

Index of Integration

Introduction

Integration has risen higher up the political agenda in recent months with policy makers more alert to the high levels of segregation in parts of the country as well as inequality both between and within ethnic groups.

This study attempts to find out which are the best and worst integrated places. It uses data from the 2011 census of England & Wales and focuses solely on places (towns, cities, London boroughs) with populations over 20,000 with ethnic minority populations (defined as all non-white British) of over 15 per cent.

Integration is an elusive concept. It means different things to different people and often the definition is politically charged. In the context of this study we are taking our definition to be the extent to which people are living and working together and sharing a common national identity. Specifically the focus is on ethno-cultural integration. Those interested in the general findings rather than methodology might skip the next section (albeit glancing at the variables used).

Methodology

This study makes use of a statistical method called [factor analysis](#) in order to measure integration. The researcher identifies a series of variables that are on face value valid indicators of the concept that he or she wishes to measure. A statistical model is then estimated that looks to see if these variables share something in common to the extent that they might be measuring the same thing – so called latent variables or factors. Once the underlying data structure has been identified, then the latent variables can be estimated in order to create indices that measure the desired concept.

The variables identified from the census were of two kinds:

Identity integration

- % of ethnic minorities identifying as [English or Welsh](#)
- % of ethnic minorities identifying as [‘foreign’](#)
- % of immigrants with a [British passport](#)

Structural integration

- Residential segregation ([ethnic minorities](#) relative to white British within neighbourhoods – [index of dissimilarity](#))
- [Economic](#) segregation (ethnic minorities relative to white British within industries – index of dissimilarity)
- [Employment gap](#) (% ethnic minorities aged 16-49 in employment *minus* % white British aged 16-49 in employment)
- Household mixing ([mixed couple households](#) per ethnic minority household)

In order to arrive at these groupings, an exploratory factor analysis model was estimated. [Scree tests and parallel analysis](#) revealed there to be two underlying factors and so the model was specified as such.

The results are presented in the table below.¹ The factor loadings represent the strength of the relationship of each variable and each underlying factor. Those in bold represent substantial loadings (i.e. greater than 0.4) meaning a variable is meaningfully tied to a factor.

Table 1

Exploratory factor analysis

	<i>Factor loadings:</i>		
	Factor1	Factor2	Unique
Economic segregation	-0.39	0.56	0.59
Employment gap	-0.36	-0.42	0.65
Ethnic minority English/Welsh identification	0.76	-0.08	0.43
Ethnic minority foreign identification	-0.98	-0.10	0.01
Household mixing	-0.03	-0.70	0.50
Immigrants with British passports	0.93	0.07	0.11

Residential segregation	0.14	0.88	0.16
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SS loadings	2.71	1.79
Proportion Variance	0.39	0.26
Cumulative Variance	0.39	0.64

What this model is doing is identifying two measures of integration – identity and structure – that are distinct and broadly uncorrelated ($r=0.15$). From this model, scores on both these variables can be estimated in order to arrive at two workable indices measuring these two dimensions of integration – identity and structure.² The resulting indices are standardised with a mean of 0 and a standard deviation of 1. The structure dimension is reverse coded with a multiplier of -1 so that higher scores represent greater integration. Finally, in order to arrive at an overall integration score the two indices were added together. The decision was taken to weight down the identity dimension as it was thought that structural integration was much more important to people’s actual lives and to give them equal weighting would produce an index that would shift the attention away from those places where the need for real day to day integration was greatest. Accordingly, a weight of 1/3 was applied to the identity index.

Best and worst integrated places

Tables 2 and 3 show the best and worst integrated places in England and Wales. Table 2 shows the best and worst places on each index while Table 3 shows the results of the combined index.

Table 2

Best and worst integrated places

Rank	Identity		Structure	
	Place	Score	Place	Score
1	Sutton Coldfield	1.85	Amersham	1.86
2	Gatley	1.75	Esher	1.63
3	Solihull	1.61	Loughton	1.59

