	11.3%	0.0%
Coventry	34.9%	26.3%	13.1%	22.2%	3.5%
Derby	29.0%	19.8%	21.0%	18.3%	11.9%
Durham	56.1%	29.4%	7.0%	0.9%	6.6%
Ely	36.9%	11.7%	10.7%	31.1%	9.7%
Exeter	11.5%	13.5%	9.2%	33.6%	32.2%
Gloucester	7.8%	13.1%	16.0%	34.0%	29.1%
Guildford	51.5%	30.7%	14.1%	3.7%	0.0%
Hereford	6.2%	8.3%	9.4%	35.4%	40.7%
Leicester	13.7%	14.1%	20.5%	29.1%	22.7%
Lichfield	30.4%	18.2%	18.6%	25.2%	7.6%
Lincoln	15.7%	11.8%	20.0%	33.1%	19.4%
Liverpool	54.9%	26.0%	8.8%	10.3%	0.0%
London	80.7%	14.9%	4.2%	0.3%	0.0%
Manchester	52.7%	17.6%	12.6%	14.9%	2.3%
Newcastle	45.0%	18.7%	16.4%	11.7%	8.2%
Norwich	8.9%	8.0%	8.7%	53.1%	21.2%
Oxford	17.6%	16.8%	11.4%	30.9%	23.3%
Peterborough	14.0%	11.4%	16.6%	45.5%	12.5%
Portsmouth	61.9%	26.6%	5.8%	5.8%	0.0%
Ripon & Leeds	31.5%	18.2%	12.1%	27.9%	10.3%
Rochester	61.6%	24.1%	7.4%	6.9%	0.0%
Salisbury	6.9%	8.9%	14.2%	34.7%	35.4%
Sheffield	58.6%	27.0%	6.3%	8.1%	0.0%
Sodor & Man	50.0%	32.1%	14.3%	3.6%	0.0%
Southwark	64.5%	21.4%	7.9%	4.5%	1.7%
Southwell & Nottingham	36.5%	18.8%	17.7%	21.6%	5.5%
St.Albans	29.3%	20.1%	24.1%	21.3%	5.2%
St.Edmundsbury & Ipswich	6.6%	7.2%	12.4%	42.8%	31.0%
Truro	16.6%	26.7%	23.5%	28.1%	5.1%
Wakefield	41.5%	38.8%	6.6%	8.7%	4.4%
Winchester	28.5%	15.3%	13.2%	31.2%	11.9%
Worcester	18.8%	13.6%	23.3%	36.4%	8.0%
York	22.8%	18.6%	16.1%	40.7%	1.8%
Total	29.9%	18.1%	14.4%	25.3%	12.4%

Table 3 below gives the size of benefice structure in which the average parish in a diocese finds itself. The figures are illustrated in the map which follows as Figure 1. For example, in Hereford the average parish falls into a benefice of seven churches, while in Southwell & Nottingham the figure is 2.7.

Table 3: Average number of churches within the benefice within which a parish falls by Diocese

Diocese	Average size of CU	Diocese	Average size of CU
Hereford	7.0	Southwell & Nottingham	2.7
Salisbury	6.6	Chelmsford	2.6
Gloucester	5.9	Newcastle	2.6
St.Edmundsbury & Ipswich	5.8	Coventry	2.6
Exeter	5.6	Bristol	2.6
Norwich	5.0	Manchester	2.2
Leicester	4.5	Wakefield	2.2
Oxford	4.5	Chichester	2.0
Lincoln	4.3	Durham	1.9
Bath & Wells	4.3	Bradford	1.9
Carlisle	4.2	Chester	1.9
Peterborough	4.0	Liverpool	1.8
Worcester	3.8	Guildford	1.7
Winchester	3.5	Sodor & Man	1.7
Ripon & Leeds	3.5	Blackburn	1.7
Ely	3.5	Sheffield	1.6
Lichfield	3.3	Rochester	1.6
York	3.1	Southwark	1.6
Derby	3.1	Portsmouth	1.6
Truro	3.1	Birmingham	1.5
Canterbury	2.9	London	1.2
St.Albans	2.8		

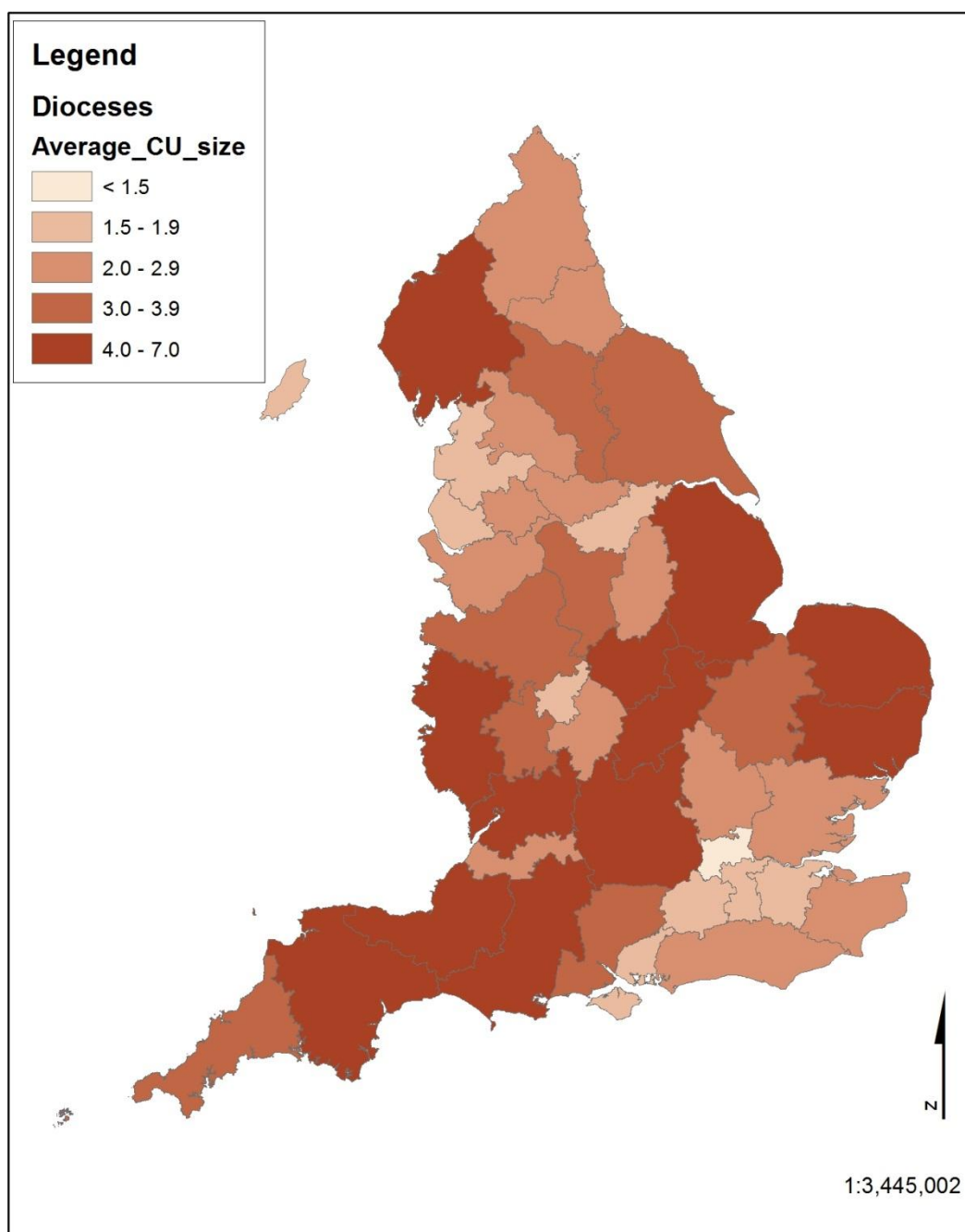


Figure 1: Average size of Church Unit

From Tables 2 and 3, and Figure 1 above, it can be seen that the more rural areas have more churches per benefice than dioceses in urban areas. Hereford parishes have on average seven churches per benefice, with Salisbury parishes in benefices with 6.6 churches, while at the other end, London parishes are in benefices with just 1.2 and Birmingham 1.5 churches. To compare different church structures without controlling for diocese would be to confound the test of church attendance between urban and rural areas with the effect of the amalgamation.

2.2 Geographical differences

The Index of Multiple Deprivation (IMD) is a basket measure of different aspects of deprivation in an area.⁵ One of the sub-domains of the IMD is that of Geographical Barriers to Housing and Services. This includes data on road distances to services such as a GP, post office, shop and primary school. Using this type of data gives a more practical measure of the effect of rurality on people's lives. It allows for the spread of people and distribution of public services to be taken into account. Data from this sub-domain has already been processed by the Research and Statistics Unit at a parish level. I have used this to calculate diocesan values using a population-weighted average of the parish scores, as shown in Table 4 and Figure 2 overleaf.⁶

Table 4: IMD Geographical Barriers to Services sub-domain by diocese

Diocese	IMD Geog sub-domain	Diocese	IMD Geog sub-domain
Hereford	45.5	St. Albans	22.9
St. Edmundsbury & Ipswich	36.3	Lichfield	22.6
Truro	36.0	Leicester	22.3
Carlisle	33.8	Coventry	21.8
Ely	32.7	Rochester	21.7
Salisbury	32.6	Southwell & Nottingham	21.5
Norwich	32.5	Chester	21.1
Gloucester	32.0	Ripon & Leeds	21.0
Lincoln	31.4	Portsmouth	20.9
Bath & Wells	30.4	Durham	20.1
Exeter	28.5	Wakefield	19.4
Canterbury	28.0	Chelmsford	18.7
Oxford	27.7	Bradford	18.1
Peterborough	27.7	Bristol	18.0
Guildford	27.5	Blackburn	17.9
Worcester	27.2	Sheffield	16.8
York	26.3	Liverpool	16.3
Winchester	26.1	Birmingham	14.9
Chichester	24.9	Manchester	13.7
Derby	23.8	Southwark	11.0
Newcastle	23.5	London	9.0

It can be seen that the most urban dioceses, London, Southwark and Manchester, all have sub-domain scores less than 14, while Hereford has a value of just over 45 and Truro and St. Edmundsbury & Ipswich have scores around 36.

⁵ <https://www.gov.uk/government/collections/english-indices-of-deprivation>. Last accessed 9 June 2014.

⁶ The Diocese of Sodor and Man is not part of the United Kingdom and therefore IMD figures are not available for this diocese.

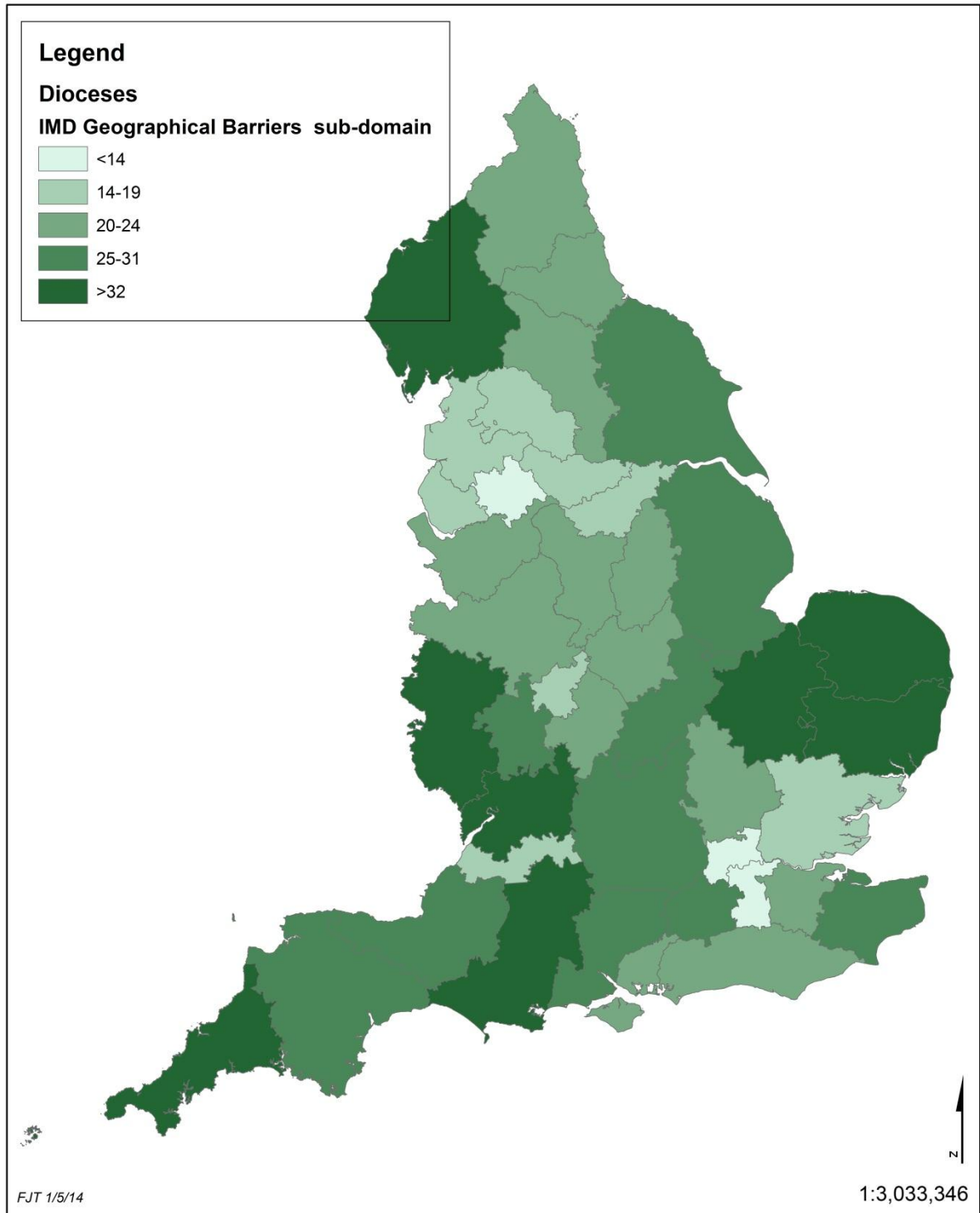


Figure 2: IMD Geographical Barriers to Services sub-domain by diocese

Figure 3 shows a plot of the Geography sub-domain score against the size of benefice within which the average parish falls (abbreviated to “Average size of Church Unit”). It shows that, in general, as the IMD Geography sub-domain score increases, so does the average size of church unit. Thus, as road distances between areas increase, the more churches are amalgamated into a benefice.