4	Willenhall	1.59	Potters Bar	1.56
5	Stretford	1.54	Bushey	1.41
6	Bilston	1.30	Letchworth Garden City	1.36
7	Chadderton	1.27	Rickmansworth	1.35
8	Dudley	1.26	Sutton Coldfield	1.30
9	Batley	1.25	West Bridgford	1.29
10	Walsall	1.25	Cheshunt	1.29
160	Boston	-4.06	Oldham	-2.60
159	Spalding	-3.65	Batley	-2.39
158	Wisbech	-3.52	Bradford	-2.28
157	Thetford	-3.21	Blackburn	-2.27
156	Newmarket	-2.23	Keighley	-2.20
155	Corby	-2.17	Accrington	-2.12
154	Bournemouth	-1.71	Halifax	-2.10
153	Huntingdon	-1.63	Dewsbury	-2.07
152	Cambridge	-1.55	Boston	-2.02
151	Canterbury	-1.43	Burnley	-2.01

Table 3

Best and worst integrated places: overall

Rank	Place	Overall score	Identity rank	Structural rank
1	Amersham	2.09	43	1
2	Sutton Coldfield	1.91	1	8
3	Loughton	1.87	30	3
4	Potters Bar	1.87	25	4
5	Letchworth Garden City	1.72	19	6
6	Stretford	1.71	5	12
7	Bushey	1.69	29	5
8	West Bridgford	1.68	12	9
9	Rickmansworth	1.65	27	7
10	Esher	1.63	82	2
160	Boston	-3.36	160	152
159	Wisbech	-2.57	158	147
158	Oldham	-2.36	41	160
157	Spalding	-2.20	159	139
156	Bradford	-2.10	50	158
155	Batley	-1.97	9	159
154	Halifax	-1.94	56	154

153	Blackburn	-1.93	21	157
152	Keighley	-1.90	28	156
151	Accrington	-1.85	33	155

Analysis

What is it about these places that might be key to explaining their high or low scores respectively?

Looking at Table 4, we see that the best integrated places tend to be more affluent satellites of Birmingham and London. If we look at the worst integrated places, they are much more northern and tend to be post-industrial mill towns of Yorkshire and Lancashire. The exceptions are: Wisbech, Spalding, and Boston which lie in Eastern England. Generally, the well-integrated places tend to have a smaller minority population and do not have a dominant minority in terms of size.

Table 4

Best and worst integrated places: region and size

Rank	Place	Region	Population
1	Amersham	South East	23086
2	Sutton Coldfield	West Midlands	109015
3	Loughton	East	31106
4	Potters Bar	East	22639
5	Letchworth Garden City	East	33249
6	Stretford	North West	26813
7	Bushey	East	25328
8	West Bridgford	East Midlands	45509
9	Rickmansworth	East	23973
10	Esher	South East	50904
160	Boston	East Midlands	41340
159	Wisbech	East	31573
158	Oldham	North West	96555
157	Spalding	East Midlands	31588
156	Bradford	Yorkshire and the Humber	349561
155	Batley	Yorkshire and the Humber	80485
154	Halifax	Yorkshire and the Humber	88134

153	Blackburn	North West	117963
152	Keighley	Yorkshire and the Humber	53331
151	Accrington	North West	35456

Table 5 presents profiles of each of the best and worst-integrated places.

Crucial to the interpretation of these data is an understanding of the ethnic compositions of these places as well as the recognition that different ethnic groups are following different socio-economic trajectories.

In Spalding, Wisbech, and Boston, the largest minority group are the ‘White Others’, mostly East European immigrants and they overwhelmingly dominate the minority population. They do badly on both measures of integration. The Eastern Europeans do not need British passports and continue to identify with their home countries.

Furthermore, these places tend to have moderate levels of residential segregation plus the minority population is more employed than the majority. What really sets them apart however is economic segregation – these places have the highest levels. The minority populations in Spalding, Wisbech, and Boston are working but they are working apart from the majority.

Most of the worst-integrated places that are not in Eastern England tend to have minority population shares composed largely of Pakistanis or Indians. The best-integrated places tend to have White Others or Indians as their largest minority group although they never dominate the minority population in quite the same way as the largest minority groups in the worst places.

There are also some surprising inclusions in the best list. Amersham may be there because of the presence of the headquarters of GE Health which would attract a cluster of affluent Americans. Stretford by contrast is relatively deprived and its largest minority is Pakistanis.

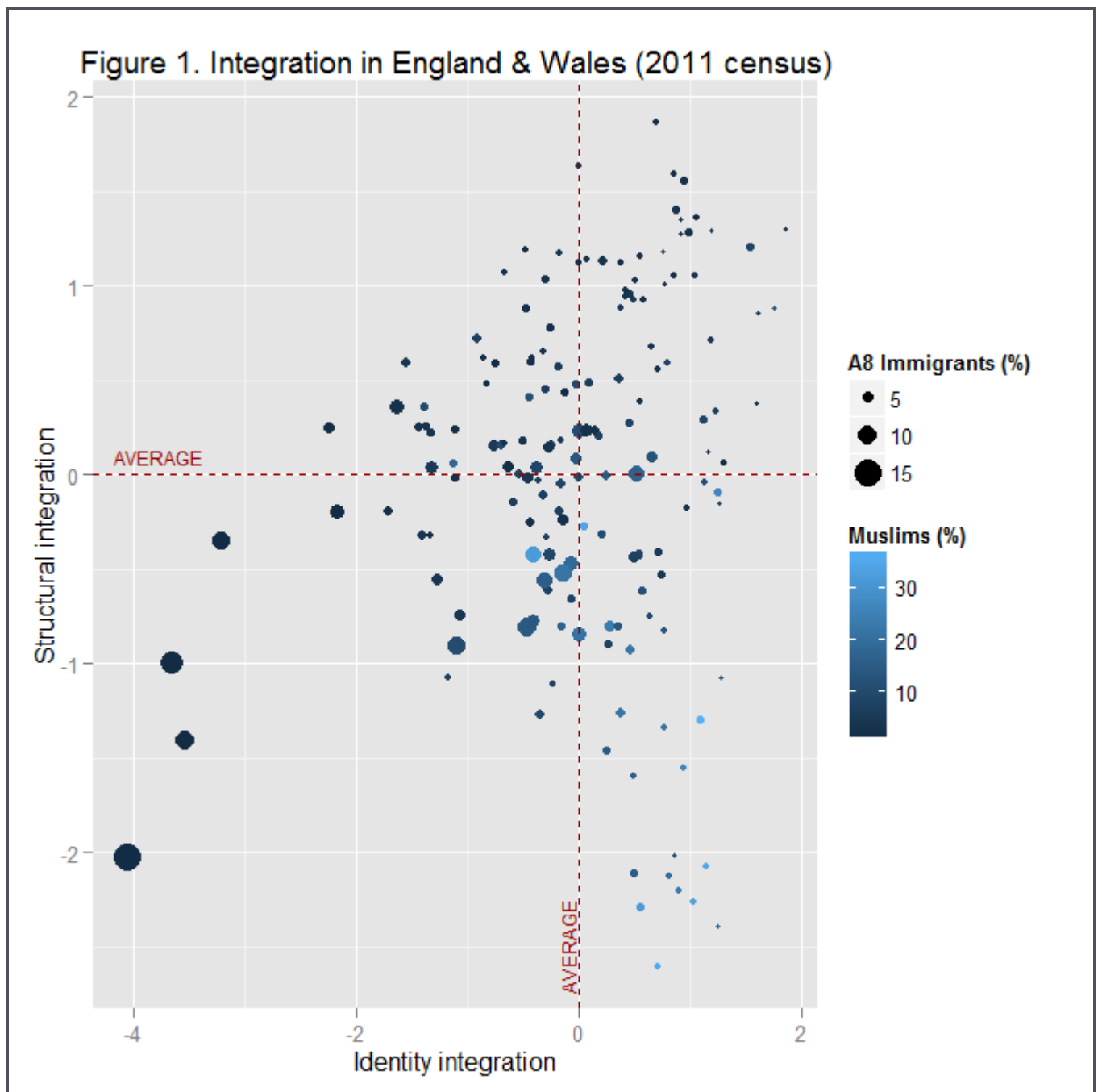
Table 5

Ethnic composition of best and worst places

Rank	Place	Minority %	Largest minority	%	% Minority
1	Amersham	17%	White Other	6%	33%
2	Sutton Coldfield	15%	Indian	5%	30%

3	Loughton	15%	White Other	5%	32%
4	Potters Bar	20%	White Other	7%	33%
5	Letchworth Garden City	19%	Indian	5%	25%
6	Stretford	30%	Pakistani	5%	18%
7	Bushey	23%	White Other	6%	24%
8	West Bridgford	17%	Indian	4%	26%
9	Rickmansworth	16%	White Other	4%	24%
10	Esher	18%	White Other	7%	40%
160	Boston	22%	White Other	18%	79%
159	Wisbech	16%	White Other	12%	77%
158	Oldham	45%	Pakistani	22%	49%
157	Spalding	18%	White Other	14%	80%
156	Bradford	46%	Pakistani	27%	58%
155	Batley	24%	Indian	12%	52%
154	Halifax	23%	Pakistani	15%	62%
153	Blackburn	40%	Indian	17%	42%
152	Keighley	30%	Pakistani	19%	63%
151	Accrington	25%	Pakistani	18%	70%