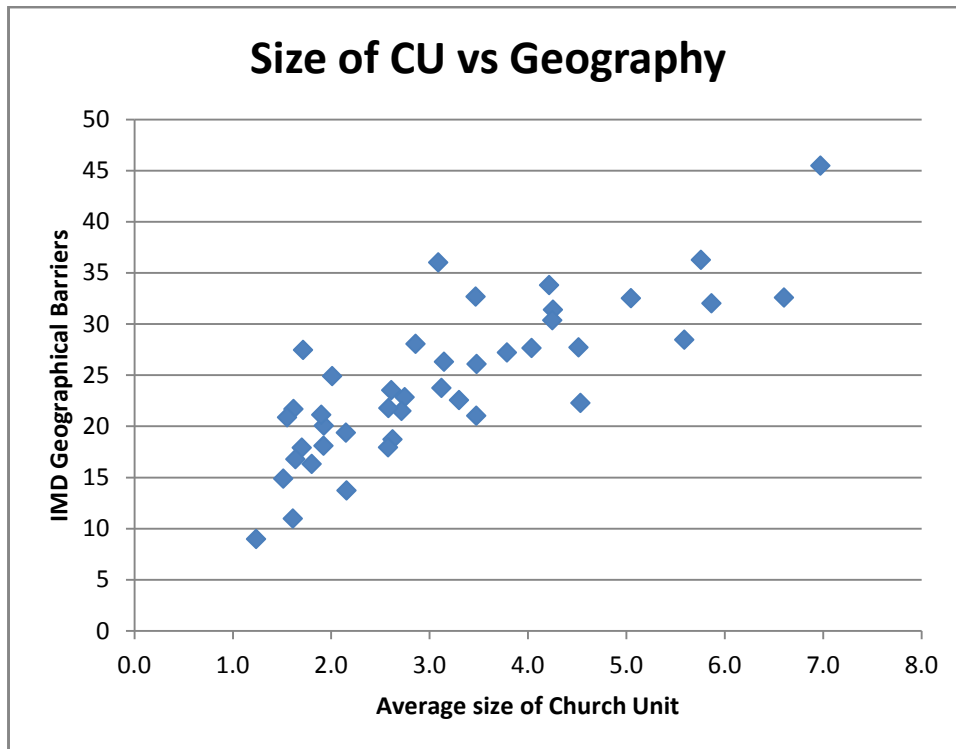


Figure 3: Plot of the number of churches that an average parish has within a benefice against IMD Geographical barriers sub-domain score.

The point at the top right is that of Hereford, while the one in the bottom left represents London.

While there are differences at each level of geography, the overall picture is of a positive correlation between these values. Pearson’s correlation coefficient is found to be 0.80 which, for this number of data points, is significant at the 1% level. R-squared, the proportion of variation in average size of Church Unit explained by the IMD Geography sub-domain, is 63%. That is to say, almost two thirds of the variability in the size of the church unit can be explained by the road distance to services within the diocese.⁷

We have seen that there are major differences in the types of benefice structures deployed by dioceses, which correlates with geographical barriers to services. A single-church-unit is more likely to be located in a more urban diocese and a parish with many amalgamations is more likely to be found in a rural area. If we were to compare the national figures for single-church-units against e.g. MCU(7+) nationally we would be comparing the effects of the locations of these churches as much as their structures. By looking at dioceses which are similar geographically, and comparing the effects of amalgamations within those, we will gain a clearer idea of the effects of amalgamations on attendance, which is our question of interest.

⁷ There is considerably less correlation between the IMD as a whole and benefice structure, $r=-0.493$.

It would be possible to use the IMD Geographical Barriers sub-domain as a covariate in an analysis of covariance, but I feel that using five geographical categories of diocese, with splits as shown in the map legend would make the model easier to explain and understand. Dioceses are therefore allocated a category from “urban” to “remote-rural”, as per the divisions described in Figure 2. The resulting categories are shown in Table 5.

Table 5: Geographical categories of dioceses

Diocese	Geography category	Diocese	Geography category
Bath & Wells	Rural	London	Urban
Birmingham	Mostly urban	Manchester	Urban
Blackburn	Mostly urban	Newcastle	Urban-rural
Bradford	Mostly urban	Norwich	Remote-rural
Bristol	Mostly urban	Oxford	Rural
Canterbury	Rural	Peterborough	Rural
Carlisle	Remote-rural	Portsmouth	Urban-rural
Chelmsford	Mostly urban	Ripon & Leeds	Urban-rural
Chester	Urban-rural	Rochester	Urban-rural
Chichester	Urban-rural	Salisbury	Remote-rural
Coventry	Urban-rural	Sheffield	Mostly urban
Derby	Urban-rural	Sodor & Man ⁸	Mostly urban
Durham	Urban-rural	Southwark	Urban
Ely	Remote-rural	Southwell & Nottingham	Urban-rural
Exeter	Rural	St. Albans	Urban-rural
Gloucester	Remote-rural	St. Edmundsbury & Ipswich	Remote-rural
Guildford	Rural	Truro	Remote-rural
Hereford	Remote-rural	Wakefield	Mostly urban
Leicester	Urban-rural	Winchester	Rural
Lichfield	Urban-rural	Worcester	Rural
Lincoln	Rural	York	Rural
Liverpool	Mostly urban		

The figures for different sizes of amalgamations by diocese category are given below in Figure 4 and Tables 6 and 7. It is clear that different categories of diocese have made different choices with regard to amalgamations. Those in “urban” dioceses have a vast majority of benefices configured as single churches, with a steep decline in percentage points as the numbers of churches increases. The height of the initial point and the steepness of the decline decreases through the next two categories, “mostly-urban” and “urban-rural”. There is a marked change in structure for those dioceses in the two “rural” categories where the modal category is that of multiple church units with 4-6 members, with the most remote areas having a higher percentage of large group amalgamations.

⁸ IMD data is not available for the diocese of Sodor & Man. It was allocated a geographical category based on the similarity of the distribution of its benefice structure to that of the “mostly-urban” category.

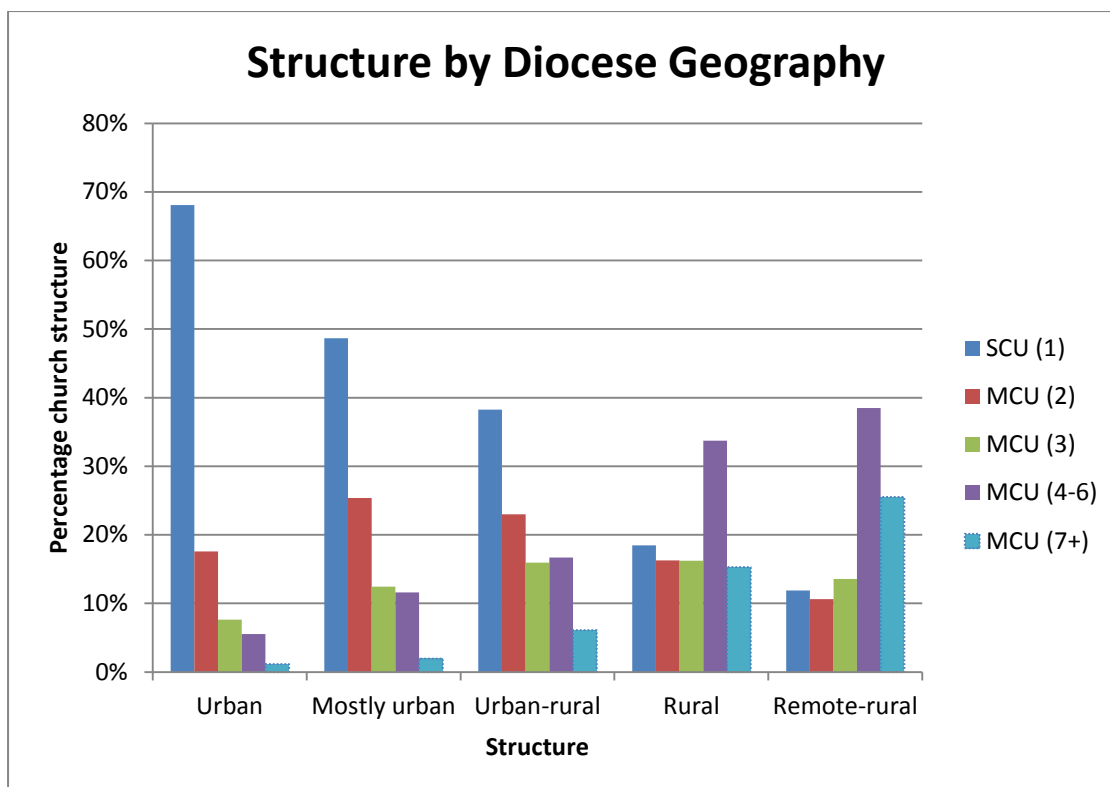


Figure 4: The percentage of each structure by diocese category

Table 6: Numbers of parishes by Geography and Structure

Geography category	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Urban	651	168	73	53	11	956
Mostly urban	805	420	206	192	32	1655
Urban-rural	1246	749	519	544	199	3257
Rural	690	608	606	1259	570	3733
Remote-rural	343	307	392	1112	737	2891
Total	3735	2252	1796	3160	1549	12492

Table 7: Percentage of each structure of parish by Geography category

Geography category	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Urban	68%	18%	8%	6%	1%	100%
Mostly urban	49%	25%	12%	12%	2%	100%
Urban-rural	38%	23%	16%	17%	6%	100%
Rural	18%	16%	16%	34%	15%	100%
Remote-rural	12%	11%	14%	38%	25%	100%

3 Attendance data

In order to provide the Church Growth Research Programme with a set of reports which are consistent in method, this report makes use of the same standardisation technique described in Appendix 2 of Voas and Watt's report.⁹

They note that the measures of attendance are correlated, but all reflect an underlying process, and choose to use the combination of four such measures:

- Adult usual Sunday attendance (Adult uSa),
- Child average Sunday attendance (Child aSa),
- All-age Average attendance (AWA), and
- All-age Easter attendance.¹⁰

There is considerable variation in these measures, and an increase or decrease of one family in a small church would produce large percentage changes that would be almost unnoticed in a larger church. Rather than analysing the data in sections categorised by size, Voas and Watt chose a standardisation technique, detailed below, which allows for comparison across parishes of different size, and across different measures of attendance:

The basic problem is simple: how much numerical change do we need to see in order to be confident that a church is growing or declining? The Church has recognised that even using percentage change (rather than absolute change) to define the thresholds, the values will depend on church size. Small numbers are more volatile than large ones. Voas and Watt, p73.

3.1 Standardisation methodology

Voas and Watt use the concept of one standard deviation as a consistent threshold across all measures and attendance levels. They model the expected standard deviation for each measure and size of attendance. For each measure, this expected standard deviation gives a threshold for growth – a congregation whose percentage increase is higher than this is declared to be “growing”.

Two standardising formulae are given in their report; all four are reported here for completeness. In each case, X represents the attendance figure for a given parish, and Y the percentage threshold for growth.

Adult uSa For $X \leq 10$, $Y = 42 - 2X$ For $10 \leq X \leq 50$, $Y = 23 - X/10$ For $X \geq 50$, $Y = 18$	All-age AWA For $X \leq 30$, $Y = 42$ For $30 \leq X \leq 95$, $Y = 48 - X/5$ For $X \geq 95$, $Y = 29$
Child aSa For $X \leq 10$, $Y = 85 - 4X$ For $10 \leq X \leq 33$, $Y = 51 - 0.6X$ For $X \geq 33$, $Y = 33.6 - 0.073X$	All-age Easter attendance For $X \leq 265$, $Y = 100X^{-0.28}$ For $X \geq 265$, $Y = 21$

⁹ Voas and Watt, Appendix 2, pp73-81.