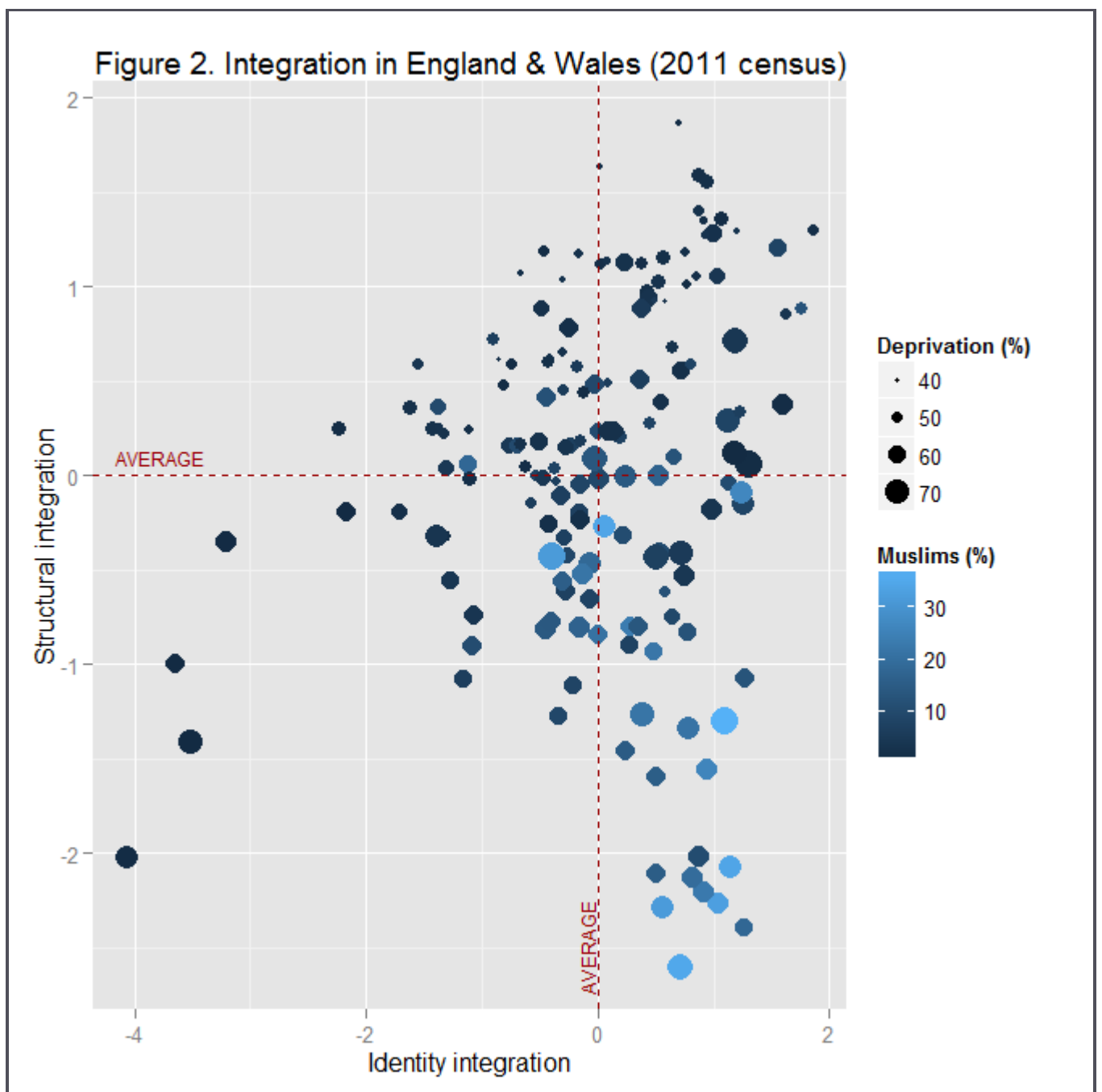
Now we turn to look at some broader trends. In Figure 1 we have plotted the two indices of integration against each other. The top right quadrant represents the most integrated; the bottom left the least integrated on both indices. Furthermore, the points on the graph have been coloured with lighter blue colours representing larger population shares of Muslims. The points have also been scaled with larger blobs representing greater population shares of Eastern European immigrants (people born in A8 EU countries).



As we can see, places with higher shares of Muslims tend to score poorly on the structural dimension. However, they also tend to score highly on the identity dimension. Places with high shares of Eastern European immigrants also score poorly on both dimensions.

There is the possibility that these relationships hinted at in Figure 1 are actually being influenced by another intervening variable – deprivation. In order to explore this, in Figure 2 the same scatter plot is drawn only the points are weighted by the share of deprived households.³

As we can see, it does seem to be the case that more deprived areas are much less integrated on the structural level and that these often have large shares of Muslims. The Eastern European immigrants would also be found in deprived areas. It is also worth noting that there are places that do seem to have high levels of deprivation but minimal shares of Muslims that are much better integrated than places with comparable levels of deprivation but substantial shares of Muslims. Such examples would include Havering, Harlow, and Willenhall.



In order to better tease out these relationships, regression analysis was applied to both indices of integration. Two sets of [OLS linear regression models](#) were estimated, one for each index. The independent variables are all measured from the census and are:

- % of [Muslims](#)
- % of [Eastern European immigrants \(A8\)](#)
- % of [deprived households](#)

Table 6 details the results of the regression analysis of identity integration. Model 1 shows that the share Muslims is significantly associated with greater identity integration. Model 2 shows a very strong negative and significant relationship between the share of Eastern European immigrants and identity integration. Model 3 shows a small and statistically insignificant relationship between deprivation and identity integration. Model 4 lumps all these variables into the same model; doing so causes the effect of Muslim share to attenuate somewhat although it remains significant. Eastern European immigrant share becomes even stronger in effect while the effect of deprivation becomes more positive and statistically significant. Note that in the simple bivariate models, it is only Model 2 that carries any substantial explanatory power as judged by the R-squared statistics.

Table 6

OLS regression analysis of identity integration				
	<i>Dependent variable:</i>			
	Identity integration			
	(1)	(2)	(3)	(4)
Muslims	3.35*** (0.93)			2.96*** (0.78)
Eastern European immigrants		-28.62*** (2.61)		-31.62*** (2.47)
Deprivation			0.74 (0.99)	2.01** (0.83)
Constant	-0.27**	0.88***	-0.43	-0.44

(0.11) (0.10) (0.58) (0.44)

Observations	160	160	160	160
R ²	0.07	0.43	0.004	0.55
Adjusted R ²	0.07	0.43	-0.003	0.54

Note: standard errors in parentheses * p<0.1; ** p<0.05; *** p<0.01

Table 7 shows the results of the regression analysis of structural integration. As we can see from Models 1, 2, and 3, the share of Muslims, Eastern European immigrants, and deprivation are all negatively as well as statistically significantly tied to structural integration. When these are included in Model 4, we see they all remain negatively linked and significant, only the effects are reduced. Put simply, the places where Muslims and Eastern Europeans live tend to be more deprived and that accounts for some but crucially not all of the lack of structural integration.

Table 7

OLS regression analysis of structural integration				
<i>Dependent variable:</i>				
Structural integration				
	(1)	(2)	(3)	(4)
Muslims	-7.39***			-5.24***
	(0.69)			(0.73)
Eastern European immigrants		-11.29***		-5.58**
		(3.11)		(2.33)
Deprivation			-7.26***	-3.92***
			(0.73)	(0.79)
Constant	0.60***	0.35***	4.22***	2.88***
	(0.08)	(0.12)	(0.43)	(0.41)
Observations	160	160	160	160
R ²	0.42	0.08	0.39	0.54