¹⁰ Voas and Watt, p5.

For example, if the base Child aSa for a parish was 20, the percentage threshold required for the parish to be defined as “growing” would be $Y=51-0.6*20 = 51-12=39\%$. The standardised measure of Child aSa is the actual percentage change divided by the threshold value. For this example, a growth of 10 children, that is a percentage increase of 50%, would lead to a standardised Child aSa of $50/39=1.28$.

As another example, we might consider All-age AWA. How does decline of 45% (that is, an increase of -45%) from a base of 40 attenders compare with decline of 30% from a base of 100 attenders? The formulae above give the thresholds as 40% in the first instance, and 29% in the second. The standardised measures are thus $-45/40=-1.125$ and $-30/29=-1.035$ respectively.

Standardised measures for each of these attendance figures were calculated for each parish for percentage changes between 2001-3 and 2009-11. To avoid extreme values distorting the average, the values were capped at 4 (or -4 for declining churches), and an average of the available measures was used for further analysis. Equivalent figures for 2006-7 to 2010-11 were also calculated. Goodhew et al. cite difficulties with the earlier data and use 5-year data, from 2006-2011. In this report I shall consider both data sets.¹¹

Data from Goodhew et al. relating to the church structures was attached to Voas and Watt’s standardised figures using the 2011 parish codes. The number of parishes in each category is shown in Table 4. The sample sizes here are the total possible returns but it should be noted that the data is not complete, so any analysis will have been carried out on not more than this number of parishes.

The following tables describe the number of churches in each diocese and standardised attendance scores while section 3.3 presents a 3-way classification into “growing”, “stable” and “declining” churches.

Table 8 shows the numbers of parishes in each benefice structure by diocese. The average standardised attendance figures for 2006-2011 and 2001-2011 within each diocese are shown in the following Tables 9 and 10. Here, a parish with a score greater than 1 is said to be “growing”, a parish with a score less than -1 is said to be “declining”. “Stable” parishes have scores in between these numbers. The figures shown are averages across the diocese and will reflect a mixture of growing, stable and declining parishes.

¹¹ Goodhew et al. p51.

Table 8: Numbers of parishes in each benefice structure by diocese

Dioceses	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Bath & Wells	52	74	93	170	76	465
Birmingham	101	28	13	7		149
Blackburn	126	41	26	14		207
Bradford	60	32	19	12		123
Bristol	60	31	35	29	8	163
Canterbury	47	67	69	75		258
Carlisle	38	28	59	87	53	265
Chelmsford	168	117	72	79	16	452
Chester	112	104	39	21		276
Chichester	166	101	62	42		371
Coventry	69	52	26	44	7	198
Derby	73	50	53	46	30	252
Durham	128	67	16	2	15	228
Ely	114	36	33	96	30	309
Exeter	56	66	45	164	157	488
Gloucester	24	40	49	104	89	306
Guildford	84	50	23	6		163
Hereford	21	28	32	120	138	339
Leicester	32	33	48	68	53	234
Lichfield	129	77	79	107	32	424
Lincoln	76	57	97	160	94	484
Liverpool	112	53	18	21		204
London	326	60	17	1		404
Manchester	138	46	33	39	6	262
Newcastle	77	32	28	20	14	171
Norwich	50	45	49	298	119	561
Oxford	108	103	70	190	143	614
Peterborough	48	39	57	156	43	343
Portsmouth	86	37	8	8		139
Ripon & Leeds	52	30	20	46	17	165
Rochester	133	52	16	15		216
Salisbury	31	40	64	157	160	452
Sheffield	102	47	11	14		174
Sodor & Man	14	9	4	1		28
Southwark	187	62	23	13	5	290
Southwell & Nottingham	93	48	45	55	14	255
St.Albans	96	66	79	70	17	328
St.Edmundsbury & Ipswich	29	32	55	189	137	442
Truro	36	58	51	61	11	217
Wakefield	76	71	12	16	8	183
Winchester	84	45	39	92	35	295
Worcester	33	24	41	64	14	176
York	102	83	72	182	8	447
Total	3749	2261	1800	3161	1549	12520

Table 9: Standardised Attendance by Diocese and Structure, 2006-2011

Diocese	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	TOTAL
Bath & Wells	-0.21	-0.29	-0.35	-0.33	-0.44	-0.33
Birmingham	-0.29	-0.15	-0.45	0.25		-0.25
Blackburn	-0.45	-0.57	-0.56	-0.93		-0.51
Bradford	-0.25	-0.46	0.03	-0.66		-0.30
Bristol	-0.26	-0.06	-0.28	-0.09	0.87	-0.14
Canterbury	-0.61	0.23	-0.15	-0.37		-0.20
Carlisle	0.09	-0.04	-0.26	-0.15	-0.23	-0.15
Chelmsford	-0.04	-0.14	-0.22	-0.16	-0.03	-0.11
Chester	-0.22	-0.17	-0.43	0.82		-0.17
Chichester	-0.17	-0.18	-0.06	-0.31		-0.17
Coventry	0.03	0.18	-0.15	0.01	0.31	0.05
Derby	-0.27	-0.08	-0.06	0.18	0.02	-0.08
Durham	-0.15	-0.21	0.08	1.45	-0.34	-0.14
Ely	0.09	-0.07	-0.06	-0.29	-0.29	-0.10
Exeter	-0.20	-0.35	-0.13	-0.08	-0.16	-0.16
Gloucester	-0.28	-0.28	-0.33	-0.27	-0.19	-0.26
Guildford	-0.18	-0.44	-0.35	0.00		-0.28
Hereford	-0.13	-0.06	0.17	-0.10	0.03	-0.02
Leicester	-0.35	-0.18	-0.07	0.03	0.09	-0.06
Lichfield	-0.16	-0.20	-0.26	-0.37	-0.21	-0.24
Lincoln	-0.29	-0.36	-0.20	-0.27	-0.34	-0.28
Liverpool	-0.26	-0.31	-0.36	-0.20		-0.28
London	-0.14	0.02	-0.13	-1.38		-0.11
Manchester	-0.28	-0.40	-0.05	-0.19	0.35	-0.25
Newcastle	-0.27	-0.17	0.23	0.01	0.14	-0.10
Norwich	-0.14	-0.30	-0.19	-0.27	-0.18	-0.24
Oxford	-0.22	-0.21	-0.04	-0.18	-0.10	-0.16
Peterborough	-0.23	-0.41	-0.06	-0.12	-0.12	-0.16
Portsmouth	-0.29	-0.48	-0.44	0.14		-0.33
Ripon & Leeds	-0.20	-0.32	-0.05	-0.05	-0.33	-0.17
Rochester	-0.30	-0.42	0.04	-0.44		-0.31
Salisbury	0.12	-0.53	0.01	-0.18	-0.27	-0.19
Sheffield	-0.12	-0.28	0.24	-0.74		-0.18
Sodor & Man	-0.40	-1.04	-0.88	-0.75		-0.69
Southwark	-0.18	0.02	-0.13	-0.37	-0.70	-0.16
Southwell & Nottingham	-0.23	0.04	-0.20	0.04	-0.27	-0.11
St.Albans	-0.26	-0.41	-0.30	-0.27	0.08	-0.29
St.Edmundsbury & Ipswich	-0.16	-0.19	-0.44	-0.20	-0.21	-0.23
Truro	-0.07	-0.41	-0.34	-0.42	-0.87	-0.35
Wakefield	-0.41	-0.35	-0.33	-0.55	-0.53	-0.40
Winchester	-0.32	-0.07	-0.22	-0.16	0.16	-0.16
Worcester	-0.48	-0.34	-0.32	-0.25	-0.66	-0.35
York	-0.15	-0.25	-0.16	-0.28	-0.62	-0.23
TOTAL	-0.21	-0.23	-0.19	-0.21	-0.17	-0.20

Table 10: Standardised Attendance by diocese and structure, 2001-2011

Diocese	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	TOTAL
Bath & Wells	-0.24	-0.27	-0.23	-0.12	-0.10	-0.17
Birmingham	-0.41	-0.40	-0.26	0.24		-0.36
Blackburn	-0.57	-0.48	-0.73	-0.73		-0.58
Bradford	-0.49	-0.46	-0.19	0.04		-0.38
Bristol	-0.36	-0.34	-0.23	0.19	0.59	-0.18
Canterbury	-0.57	-0.11	-0.20	-0.31		-0.28
Carlisle	-0.19	-0.18	-0.29	-0.02	-0.06	-0.13
Chelmsford	-0.19	0.02	-0.06	0.10	0.31	-0.05
Chester	-0.41	-0.23	-0.17	0.21		-0.26
Chichester	-0.13	-0.28	0.26	-0.48		-0.14
Coventry	0.00	0.07	-0.12	0.04	0.33	0.02
Derby	-0.50	-0.35	-0.09	-0.09	0.26	-0.21
Durham	-0.20	-0.20	0.02	-1.46	0.11	-0.17
Ely	0.20	0.07	-0.15	-0.17	-0.11	0.00
Exeter	-0.45	-0.34	-0.06	0.05	-0.10	-0.12
Gloucester	-0.16	-0.13	-0.17	-0.02	0.02	-0.06
Guildford	-0.14	-0.40	-0.31	0.69		-0.21
Hereford	-0.25	0.22	0.13	0.07	0.10	0.08
Leicester	-0.42	-0.26	0.11	-0.14	0.22	-0.07
Lichfield	-0.39	-0.20	-0.16	-0.16	-0.05	-0.23
Lincoln	-0.24	-0.41	-0.21	-0.07	0.01	-0.15
Liverpool	-0.52	-0.61	-0.64	-0.34		-0.54
London	0.18	0.42	0.58	-1.39		0.23
Manchester	-0.04	-0.11	-0.25	-0.14	0.05	-0.10
Newcastle	-0.16	0.14	0.22	0.39	0.70	0.09
Norwich	-0.36	-0.52	-0.51	-0.33	-0.31	-0.36
Oxford	-0.13	0.04	-0.08	-0.16	-0.24	-0.13
Peterborough	-0.34	-0.40	-0.14	-0.11	-0.11	-0.18
Portsmouth	-0.37	-0.80	-0.31	0.29		-0.45
Ripon & Leeds	-0.36	-0.39	-0.14	-0.22	-0.64	-0.33
Rochester	-0.28	-0.41	0.12	-0.68		-0.31
Salisbury	0.09	-0.31	-0.17	-0.29	-0.27	-0.24
Sheffield	-0.40	-0.44	-0.20	-0.66		-0.42
Sodor & Man	-0.58	-0.64	0.65	-1.15		-0.49
Southwark	0.00	0.09	0.04	-0.08	-0.03	0.02
Southwell & Nottingham	-0.21	0.01	-0.14	-0.09	0.37	-0.10
St.Albans	-0.28	-0.37	-0.03	-0.26	-0.03	-0.22
St.Edmundsbury & Ipswich	-0.12	-0.28	-0.34	-0.18	-0.36	-0.26
Truro	-0.29	-0.57	-0.18	-0.26	-0.06	-0.31
Wakefield	-0.46	-0.49	0.12	-0.13	-0.50	-0.40
Winchester	-0.23	-0.36	-0.07	-0.18	0.32	-0.15
Worcester	-0.80	-0.66	-0.27	-0.23	-0.48	-0.43
York	-0.23	-0.40	-0.18	-0.06	0.92	-0.16
Total	-0.23	-0.25	-0.14	-0.14	-0.09	-0.18

3.2 Standardised attendance data

From Tables 9 and 10 above, it is clear that there are many differences between dioceses and between structures as to the effect on standardised attendance. In order to make them clearer, summary tables and graphs by geography category are shown below in Table 11 and Figure 5 for 2006-2011 data, and Table 12 and Figure 6 for 2001-2011 data.

Table 11: Standardised Attendance by Geography category, 2006-2011

Average of 5yr change						
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	TOTAL
Urban	-0.18	-0.09	-0.10	-0.27	-0.23	-0.17
Mostly urban	-0.24	-0.30	-0.26	-0.26	0.02	-0.25
Urban-rural	-0.22	-0.20	-0.16	-0.12	-0.04	-0.18
Rural	-0.26	-0.24	-0.20	-0.21	-0.21	-0.22
Remote-rural	-0.02	-0.25	-0.22	-0.24	-0.18	-0.19
Total	-0.21	-0.23	-0.19	-0.21	-0.17	-0.21

The table above and graph below show the differences in attendance change between 2006 and 2011 for the difference categories of diocese. “Urban-rural” parishes show less decrease in standardised attendance as the number of churches in the unit rises, while “urban” parishes seem to do best with two or three units in the amalgamation. “Mostly-urban” parishes show most decline, apart from the 7+ amalgamation category, although this includes only 32 parishes. In “rural” areas there is little difference between the different structures, while “remote-rural” parishes (light blue) in single church units are doing considerably better than amalgamations in the same area.