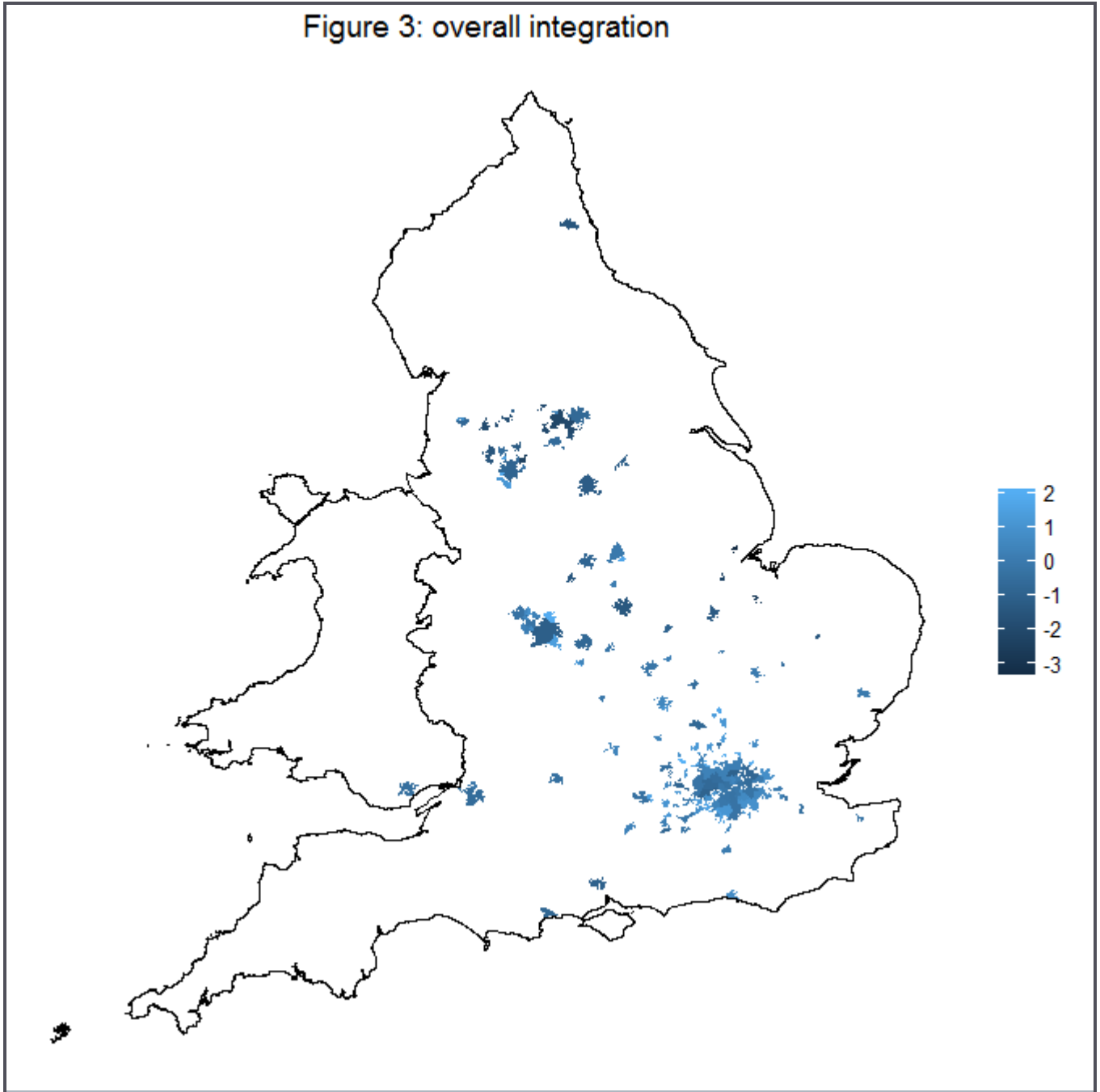
Adjusted R ²	0.42	0.07	0.38	0.54
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Note: standard errors in parentheses *p<0.1; **p<0.05; ***p<0.01

Mapping integration

In order to gain a fuller understanding of the geographical spread of integration, the overall index is mapped in Figure 3. The lighter blue areas represent the better integrated places. Indeed, the least integrated places tend to be in the North West of England while the most integrated places tend to be smaller and scattered around London and to some extent Birmingham.

Figure 3: overall integration



Discussion

Generally, the findings are what a well-informed observer would expect: integration is least in the Yorkshire and Lancashire mill towns with higher levels of deprivation and large shares of Pakistani Muslims. Also, places with large percentages of Eastern European immigrants have a strong identity divide as well as structural one and this will largely be driven by the fact they

are working in industries that many White British people do not want to work in, at least given current wages and conditions.

A key point of this study is that there are different ways in which we can think about integration. Two dimensions were identified empirically but there may be more. While we may tend to think of places with large populations of Muslims as being un-integrated, this study shows us that this may be true on one level but not another. In these places there may very well be strong segregation but there is a shared sense of identity.