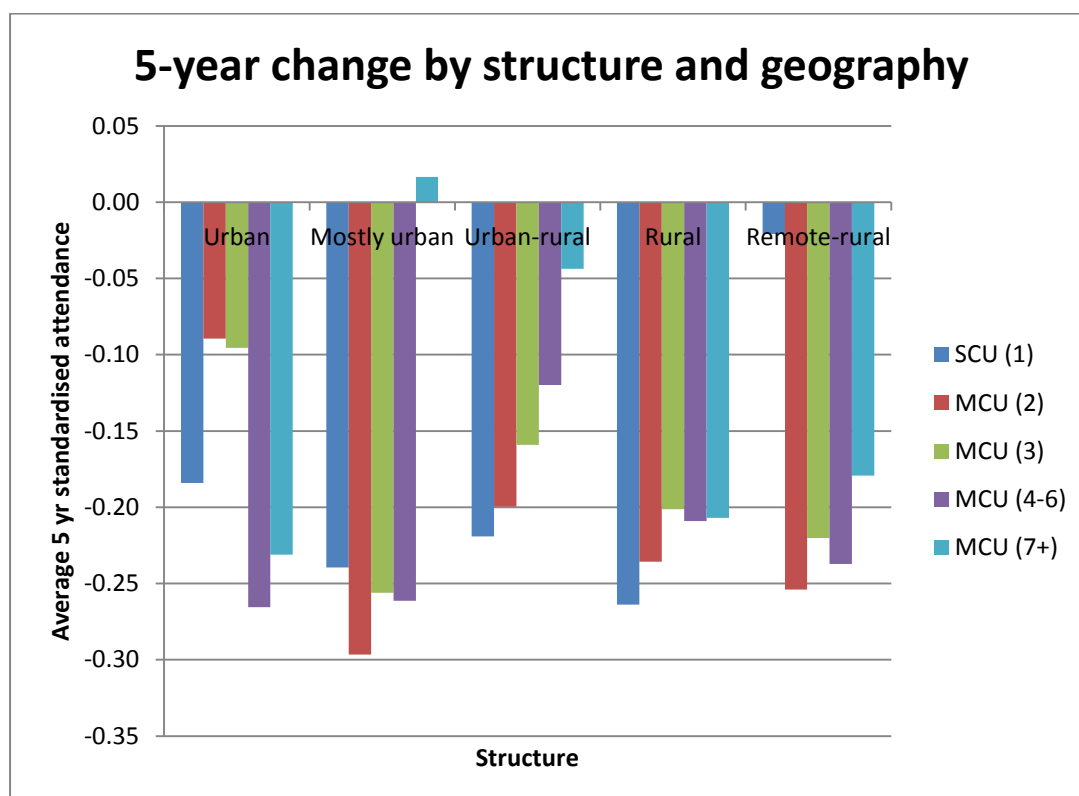


Figure 5: 5-year change by structure and geography

Table 12: Standardised Attendance by Geography category, 2001-2011

Average of 10yr change						
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Urban	0.11	0.14	0.03	-0.06	0.16	0.10
Mostly urban	-0.40	-0.31	-0.19	-0.06	0.18	-0.30
Urban-rural	-0.28	-0.26	-0.04	-0.14	0.17	-0.19
Rural	-0.28	-0.28	-0.19	-0.11	-0.08	-0.18
Remote-rural	-0.07	-0.26	-0.21	-0.19	-0.16	-0.18
Total	-0.22	-0.24	-0.14	-0.14	-0.08	-0.17

The ten-year figures in Table 12 above and Figure 6 below show a general reduction in decrease in average standardised attendance as the number of church units in the amalgamation increases. Parishes in “urban” areas show a decrease at 4-6 church units, but are otherwise fairly stable in showing an increase, and “remote-rural” dioceses have stronger single-church figures, then drop at 2 church units before reducing in decline slightly across the other structures.

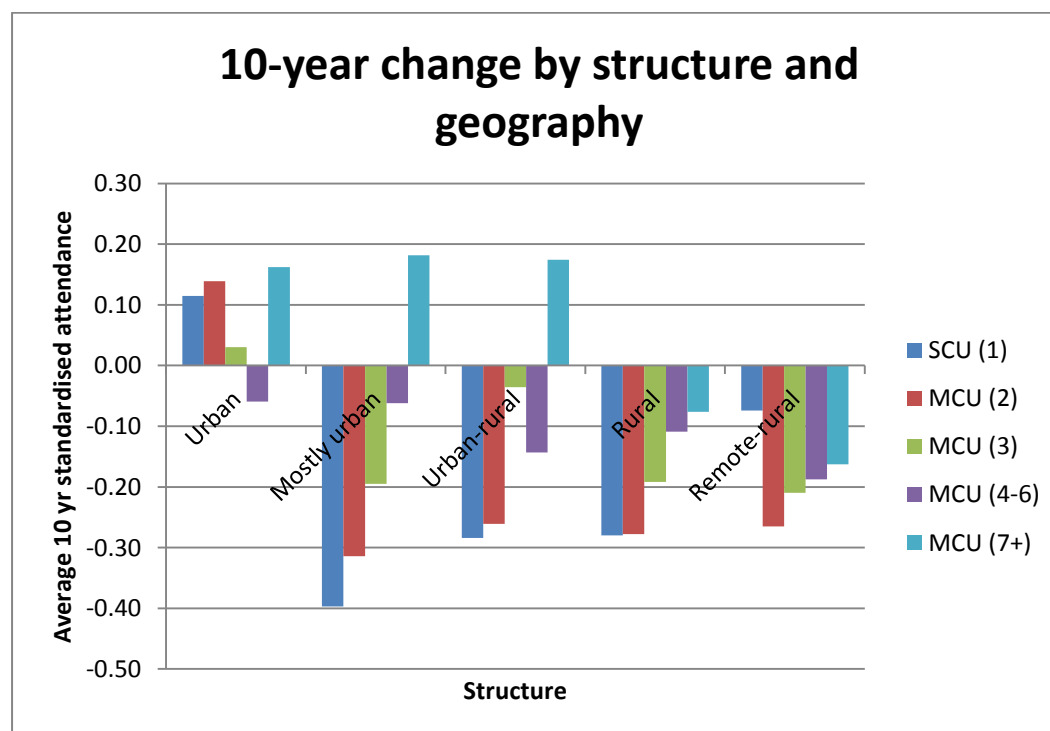


Figure 6: 10-year change by structure and geography

3.3 Growing churches

The figures presented in the section above concern the standardised average attendance scores across structures and dioceses. They do not illustrate the number of parishes which are growing, stable or declining in each case. The tables below address this, detailing the numbers of structures growing over 5 years, (2006-2011) and 10 years (2001-2011).

In this section, a “growing” parish is one where the standardised attendance score is greater than 1, a “stable” parish has a score between -1 and 1, and a “declining” parish has a score which is less than -1.

Across all dioceses, the percentages of parishes that are growing, stable or declining in the different structures are shown in Table 13 for 5-year and Table 14 for 10-year data.

Table 13: 5-year changes, % of each structure classified as growth/stability/decline

5-year changes					
	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	9.27%	8.86%	9.00%	10.01%	9.92%
Stability	74.77%	74.54%	75.35%	73.49%	75.68%
Decline	15.96%	16.60%	15.64%	16.49%	14.39%

Table 14: 10-year changes, % of each structure classified as growth/stability/decline

10-year changes					
	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	12.61%	12.07%	12.96%	12.78%	15.00%
Stability	64.86%	64.00%	68.14%	69.15%	69.47%
Decline	22.52%	23.93%	18.90%	18.08%	15.53%

From Table 13, we can see that with the 5-year figures, no matter what structure is in place, around 75% of parishes are stable on this metric. Around 15-16% are declining, and approximately 9-10% are growing.

Table 14 shows the equivalent for the 10-year time span data. Again, there is strong similarity across the different structures, with around 65-70% remaining stable, with 20% decline and 12% growth for most structures. The final category, MCU(7+) has comparatively more growing and fewer declining parishes, 15% of each.

We had seen considerable differences between dioceses, the following tables illustrate the differences between geographical classifications, structures, and changes in attendance.

Table 15: 5-year data, %s of each Geography/structure combination, classified as growth, stability or decline

5-year changes	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	10.34%	13.29%	11.94%	12.50%	11.11%
Mostly-urban	8.69%	6.75%	7.82%	7.83%	13.79%
Urban-rural	7.91%	10.00%	9.71%	11.04%	13.04%
Rural	9.00%	7.78%	7.50%	10.47%	7.84%
Remote-rural	13.91%	8.81%	10.48%	9.24%	10.53%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	71.53%	70.89%	71.64%	62.50%	66.67%
Mostly-urban	73.52%	76.36%	73.18%	74.10%	72.41%
Urban-rural	77.21%	75.32%	77.48%	74.68%	73.29%
Rural	75.29%	74.81%	77.67%	72.95%	79.79%
Remote-rural	74.50%	71.65%	70.66%	73.99%	73.43%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	18.14%	15.82%	16.42%	25.00%	22.22%
Mostly-urban	17.79%	16.88%	18.99%	18.07%	13.79%
Urban-rural	14.88%	14.68%	12.80%	14.29%	13.66%
Rural	15.71%	17.41%	14.82%	16.58%	12.37%
Remote-rural	11.59%	19.54%	18.86%	16.77%	16.04%

Table 15 shows the split across Geography categories. Each cell shows the percentage of parishes in that structure/geography that is a) growing, b) remaining stable, c) declining, e.g. 10.34% of SCU(1) churches in “urban” areas are growing, while 18.14% are declining.

Table 16: 10 year data, %s of each Geography/structure combination classified as growth, stability or decline

10-year changes	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	21.02%	20.89%	19.40%	18.75%	33.33%
Mostly-urban	7.59%	10.65%	13.97%	15.66%	24.14%
Urban-rural	11.58%	12.58%	15.23%	12.12%	21.12%
Rural	10.97%	10.37%	11.63%	13.30%	15.46%
Remote-rural	15.23%	11.11%	10.18%	11.68%	12.42%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	63.90%	58.23%	59.70%	60.42%	66.67%
Mostly-urban	65.10%	67.01%	63.13%	66.27%	68.97%
Urban-rural	64.78%	62.26%	68.87%	70.35%	70.81%
Rural	65.14%	63.70%	68.67%	68.21%	69.28%
Remote-rural	65.89%	67.82%	70.66%	70.59%	69.34%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	15.08%	20.89%	20.90%	20.83%	0.00%
Mostly-urban	27.31%	22.34%	22.91%	18.07%	6.90%
Urban-rural	23.63%	25.16%	15.89%	17.53%	8.07%
Rural	23.90%	25.93%	19.70%	18.49%	15.26%
Remote-rural	18.87%	21.07%	19.16%	17.73%	18.24%

Table 16 shows the 10-year data on the same basis, that is that 21% of parishes in SCU(1)s in “urban” dioceses have grown between 2001 and 2011, 64% have remained stable, and 15% declined. SCU(1) parishes in other Geography structures are more likely to be declining, from 19% in “remote-rural” dioceses to 27% in “mostly-urban” ones.

All of these tables concern the standardised attendance score used by Voas and Watt. Equivalent tables for individual measures of attendance are given in Appendix I.

4 Statistical analysis

In this report so far we have described the changes in attendance pattern for different Geographical categories and benefice structures. We now move to investigate if there are statistically significant differences between the benefice structures and Geographical categories. To compare the differences in averages of sets of data, taking into account two factors, we make use of 2-way analysis of variance (ANOVA).¹² To employ this procedure, we must ensure that the data is roughly Normally distributed and that the variance of each group is not very different. Boxplots of the data were inspected and these assumptions were found to be valid.

- For the 10-year data it was found that there is a significant effect of Geography ($p < 2.2 \times 10^{-16}$) and of Benefice Structure ($p = 2.4 \times 10^{-9}$). There is also a significant interaction effect ($p = 9.3 \times 10^{-5}$) which indicates that the effect of Benefice Structure on standardised attendance differs by the Geography category. To check for the effect of collinearity on the analysis, the model was recalculated with these terms entered into the model in the opposite way, but little difference was found.
- With the 5-year data the *F*-statistics were greater with the effect of Geography just being significant at $p = 0.042$, while the effect of Benefice Structure alone was not significant at $p = 0.44$. As above, there was a significant interaction term with $p = 0.037$.

It is impossible to consider national averages for the changes in attendance as the effects of geography are very different as illustrated in the graphs above and the significance of the interaction term. As we are interested here in the changes between Benefice Structures, rather than in Geography level, I will next examine the results from one-way analyses of variance at each level of the Geography category.

Boxplots for the data were examined visually and the assumptions underlying ANOVA were found to be valid. In each the variability in the data is considerable when compared to differences in the average standardised attendance.

Table 17 below gives the significance of *F*-statistics from 1-way ANOVA for the different years and Geography categories. Those that indicate a significant difference are highlighted in blue. Removing the Diocese of London from the “urban” category had little effect on the *p*-values ($p = 0.89$ at ten years, $p = 0.88$ at five).

Table 17: *p*-values from 1-way ANOVAs

Category	5 years	10 years
Urban	$p = 0.75$	$p = 0.85$
Mostly urban	$p = 0.43$	$p = 0.00012$
Urban-rural	$p = 0.07$	$p < 0.00001$
Rural	$p = 0.71$	$p = 0.00042$
Remote-rural	$p = 0.0071$	$p = 0.22$

¹² In order to analyse the data in more detail it was prepared for transfer into the statistics program, *R*.

It can be seen that, at the 5-year level, only the most “remote-rural” dioceses show a significant difference in standardised attendance. At the 10-year stage it is the central categories which show significant differences, particularly in the case of the middle, “urban-rural” diocese category. At neither timescale do “urban” dioceses show any evidence of benefice size significantly affecting standardised attendance figures.

To identify the nature of the significant differences reported here, I will carry out t-tests between the means of the SCU(1) data and MCU(7+) data at the appropriate levels of geography. By making use of the analyses of variance, and deciding *a priori* which tests to carry out, we avoid issues around multiple comparisons.

Considering firstly the 5-year data displayed in Figure 5, only the “remote-rural” dioceses had significant results. There are significant differences between SCU(1) (average -0.02) and each of the amalgamation categories,

- MCU(2) - $p=0.020$; average -0.25;
- MCU(3) - $p=0.0007$; average -0.22;
- MCU(4-6) - $p=0.008$; average -0.24;
- MCU(7+) - $p=0.004$; average -0.18.

At the 5-year level, single church parishes in “remote-rural” dioceses have significantly better attendance than amalgamated parishes, but there is no difference in attendance between different levels of amalgamation. This is likely to reflect the relatively small number of SCU(1)s present in remote rural dioceses and illustrate the difference between larger population centres where SCU(1) parishes are generally found, and the sparsely populated rural hinterland where parishes are more likely to be in a MCU.

Turning to the 10-year data illustrated in Figure 6, for “mostly urban” dioceses there are significant differences between SCU(1) (average=-0.4) and

- MCU(3) - $p=0.037$; average -0.19;
- MCU(4-6) - $p<0.001$; average -0.06;
- MCU(7+) - $p=0.002$; average 0.18.

For these dioceses, single church units show the greatest decline and the more church units in an amalgamation, the greater the growth.

Next, examining the “urban-rural” dioceses, there are significant differences between SCU(1) (average =-0.28) and

- MCU(3) - $p<0.0001$; average -0.04;
- MCU(4-6) - $p=0.01$; average -0.14;
- MCU(7+) - $p<0.0001$; average 0.17.

For these dioceses, the single church units are again showing the greatest decline and church units with generally higher number of parishes show growth, or less decline. The pattern is less straightforward than other categories as parishes in MCU(3) benefice structures have less decline than those in MCU(4-6) structures.

Finally for 10-year “rural” diocese data, there are significant differences between SCU(1) (average = -0.28) and

- MCU(7+), $p=0.0014$; average -0.08;
- MCU(4-6), $p=0.0013$; average -0.11.

While all of the benefice categories in “rural” dioceses decline, those with the highest number of churches decline the least.

The statistical analysis indicates that there are significant differences between how benefice structures affect attendance at different levels of geography:

- There are no significant differences in attendance across benefice structures in “urban” dioceses,
- In “remote-rural” dioceses, parishes in single-church units have significantly better change in attendance than amalgamated benefices, using 5-year figures.
- In “mostly urban”, “urban-rural” and “rural” dioceses, the change in attendance over 10 years is significantly better for parishes in benefices with more amalgamations.

5 Team Ministries and Growth

Goodhew et al. provide an excellent summary of the history and background to Team Ministries.¹³ They note the differences in use of team ministries across England and the recent policies of dioceses, some of which have actively disbanded teams while others have increased their use. They also note that many teams have no team vicar in place and are operating as amalgamations, although they acknowledge that many amalgamations are also short-staffed (p97).

Goodhew et al. have provided an excellent data set for this analysis, having cleaned the data by checking on the present status of all of the places coded as “Team” in the national databases. This ensured that only the legally-defined Team Ministries that were currently actively operating as Team Ministries were included in the data. Others which were defunct or had been disbanded were excluded.

5.1 Distribution of Team Ministries

The use of team ministries varies widely across England. Figure 9 overleaf maps the percentage of Team Ministries in each diocese. Figure 8 below illustrates these percentages by Geographical category. In contrast to benefice structure, there is no significant association between Geographical category (“urban” =1, ..., “remote-rural”=5) and the use of Team Ministries ($r=0.28$). Single church units, i.e. SCU(1)’s are included in these data.

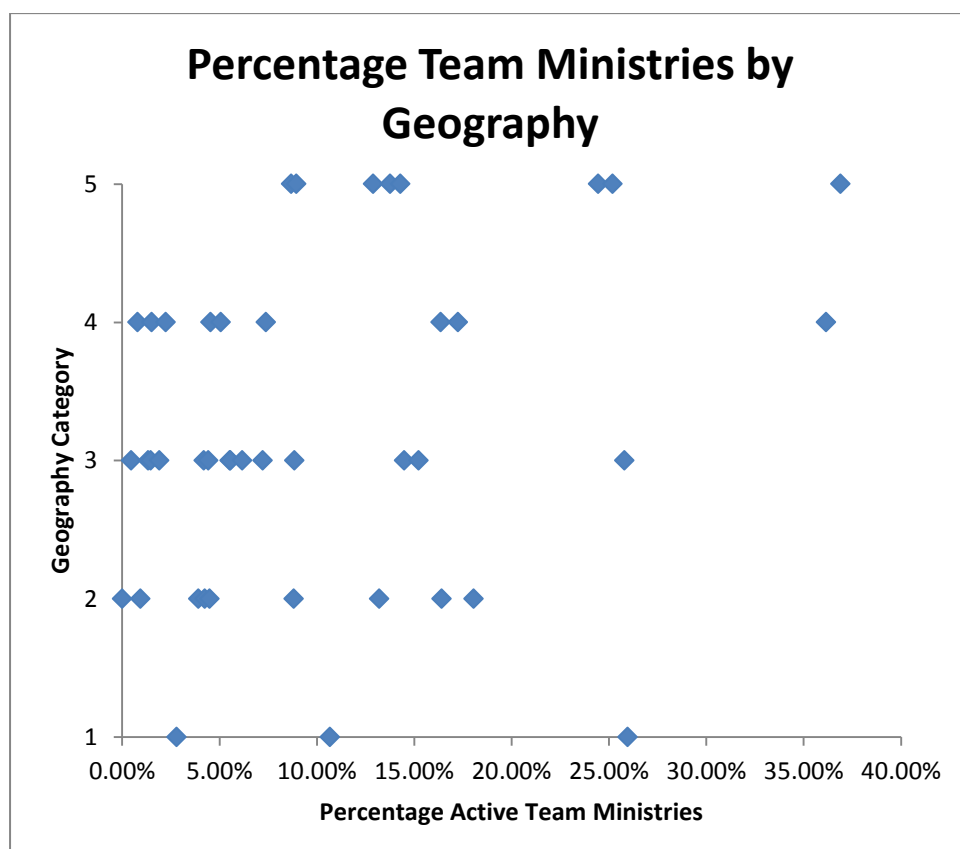


Figure 8: Team Ministry Percentage by Geography Category

¹³ Goodhew et al. pp93-97.