The relationship between deprivation and integration is something that needs to be properly understood theoretically as well as tackled at a policy level. We need a good theoretical model of how these are related that accounts for both individual agency and those circumstances beyond the individual's control. This is something that can be fleshed out at a later stage.

Furthermore, a lack of integration need not be automatically thought of as a problem. These data do not measure the quality of community relations.

Of course, all studies have their limitations and this one is no different. This is just one way of looking at things. Generally factor analysis is very much dependent on what you put in the model. Different variables will produce different models and different rankings. In mitigation, the variables selected are broad and cover much of the conceptual ground of what we normally would expect integration to mean.

Also, the measurements taken tended to be looking only at ethnic minorities or immigrants as a whole. This means that places with a large share of Poles but no one else from other minority groups will score much less well than somewhere with a large share of Poles and also a large share of say affluent Indians to offset them. Within apparently well integrated places there may very well be pockets of segregation that are overlooked by this method. The data are from the census – the most comprehensive geographical data we have – but they are out-dated. Things will have changed in the five years since the census was taken, some places will have got better, others worse.

Another contentious issue is the decision to weight down the identity dimension. To apply an equal weighting would have given a vastly different

final index featuring many places that do not crop up often in the integration debate. However, it was felt that identity is less important as it is broadly reflective of recent immigration status and as the regression modelling showed, much less linked to deprivation.

Yes, the idea of a common identity is important in any definition of an integrated society but to focus attention away from those places where the structural divide is most pronounced would have been wrong in our judgement.

Appendix

Table 8

Complete rankings

Overall rank	Place	Overall score	Identity rank	Structure rank
1	Amersham	2.09	43	1
2	Sutton Coldfield	1.91	1	8
3	Loughton	1.87	30	3
4	Potters Bar	1.87	25	4
5	Letchworth Garden City	1.72	19	6
6	Stretford	1.71	5	12
7	Bushey	1.69	29	5
8	West Bridgford	1.68	12	9
9	Rickmansworth	1.65	27	7
10	Esher	1.63	82	2
11	Cheshunt	1.61	22	10
12	Woodley	1.58	26	11
13	Gatley	1.47	2	32
14	Ewell	1.43	38	14
15	Solihull	1.39	3	35
16	Whitefield	1.39	20	23
17	Ashford (Spelthorne)	1.34	49	16
18	Hitchin	1.34	32	22
19	Warwick	1.26	36	26

20	Welwyn Garden City	1.24	65	20
21	Borehamwood	1.21	74	18
22	Hemel Hempstead	1.20	55	25
23	Camberley	1.16	80	17
24	Walton-on-Thames	1.12	83	19
25	Windsor	1.12	98	15
26	Stevenage	1.12	64	27
27	Gerrards Cross	1.12	47	30
28	Sutton	1.11	61	28
29	New Addington	1.10	13	38
30	St Albans	1.09	59	31
31	Sale	1.09	63	29
32	Bracknell	1.04	124	13
33	Bletchley	1.01	66	33
34	Richmond upon Thames	0.94	108	24
35	Willenhall	0.90	4	57
36	Bromley	0.89	45	39
37	Chesham	0.86	34	44
38	Weybridge	0.85	130	21
39	Havering	0.80	42	48
40	Fulwood	0.74	11	60
41	Brighton and Hove	0.73	125	34
42	Harlow	0.69	102	36
43	Oldbury (Sandwell)	0.66	17	61
44	Lewisham	0.63	68	49
45	Bexley	0.57	51	56
46	Epsom	0.55	110	40
47	M Maidenhead	0.52	78	50
48	Milton Keynes	0.52	99	47
49	Wednesfield	0.50	14	79
50	Bilston	0.49	6	83
51	Redhill	0.48	118	42
52	Islington	0.47	87	51
53	Staines	0.46	119	43
54	Aylesbury	0.43	62	62
55	Oxford	0.42	137	37
56	Royal Leamington Spa	0.40	91	54

57	Kingston upon Thames	0.36	107	53
58	Basingstoke	0.35	133	45
59	Broomhall/Windlesham/Virginia Water	0.34	136	41
60	Shipley	0.33	16	94
61	Walsall	0.32	10	96
62	Harrow	0.31	44	80
63	Northfleet	0.28	77	67
64	Watford	0.27	76	71
65	Camden	0.26	121	55
66	Wellingborough	0.26	79	69
67	Dudley (Dudley)	0.26	8	99
68	Barnet	0.24	84	68
69	Farnborough	0.21	135	52
70	Enfield	0.18	54	87
71	Rowley Regis	0.15	23	100
72	Loughborough	0.13	94	73
73	Crawley	0.08	101	75
74	Cambridge	0.08	152	46
75	Barking and Dagenham	0.08	88	81
76	Hackney	0.08	73	89
77	Grays	0.06	105	78
78	Ipswich	0.02	126	72
79	Nottingham	-0.01	85	90
80	Beeston (Broxtowe)	-0.05	131	74
81	Hammersmith and Fulham	-0.07	132	77
82	Merton	-0.08	115	85
83	Banbury	-0.09	134	76
84	Kensington and Chelsea	-0.10	149	59
85	Southwark	-0.10	95	95
86	Filton	-0.12	141	66
87	Woking	-0.15	113	93
88	Rugby	-0.17	129	84
89	Northampton	-0.17	123	92
90	Tipton	-0.17	40	112
91	Huntingdon	-0.18	153	58
92	Wandsworth	-0.18	127	88
93	Guildford	-0.19	148	63

94	Egham	-0.21	147	70
95	Greenwich	-0.22	111	97
96	Canterbury	-0.22	151	65
97	Hillingdon	-0.24	75	107
98	Ashton-under-Lyne	-0.24	53	113
99	Croydon	-0.25	52	117
100	Lambeth	-0.25	97	102
101	Tower Hamlets	-0.25	81	106
102	West Bromwich	-0.27	57	118
103	Gravesend	-0.28	93	104
104	Wolverhampton	-0.29	39	121
105	City of Westminster	-0.31	142	82
106	Reading	-0.34	128	98
107	Swindon	-0.38	140	91
108	Chatham	-0.40	120	105
109	Hatfield	-0.40	145	86
110	High Wycombe	-0.42	48	125
111	Cardiff	-0.43	106	110
112	Newmarket	-0.48	156	64
113	Brent	-0.49	89	119
114	Bedford	-0.51	103	114
115	Bury	-0.54	46	128
116	Bristol	-0.55	114	116
117	Newham	-0.55	116	115
118	Waltham Forest	-0.57	92	120
119	Huddersfield	-0.57	37	134
120	Chadderton	-0.66	7	141
121	Ealing	-0.66	109	123
122	Leeds	-0.68	90	126
123	Preston	-0.69	69	132
124	Coventry	-0.70	104	124
125	Luton	-0.70	70	131
126	Bournemouth	-0.76	154	103
127	Aldershot	-0.76	146	108
128	Redbridge	-0.77	60	138
129	Salford	-0.78	150	109
130	Derby	-0.81	71	136

131	Slough	-0.85	86	135
132	Manchester	-0.85	96	130
133	Hounslow	-0.91	117	129
134	Corby	-0.91	155	101
135	Nelson (Pendle)	-0.93	18	145
136	Haringey	-0.95	122	133
137	Southampton	-0.98	144	122
138	Birmingham	-1.08	35	146
139	Doncaster	-1.10	138	127
140	Smethwick	-1.14	67	143
141	Sheffield	-1.18	100	142
142	Rochdale	-1.24	24	149
143	Peterborough	-1.26	139	137
144	Leicester	-1.38	72	148
145	Burton upon Trent	-1.39	112	144
146	Thetford	-1.41	157	111
147	Bolton	-1.43	58	150
148	Newcastle upon Tyne	-1.46	143	140
149	Dewsbury	-1.70	15	153
150	Burnley	-1.73	31	151
151	Accrington	-1.85	33	155
152	Keighley	-1.90	28	156
153	Blackburn	-1.93	21	157
154	Halifax	-1.94	56	154
155	Batley	-1.97	9	159
156	Bradford	-2.10	50	158
157	Spalding	-2.20	159	139
158	Oldham	-2.36	41	160
159	Wisbech	-2.57	158	147
160	Boston	-3.36	160	152

FOOTNOTES

- [1](#) Promax rotation [↑](#)

- [2](#) Factor scores are estimated here using the regression method. All variables are standardised and then added together but weighted with weights derived from the factor loadings. Variables with higher factor loadings will be given the most weight. [↑](#)
- [3](#) The census contains a measure of whether or not a [household is deprived](#) on one or more dimensions: education, employment, overcrowding, and health and disability [↑](#)