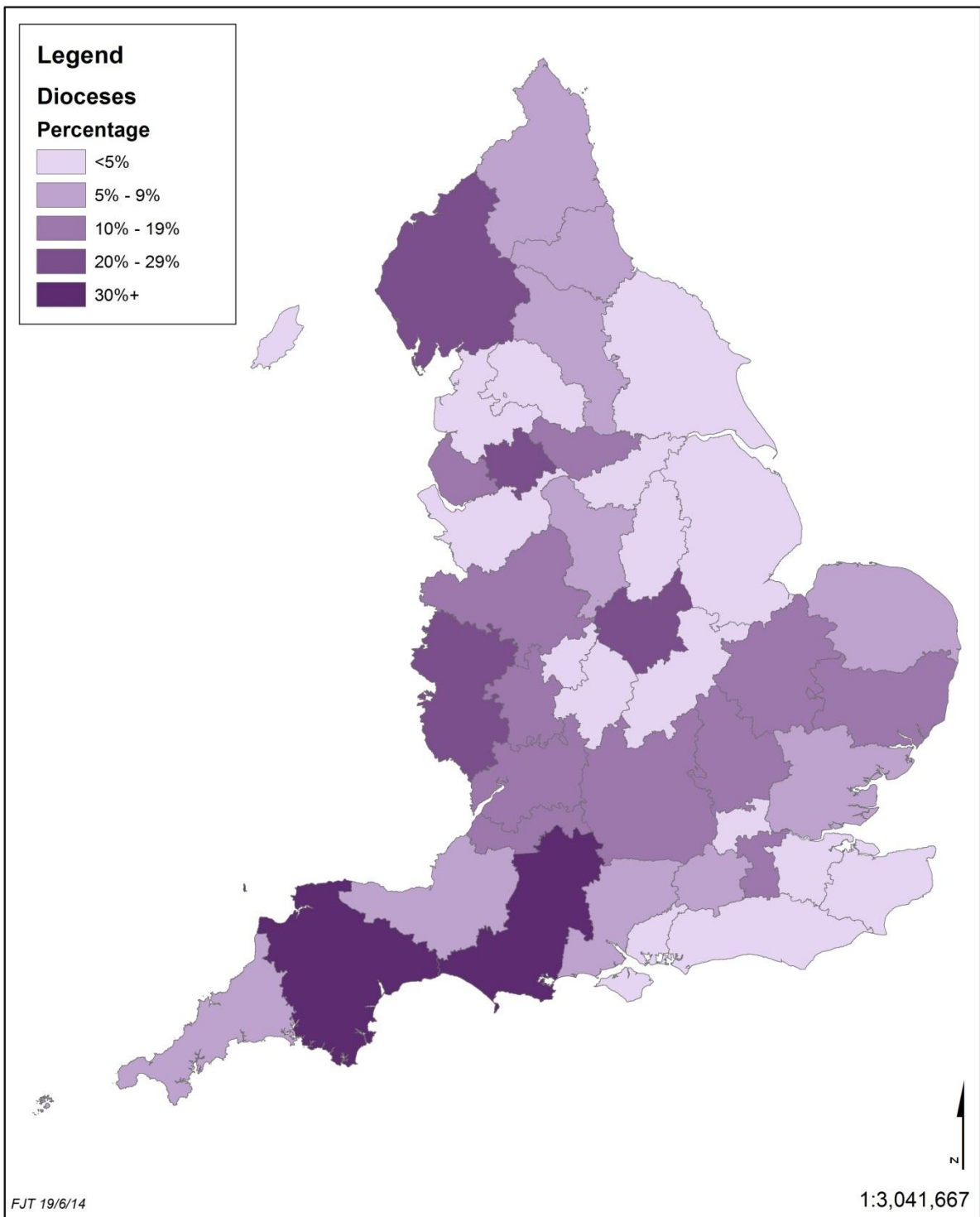


Figure 9: Percentage of Team Ministries by Diocese

Table 18: Team Ministry figures by Diocese

Dioceses	Active TM	Total	% TM	Active 5 yr	Not TM 5 yr	Diff 5 yr	Active 10 yr	Not TM 10 yr	Diff 10 yr
Bath & Wells	32	433	7.4%	-0.42	-0.18	0.23	-0.46	-0.32	0.15
Birmingham	5	128	3.9%	-0.60	-0.31	0.28	0.35	-0.30	-0.65
Blackburn	7	165	4.2%	-0.70	-0.56	0.14	-0.42	-0.52	-0.10
Bradford	1	106	0.9%	1.46	-0.40	-1.87	-0.15	-0.29	-0.14
Bristol	24	133	18.1%	0.01	-0.15	-0.17	-0.04	-0.18	-0.14
Canterbury	2	252	0.8%	-0.15	-0.28	-0.13	-0.18	-0.20	-0.02
Carlisle	56	229	24.5%	-0.14	-0.11	0.03	-0.25	-0.10	0.15
Chelmsford	38	431	8.8%	0.51	-0.10	-0.61	0.11	-0.13	-0.25
Chester	1	219	0.5%	-1.18	-0.24	0.94	-0.41	-0.17	0.24
Chichester	13	310	4.2%	-0.52	-0.15	0.36	-0.10	-0.20	-0.10
Coventry	7	158	4.4%	-0.14	0.01	0.15	0.69	0.02	-0.67
Derby	14	194	7.2%	0.37	-0.23	-0.59	-0.06	-0.08	-0.02
Durham	7	126	5.6%	-0.58	-0.16	0.43	-0.62	-0.14	0.48
Ely	34	247	13.8%	-0.21	0.03	0.24	-0.31	-0.06	0.26
Exeter	167	462	36.2%	-0.18	-0.10	0.08	-0.20	-0.15	0.05
Gloucester	37	287	12.9%	0.20	-0.10	-0.29	-0.01	-0.30	-0.30
Guildford	10	162	6.2%	-0.24	-0.20	0.03	-0.20	-0.28	-0.08
Hereford	67	266	25.2%	-0.13	0.13	0.26	-0.02	-0.03	-0.01
Leicester	49	190	25.8%	-0.04	-0.10	-0.06	0.01	-0.08	-0.08
Lichfield	60	414	14.5%	0.02	-0.27	-0.29	-0.28	-0.23	0.05
Lincoln	6	397	1.5%	-0.99	-0.15	0.84	-0.51	-0.31	0.20
Liverpool	32	195	16.4%	-0.47	-0.55	-0.08	-0.23	-0.29	-0.06
London	10	358	2.8%	0.08	0.28	0.20	-0.64	-0.10	0.54
Manchester	61	235	26.0%	-0.03	-0.07	-0.04	-0.20	-0.27	-0.07
Newcastle	13	147	8.8%	0.54	0.06	-0.47	0.02	-0.12	-0.13
Norwich	42	484	8.7%	-0.69	-0.30	0.40	-0.24	-0.24	0.00
Oxford	79	458	17.3%	-0.11	-0.13	-0.02	-0.04	-0.18	-0.14
Peterborough	13	286	4.6%	-0.03	-0.21	-0.18	-0.36	-0.15	0.21
Portsmouth	2	136	1.5%	-1.01	-0.44	0.57	-0.36	-0.33	0.04
Ripon & Leeds	8	145	5.5%	0.00	-0.32	-0.32	0.13	-0.21	-0.33
Rochester	4	210	1.9%	0.55	-0.33	-0.88	-0.05	-0.32	-0.27
Salisbury	135	366	36.9%	-0.31	-0.22	0.09	-0.22	-0.18	0.04
Sheffield	7	156	4.5%	-0.43	-0.43	0.00	0.14	-0.21	-0.35
Southwark	30	281	10.7%	0.07	0.01	-0.07	-0.16	-0.16	0.01
S'well & Nott'ham	3	224	1.3%	-0.79	-0.07	0.72	0.37	-0.12	-0.49
St.Albans	42	276	15.2%	-0.37	-0.23	0.14	-0.29	-0.28	0.01
St.E'bury & Ipswich	58	406	14.3%	-0.48	-0.20	0.28	-0.26	-0.22	0.04
Truro	17	190	9.0%	-0.82	-0.28	0.54	-0.66	-0.32	0.34
Wakefield	19	144	13.2%	-0.33	-0.38	-0.04	-0.48	-0.40	0.08
Winchester	13	257	5.1%	0.13	-0.12	-0.25	0.42	-0.20	-0.62
Worcester	26	159	16.4%	-0.50	-0.43	0.07	-0.57	-0.29	0.28
York	9	403	2.2%	-0.90	-0.10	0.80	-0.63	-0.20	0.44
Total	1260	10847	11.6%	-0.19	-0.17	0.02	-0.19	-0.21	-0.02

Table 18 above details the percentage of Team Ministries per diocese (left-blue), with the standardised attendance scores for 2006-2011 (centre- purple) and 2001-2011 (right – green) shown for Team Ministries and non-Team Ministries. From the figures and table above it seems clear that Geography is not a major factor in a diocese’s use of Team Ministries. For example, Manchester, an “urban” diocese, has 26% of its parishes in Team Ministries, while Norwich, a “remote-rural” diocese, has only 8.7% of its parishes in Teams.

Consideration of the plots of the difference between average standardised scores for Team and non-Team ministries (Figures 10 and 11) indicates that there is not likely to be a significant difference. The data is spread evenly on both sides of zero. In Figure 10, the data point at -1.87 is recorded for Bradford where there is a single Team Ministry which has declined over the 5 year period. *t*-tests within each diocese with more than 10% of its parishes in Team structures show no significant difference at 5 year or 10 year time periods between Team Ministries and parishes not in a Team Ministry, bar that of Ely at 5 years difference ($p=0.026$) where there is a significant improvement in not being in a Team Ministry.

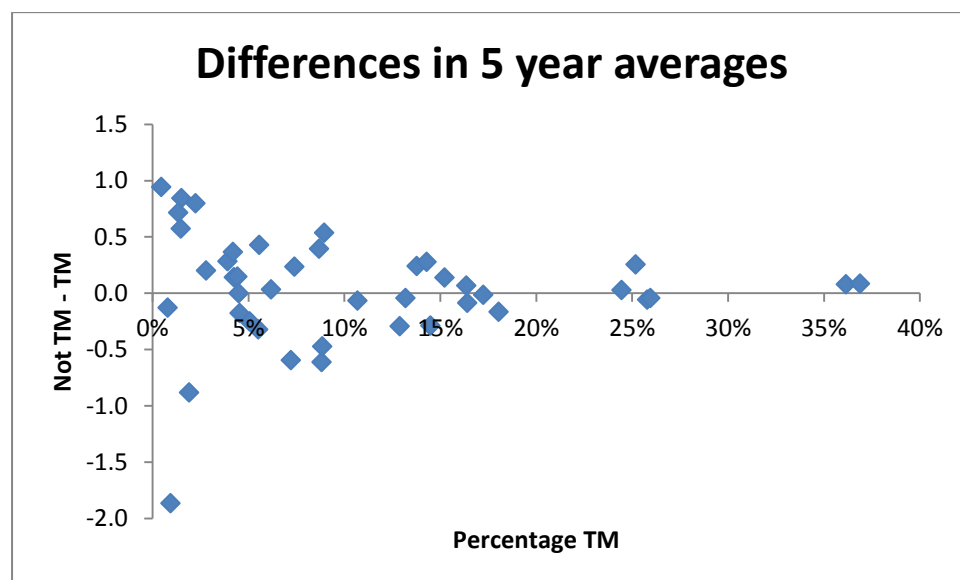


Figure 10: 2006-2011 differences between Team and non-Team Ministries

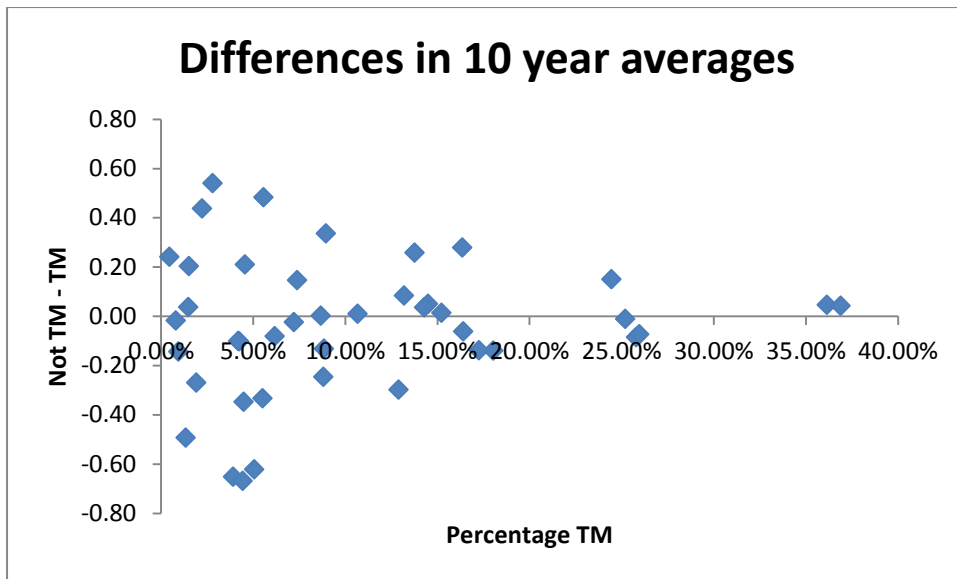


Figure 11: 2001-2011 differences between Team and non-Team Ministries

5.3 Excluding SCU(1)s

It may be more appropriate to ask, **given that an amalgamation has taken place**, how do parishes in Team Ministries compare with those which are not in Team Ministries? This involves removing the benefices with a single church in a single parish, that is those classified as SCU(1). The following two figures, 12 and 13, give the differences between non-TM and TM amalgamated standardised attendance figures. Table 19 gives the numerical data.

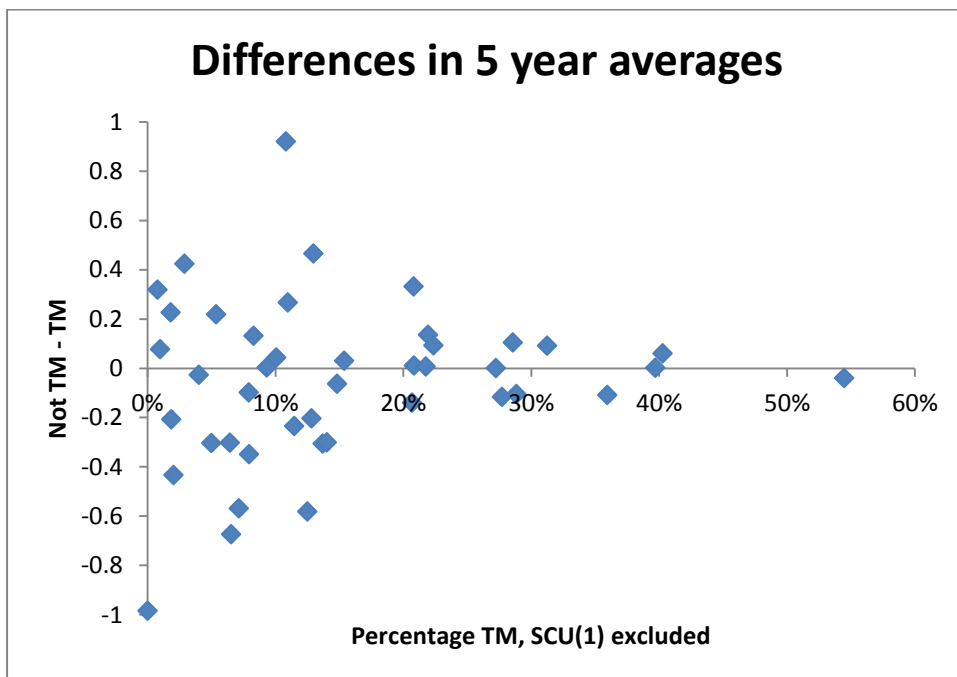


Figure 12: 2006-2011 differences between Team and non-Team Ministries; SCU(1) excluded

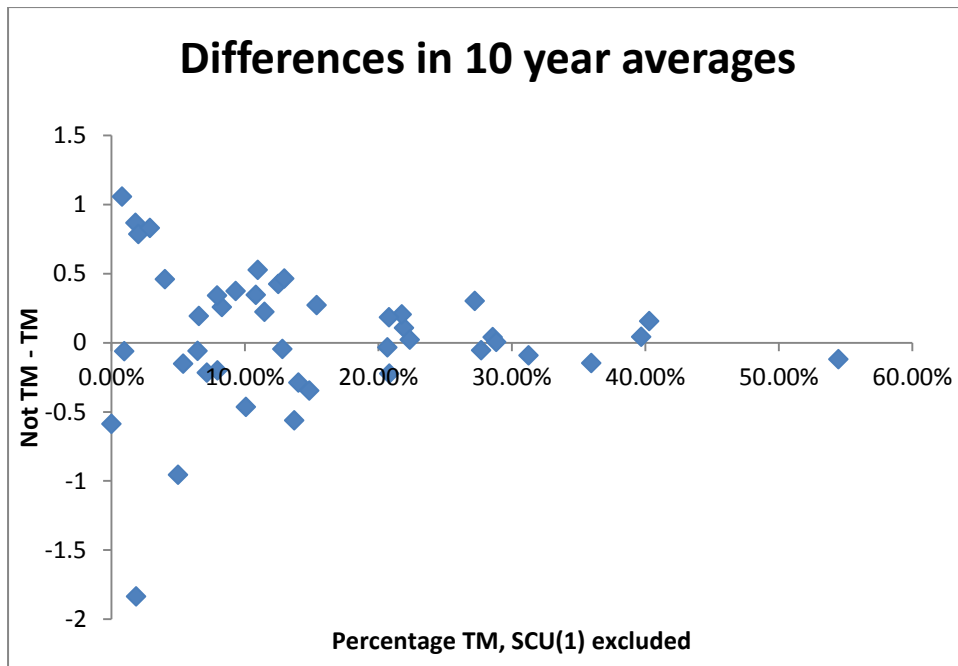


Figure 13: 2001-2011 differences between Team and non-Team Ministries; SCU(1) excluded

Again there is a spread of values around a difference of 0. Those with a smaller number of Team Ministries show a larger degree of variation in scores which is to be expected, and there is no significant difference in scores. Testing at 5 and 10 years for differences between parishes in Team and non-Team situations again showed no significant differences within dioceses with the exception of 5-year Ely data, where those parishes in team ministries did significantly worse than parishes who were not listed as “Active”.

Table 19: Team Ministry figures by Diocese; SCU(1) excluded

Dioceses	Active Teams	Total, ex SCU(1)	% TM	Active 5yr	Not TM 5 yr	Diff 5yr	Active 10yr	Not TM 10yr	Diff 10yr
Bath & Wells	32	386	8.3%	-0.46	-0.33	0.13	-0.42	-0.16	0.26
Birmingham	5	40	12.5%	0.35	-0.23	-0.58	-0.60	-0.17	0.42
Blackburn	7	61	11.5%	-0.42	-0.65	-0.24	-0.70	-0.48	0.22
Bradford	1	54	1.9%	-0.15	-0.35	-0.21	1.46	-0.37	-1.84
Bristol	23	83	27.7%	0.00	-0.12	-0.12	0.04	-0.02	-0.05
Canterbury	2	205	1.0%	-0.18	-0.11	0.08	-0.15	-0.21	-0.06
Carlisle	56	196	28.6%	-0.25	-0.15	0.10	-0.14	-0.10	0.04
Chelmsford	37	270	13.7%	0.11	-0.20	-0.31	0.52	-0.04	-0.56
Chester	1	126	0.8%	-0.41	-0.10	0.32	-1.18	-0.12	1.06
Chichester	13	164	7.9%	-0.10	-0.19	-0.10	-0.52	-0.18	0.34
Coventry	7	107	6.5%	0.69	0.02	-0.67	-0.14	0.05	0.19
Derby	14	139	10.1%	-0.06	-0.02	0.04	0.37	-0.10	-0.47
Durham	7	54	13.0%	-0.62	-0.16	0.46	-0.58	-0.12	0.46
Ely	34	155	21.9%	-0.31	-0.18	0.14	-0.21	-0.10	0.11
Exeter	166	412	40.3%	-0.20	-0.14	0.06	-0.19	-0.03	0.16
Gloucester	37	264	14.0%	-0.01	-0.31	-0.30	0.20	-0.09	-0.29
Guildford	10	78	12.8%	-0.20	-0.40	-0.20	-0.24	-0.28	-0.05
Hereford	67	246	27.2%	-0.02	-0.02	0.00	-0.13	0.17	0.30
Leicester	47	163	28.8%	0.07	-0.04	-0.11	-0.03	-0.02	0.01
Lichfield	60	288	20.8%	-0.28	-0.27	0.01	0.02	-0.20	-0.22
Lincoln	6	331	1.8%	-0.51	-0.28	0.23	-0.99	-0.13	0.87
Liverpool	32	89	36.0%	-0.23	-0.33	-0.11	-0.47	-0.61	-0.15
London	8	74	10.8%	-0.84	0.08	0.92	0.11	0.45	0.35
Manchester	61	112	54.5%	-0.20	-0.24	-0.04	-0.03	-0.15	-0.12
Newcastle	12	81	14.8%	0.08	0.02	-0.06	0.60	0.25	-0.35
Norwich	41	440	9.3%	-0.25	-0.25	0.00	-0.66	-0.29	0.37
Oxford	78	377	20.7%	-0.03	-0.17	-0.14	-0.12	-0.16	-0.04
Peterborough	13	242	5.4%	-0.36	-0.14	0.22	-0.03	-0.18	-0.15
Portsmouth	2	50	4.0%	-0.36	-0.39	-0.03	-1.01	-0.55	0.46
Ripon & Leeds	6	93	6.5%	0.10	-0.20	-0.30	-0.22	-0.28	-0.06
Rochester	4	80	5.0%	-0.05	-0.35	-0.30	0.55	-0.40	-0.96
Salisbury	135	340	39.7%	-0.22	-0.22	0.00	-0.31	-0.27	0.04
Sheffield	5	63	7.9%	0.05	-0.30	-0.35	-0.29	-0.49	-0.20
Sodor & Man		11	0.0%		-0.98	-0.98		-0.59	-0.59
Southwark	30	96	31.3%	-0.16	-0.07	0.09	0.07	-0.02	-0.09
S'well & Nott'ham	3	148	2.0%	0.37	-0.06	-0.43	-0.79	0.00	0.79
St.Albans	42	193	21.8%	-0.29	-0.29	0.01	-0.37	-0.16	0.20
St.E'bury & Ipswich	58	377	15.4%	-0.26	-0.23	0.03	-0.48	-0.21	0.27
Truro	17	155	11.0%	-0.66	-0.39	0.27	-0.82	-0.29	0.53
Wakefield	19	85	22.4%	-0.48	-0.39	0.09	-0.33	-0.31	0.02
Winchester	13	182	7.1%	0.42	-0.15	-0.57	0.13	-0.09	-0.22
Worcester	26	125	20.8%	-0.57	-0.24	0.33	-0.50	-0.32	0.18
York	9	312	2.9%	-0.63	-0.21	0.42	-0.90	-0.07	0.83
Total	1246	7547	16.5%	-0.19	-0.21	-0.02	-0.19	-0.15	0.04

5.4 The Effect of Benefice structure

Table 20 describes the number of Team Ministries in different benefice structures.

Table 20: Team Ministries and Benefice structures

Team Classifications	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Active	14	64	150	354	678	1260
Not a TM	3270	1896	1409	2362	634	9571
Total	3284	1960	1559	2716	1312	10831
Percentage of Active TMs	0.4%	3.3%	9.6%	13.0%	51.7%	11.6%

Looking at the 1,260 Active Team Ministries, just over half (678; 53.8%) are within MCU(7+) structures. Benefices with seven or more units have just over half (51.7%) in Team Ministries while benefice structures with three or fewer parishes have less than 10% TMs. The average scores and their differences recorded for these are shown in Table 21, 5 year period (2006-2011), followed by 10 year (2001-2011):

Table 21: 5- and 10-year differences for Team and non-Team ministries

Team Classifications	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Total
Active – 5yr	-0.22	-0.35	-0.22	-0.20	-0.16	-0.19
Not a TM – 5yr	-0.21	-0.22	-0.19	-0.21	-0.18	-0.21
Difference – 5 yr Non TM- TM	0.01	0.13	0.03	-0.01	-0.02	-0.02
Active – 10yr	-0.16	-0.36	-0.27	-0.11	-0.19	-0.19
Not a TM - 10yr	-0.22	-0.25	-0.12	-0.12	-0.04	-0.17
Difference – 10yr Non TM- TM	-0.06	0.11	0.16	-0.01	0.15	0.02

There is little difference between Active and non-Team Ministries for many of the benefice structures. Differences of 0.11 and 0.13 between TMs and non-TMs at MCU(2) may well be due to the small sample size, just 3% of MCU(2) churches are TMs. There are bigger differences also between the TMs for MCU(3) where just under 10% of parishes are in Teams, and MCU(7+). In these cases parishes with Team Ministries show more decline than parishes without Team Ministries.

It is worth noting that the most recent, and with best data, time period of 5 years, that Team Ministries with more than 4 units show slightly less decline than non-Team Ministries, but this is very unlikely to be significant.

6 Conclusions

From this inspection and statistical analysis of the standardised attendance data prepared by Voas and Watt, it is clear that the relationship between growth in standardised attendance and benefice structure is complex.

Geography has a major influence on the differences in results with “urban” dioceses showing no difference in attendance patterns by benefice size at either the 5 year or 10 year levels. There are differences in attendance levels between SCU(1) and some other levels at certain diocese geographical categories, but there is no evidence to suggest that in general the more churches that are amalgamated, the greater the decline.

There is no significant evidence to suggest a difference in attendance patterns at parishes with a Team Ministry.

The effect on standardised attendance of benefice structure is clearly complex and requires further investigation; work with clergy numbers and diocesan resources may be considered.

Fiona J Tweedie
17 September 2014

Appendix I: Individual measures

The method employed by Voas and Watt takes the average of the four standardised measures as a single figure for each parish. To investigate whether the changes are the same for all measures, I will look at the 3-way tables for growth for each one.

If the four measures were tapping into exactly the same trends, we would expect the growth-stability-decline categorisation to be the same for each one, with allowances for variation around the break-points. We find that almost a quarter of the parishes have exactly the same pattern across all four measures, e.g. all classified as “stable”, and around 35-36% have a single measure that differs by one from the others, e.g. one measure is classified as “stable” while the others are classified as “growth”. A further quarter of parishes have two measures which differ by one. The final 14% have larger differences, where at least one measure is classified as decline and another as growth. The exact values are shown in Table 22 below for both 5 and 10 year data. Tables 23 and 24 give the percentage of parishes in growth, stability or decline per measure by benefice structure.

Table 22: Variability in the four measures

Differences	5-year	10-year
All measures are the same	24.46%	24.46%
1 differs by 1 classification	36.48%	35.27%
2 differ by 1 classification	24.78%	25.34%
Differs by 2 or more classifications	14.27%	13.94%

Table 23: 5 year attendance patterns, % of each benefice structure in each classification

uSa	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	12.74%	12.14%	14.29%	14.22%	16.04%
Stability	65.01%	63.18%	63.60%	63.67%	60.62%
Decline	22.25%	24.68%	22.12%	22.10%	23.34%
AWA	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	8.89%	8.56%	9.73%	11.37%	13.33%
Stability	59.99%	57.79%	55.61%	55.12%	54.65%
Decline	31.12%	33.65%	34.66%	33.51%	32.02%
Child Sunday	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	17.12%	16.10%	19.58%	17.81%	20.90%
Stability	60.02%	60.06%	53.68%	48.54%	43.28%
Decline	22.86%	23.83%	26.73%	33.65%	35.82%
Easter	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	14.44%	14.57%	14.52%	14.38%	14.09%
Stability	65.01%	64.40%	64.27%	62.05%	61.73%
Decline	20.55%	21.03%	21.21%	23.57%	24.17%

Table 24: 10 year attendance patterns, % of each benefice structure in each classification

uSa	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	36.77%	38.70%	34.29%	33.58%	33.48%
Stability	49.47%	47.95%	49.78%	50.40%	50.59%
Decline	13.76%	13.35%	15.93%	16.02%	15.93%
AWA	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	21.75%	20.96%	17.68%	18.43%	16.56%
Stability	63.19%	63.64%	65.83%	63.84%	63.34%
Decline	15.06%	15.41%	16.49%	17.72%	20.10%
Child Sunday	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	32.00%	36.56%	32.74%	38.84%	39.22%
Stability	51.55%	47.54%	48.72%	43.05%	41.49%
Decline	16.45%	15.90%	18.54%	18.11%	19.29%
Easter	Benefice structure				
Pattern	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Growth	27.19%	27.71%	26.18%	26.78%	25.68%
Stability	56.87%	57.48%	60.23%	58.41%	57.86%
Decline	15.94%	14.81%	13.60%	14.81%	16.46%

The following pages give tables of the percentages of congregations classified by Geography and Benefice structure that are growing in terms of uSa, AWA, Child Sunday and Easter attendance, at both 5- and 10-year intervals.

For example, 18.0% of “urban” single church units grew in terms of their usual Sunday attendance between 2006 and 2011, while 16.35% of “remote-rural” single churches saw growth in their Easter attendance between 2001 and 2011.

Table 25: 5 year uSa, % of each Geography/structure in each growth classification

5-Year uSa	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	18.00%	21.29%	22.39%	8.51%	11.11%
Mostly-urban	10.98%	10.66%	15.22%	16.17%	17.86%
Urban-rural	10.76%	12.38%	15.25%	17.75%	28.92%
Rural	12.34%	9.65%	14.07%	12.83%	10.77%
Remote-rural	14.75%	13.53%	11.27%	14.00%	16.75%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	58.23%	51.61%	58.21%	59.57%	66.67%
Mostly-urban	65.85%	62.44%	58.15%	59.28%	71.43%
Urban-rural	68.81%	65.33%	66.67%	64.72%	50.60%
Rural	63.80%	65.76%	64.44%	64.70%	65.45%
Remote-rural	64.92%	60.53%	62.14%	62.93%	58.93%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	23.77%	27.10%	19.40%	31.91%	22.22%
Mostly-urban	23.17%	26.90%	26.63%	24.55%	10.71%
Urban-rural	20.42%	22.29%	18.08%	17.54%	20.48%
Rural	23.86%	24.59%	21.48%	22.47%	23.78%
Remote-rural	20.33%	25.94%	26.59%	23.08%	24.33%

Table 26: 5 year AWA, % of each Geography/structure in each growth classification

5-Year AWA	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	9.95%	8.97%	8.96%	12.50%	0.00%
Mostly-urban	8.01%	5.57%	6.04%	9.52%	17.24%
Urban-rural	9.46%	9.27%	10.15%	13.25%	9.58%
Rural	7.44%	9.42%	8.72%	10.53%	13.36%
Remote-rural	9.84%	9.23%	12.75%	11.65%	14.29%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	58.85%	64.10%	56.72%	54.17%	55.56%
Mostly-urban	59.84%	56.96%	56.59%	57.14%	62.07%
Urban-rural	59.96%	58.89%	55.94%	51.14%	53.29%
Rural	59.22%	55.07%	55.47%	55.17%	55.87%
Remote-rural	64.26%	58.30%	54.67%	56.77%	53.73%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	31.20%	26.92%	34.33%	33.33%	44.44%
Mostly-urban	32.16%	37.47%	37.36%	33.33%	20.69%
Urban-rural	30.58%	31.84%	33.91%	35.61%	37.13%
Rural	33.33%	35.51%	35.81%	34.30%	30.77%
Remote-rural	25.90%	32.47%	32.58%	31.58%	31.99%

Table 27: 5 year child Sunday attendance, % of each Geography/structure in each growth classification

5-Year child Sunday	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	16.40%	16.88%	14.93%	19.15%	11.11%
Mostly-urban	18.16%	14.36%	17.28%	13.16%	24.00%
Urban-rural	15.91%	15.40%	19.32%	19.60%	28.36%
Rural	16.33%	16.23%	20.30%	18.30%	19.66%
Remote-rural	22.18%	19.92%	21.22%	17.09%	19.63%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	65.10%	65.58%	64.18%	57.45%	55.56%
Mostly-urban	59.70%	63.71%	59.26%	57.24%	64.00%
Urban-rural	61.55%	61.93%	55.26%	52.01%	48.51%
Rural	56.12%	57.72%	50.00%	47.09%	45.51%
Remote-rural	52.73%	50.85%	51.80%	45.73%	38.32%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	18.50%	17.53%	20.90%	23.40%	33.33%
Mostly-urban	22.15%	21.93%	23.46%	29.61%	12.00%
Urban-rural	22.54%	22.67%	25.43%	28.39%	23.13%
Rural	27.55%	26.05%	29.70%	34.62%	34.83%
Remote-rural	25.09%	29.24%	26.98%	37.18%	42.06%

Table 28: 5 year Easter attendance, % of each Geography/structure in each growth classification

5-Year Easter	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	18.09%	17.83%	25.37%	14.89%	12.50%
Mostly-urban	14.36%	15.23%	13.66%	10.18%	3.70%
Urban-rural	12.21%	14.75%	13.85%	16.56%	16.05%
Rural	12.17%	14.18%	12.78%	15.84%	14.56%
Remote-rural	20.13%	12.03%	16.43%	12.28%	13.70%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	59.04%	59.24%	50.75%	61.70%	62.50%
Mostly-urban	65.45%	63.71%	63.93%	64.67%	70.37%
Urban-rural	67.95%	64.91%	66.81%	62.85%	66.67%
Rural	65.63%	66.73%	67.86%	60.73%	62.74%
Remote-rural	63.70%	62.41%	58.21%	62.72%	59.24%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	22.87%	22.93%	23.88%	23.40%	25.00%
Mostly-urban	20.19%	21.07%	22.40%	25.15%	25.93%
Urban-rural	19.83%	20.34%	19.34%	20.59%	17.28%
Rural	22.20%	19.09%	19.36%	23.43%	22.70%
Remote-rural	16.17%	25.56%	25.36%	25.00%	27.06%

Table 29: 10 year uSa, % of each Geography/structure in each growth classification

10-Year uSa	GROWTH				
Geography	SCU (1)	MCU(2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	21.80%	26.22%	22.54%	14.00%	36.36%
Mostly-urban	10.09%	11.00%	15.15%	18.13%	13.79%
Urban-rural	11.31%	13.21%	18.89%	18.21%	24.60%
Rural	12.67%	11.48%	16.20%	16.60%	14.59%
Remote-rural	17.45%	13.31%	11.11%	14.26%	15.10%
	STABILITY				
Geography	SCU (1)	MCU(2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	50.00%	41.46%	38.03%	46.00%	45.45%
Mostly-urban	47.61%	47.50%	46.97%	52.20%	65.52%
Urban-rural	52.35%	48.71%	52.78%	52.82%	45.24%
Rural	49.47%	48.17%	49.83%	50.30%	52.14%
Remote-rural	43.61%	50.36%	50.14%	49.52%	49.85%
	DECLINE				
Geography	SCU (1)	MCU(2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	28.20%	32.32%	39.44%	40.00%	18.18%
Mostly-urban	42.30%	41.50%	37.88%	29.67%	20.69%
Urban-rural	36.34%	38.08%	28.33%	28.97%	30.16%
Rural	37.86%	40.35%	33.97%	33.11%	33.27%
Remote-rural	38.94%	36.33%	38.75%	36.22%	35.04%

Table 30: 10 year AWA, % of each Geography/structure in each growth classification

10-Year AWA	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	19.16%	17.18%	22.54%	14.00%	27.27%
Mostly-urban	11.45%	12.97%	17.35%	17.03%	20.69%
Urban-rural	13.60%	16.29%	14.99%	17.80%	23.60%
Rural	15.75%	15.10%	16.87%	19.12%	20.55%
Remote-rural	19.75%	16.37%	16.24%	16.40%	18.71%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	66.07%	65.64%	61.97%	68.00%	72.73%
Mostly-urban	60.49%	62.59%	64.80%	65.38%	65.52%
Urban-rural	64.17%	63.08%	68.38%	64.80%	63.48%
Rural	61.93%	63.02%	63.83%	62.26%	64.58%
Remote-rural	63.32%	66.55%	66.95%	64.72%	62.13%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	14.77%	17.18%	15.49%	18.00%	0.00%
Mostly-urban	28.06%	24.44%	17.86%	17.58%	13.79%
Urban-rural	22.23%	20.63%	16.63%	17.40%	12.92%
Rural	22.32%	21.88%	19.30%	18.62%	14.87%
Remote-rural	16.93%	17.08%	16.81%	18.89%	19.15%

Table 31: 10 year child Sunday attendance, % of each Geography/structure in each growth classification

10-Year child Sunday	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	21.51%	22.01%	14.08%	30.00%	18.18%
Mostly-urban	12.58%	16.37%	11.41%	21.43%	24.00%
Urban-rural	15.23%	15.57%	21.33%	17.75%	24.83%
Rural	16.17%	14.95%	19.37%	18.83%	20.29%
Remote-rural	21.55%	14.17%	18.36%	16.08%	16.70%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	53.61%	57.86%	63.38%	38.00%	45.45%
Mostly-urban	52.79%	46.29%	52.72%	44.64%	52.00%
Urban-rural	50.72%	46.38%	46.44%	43.65%	48.97%
Rural	51.18%	45.42%	46.58%	44.00%	43.52%
Remote-rural	48.15%	50.39%	49.84%	41.61%	37.13%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	24.87%	20.13%	22.54%	32.00%	36.36%
Mostly-urban	34.63%	37.34%	35.87%	33.93%	24.00%
Urban-rural	34.05%	38.05%	32.22%	38.61%	26.21%
Rural	32.65%	39.63%	34.05%	37.17%	36.19%
Remote-rural	30.30%	35.43%	31.80%	42.32%	46.17%

Table 32: 10 year Easter attendance, % of each Geography/structure in each growth classification

10-Year Easter	GROWTH				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	25.91%	26.54%	19.72%	18.00%	9.09%
Mostly-urban	12.69%	14.79%	14.21%	15.30%	17.86%
Urban-rural	14.20%	13.62%	15.64%	9.53%	16.76%
Rural	13.38%	13.94%	11.38%	16.65%	17.41%
Remote-rural	16.35%	12.68%	12.78%	15.03%	15.73%
	STABILITY				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	52.48%	51.23%	52.11%	60.00%	81.82%
Mostly-urban	57.25%	55.89%	61.93%	62.84%	75.00%
Urban-rural	58.36%	58.08%	62.35%	63.49%	59.78%
Rural	57.54%	59.93%	61.65%	56.81%	56.48%
Remote-rural	57.55%	56.88%	55.68%	56.87%	57.25%
	DECLINE				
Geography	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)
Urban	21.62%	22.22%	28.17%	22.00%	9.09%
Mostly-urban	30.05%	29.32%	23.86%	21.86%	7.14%
Urban-rural	27.44%	28.29%	22.02%	26.98%	23.46%
Rural	29.08%	26.13%	26.97%	26.54%	26.11%
Remote-rural	26.10%	30.43%	31.53%	28.09%	27.02%

Appendix II: Technical differences between the Strands 1 and 2, and 3c analyses

This is a technical appendix prepared to give detail on the differences in data usage between the methods of data analysis employed in Strands 1 and 2 (Voas and Watt), and 3c (Goodhew et al.) of the Church Growth Research Programme. In summary, the differences are:

- Some different attendance measures are examined
- Parish size is dealt with in different ways – standardisation vs stratification
- Inclusion or exclusion of data from parishes with more than one church
- Different timespans are used, 2001-2011 or 2006-2011.

This report examines both timespans and the effects of excluding the multi-church parish data.

II.1. Attendance measures

The measures of attendance used by the research groups are as follows:

Goodhew et al consider

- Usual Sunday attendance for adults (adult uSa)
- Usual Sunday attendance for children (child uSa)
- Average weekly attendance for adults (adult aWa)
- Electoral roll (ER)

and look at *t*-tests between each of these, stratified by size of congregation.

Voas and Watt use the average of standardised

- Usual Sunday attendance for adults (adult uSa)
- Usual Sunday attendance for children (child uSa)
- All-age Average weekly attendance
- Easter attendance

and correlate this with various attributes of the parishes.

II.2. Size issues

This is a fundamental difference between the original reports.

Voas and Watt use a standardisation technique to produce a measure which they believe to be independent of church size, and which can be used to compare churches of all sizes.

Goodhew et al stratify the sample into five size-based groups: 0-14; 15-29; 30-49; 50-99; 100+ and state that “analysing the data without size groupings seriously distorts the findings” (p57).

In their attempt to allow for uniform comparisons across all churches, Voas and Watt have removed the ability to check if size of congregation is indeed a significant factor in church growth, while Goodhew et al have stated *a priori* that it is important and use this to drive their analysis. It should be noted that a 2-way ANOVA with a size factor would have indicated whether it was significant. No reason is given for the particular division of sizes, not the results of such an ANOVA reported.

II.3. Inclusion of MCP/MCU data

Goodhew et al remove all MCP/MCU data citing its unreliability (pp10-13), that multi-church parishes did not return consistent figures including every church in the parish. In addition, the MCP/MCU parishes would not be able to be stratified by size in the same way as the others. It is not possible to work out the sizes of the individual churches within the MCP/MCU structure, while this can be done for the SCP/MCP ones.

There is only **one** place in this analysis where there is any marked difference in results when the MCP/MCU data is removed. This is in “urban” dioceses at the 10-year level, where removing the MCP/MCU data leads to a significant difference between benefice structures which was not present when all of the data is included ($p=0.02$ compared to $p=0.85$ with MCP/MCU included). When the diocese of London is also excluded we find $p=0.11$ in comparison with $p=0.89$ when MCP/MCU included.

Closer examination of the data for the “urban” dioceses (London, Manchester, Southwark) shows that there are large differences in the standardised data for amalgamated parishes in the dioceses of London and Southwark. Manchester is less affected. The table below shows the difference between standardised attendance measures at 10 years for the “urban” dioceses, split by structure. The number of MCP/MCU parishes and the total number of parishes for each structure and diocese is given on the second row of each cell.

Table 33: Details of "urban" dioceses

MCP/MCU incl – excl	SCU (1)	MCU (2)	MCU (3)	MCU (4-6)	MCU (7+)	Average
London	0.00	-0.32 (48/56)	1.11 (13/17)	-1.39 (1/1)	0.00	0.03
Manchester	0.00	-0.10 (20/43)	0.17 (8/31)	0.12 (9/34)	0.00 (0/4)	0.01
Southwark	0.00	0.34 (21/59)	0.82 (11/19)	0.03 (6/13)	0.67 (2/5)	0.08
Average	0.00	0.17	0.55	0.07	0.23	0.04

The largest difference is in MCU(4-6) for London (-1.39) but this is the figure for a single parish which has declined in the time period. MCU(3) parishes show a considerable increase in attendance over the same period when the extra 13 MCP/MCU parishes are added in London, as well as an increase of 0.82 in Southwark. It should be borne in mind that we might expect an increase in attendance in MCP/MCU parishes where only some of the churches had previously been recorded. Individual *t*-tests here show that only the MCU(3) results change when the MCP/MCU data is excluded.

Apart from the “urban” 10-year data, all of the analyses of variance give the same results in terms of significance with MCP/MCU included or excluded. The *t*-tests were almost the same, with four out of twenty giving differing results, generally to do with being around the $p=0.05$ level. None of the differences were so high that I felt there were an issue.

II.4. Timespan of data

Goodhew et al. use data from 2006-2011, rather than 2001-2011 citing rates of return (pp13-15) and bedding in of changes to data collection (pp51-2). Voas and Watt use data from 2001-2011 without commenting on the time period. In this report both 10-year and 5-year time periods are checked.

II.5. Other issues

Goodhew et al describe “significant issues concerning tabulation” (p19) and undercounting. It is unclear as to whether they are arguing for differences in undercounting that would affect some areas and not others – if there is no bias in the undercounting then it would be less likely to affect the results.

There is also concern about rates of return, but again unless there is an identifiable bias in e.g. declining churches not returning data, this is not likely to be a cause for concern.

Another issue is that of changes in structure during the time period of the data. To bring together the work of Voas and Watt, and Goodhew et al, this report takes the classifications prepared by Goodhew et al and links them to the standardised data used by Voas and Watt based on the Benefice Code. My understanding is that the classifications are as 2011, and that data linked to that benefice code refers to the same benefice structure throughout. The standardised attendance measure used will be the same as that in the Voas and Watt report, and is tied to the Benefice code. Benefices which have had their structure changed over the time period will not have data available at the start and end of the time period.