

## **Uses for Census Data in Market Research**

**MRS Presentation 4 July 2011**

**Andrew Zelin, Director, Sampling & RMC, Ipsos MORI**

**Ipsos MORI**



# Why Census Data is so critical to us

- Use of Census Data underlies almost all of our quantitative work activities and projects
- Needed to ensure that:
  - Samples are balanced and representative – ie [Sampling](#);
  - Results derived from samples reflect that of target population – ie [Weighting](#);
  - Understanding how demographic and geographic factors affect the findings from surveys – ie [Analysis](#).
- How would we do our jobs without the use of Census Data?

# Our work without Census Data



# What I will cover

- Introduction, overview and why Census Data is so critical;
- Census data for sampling;
- Census data for survey weighting;
- Census data for statistical analysis;
- Use of SARs;
- The future (eg use of “hypercubes”);
- Our work without Census Data / use of alternatives;
- Conclusions



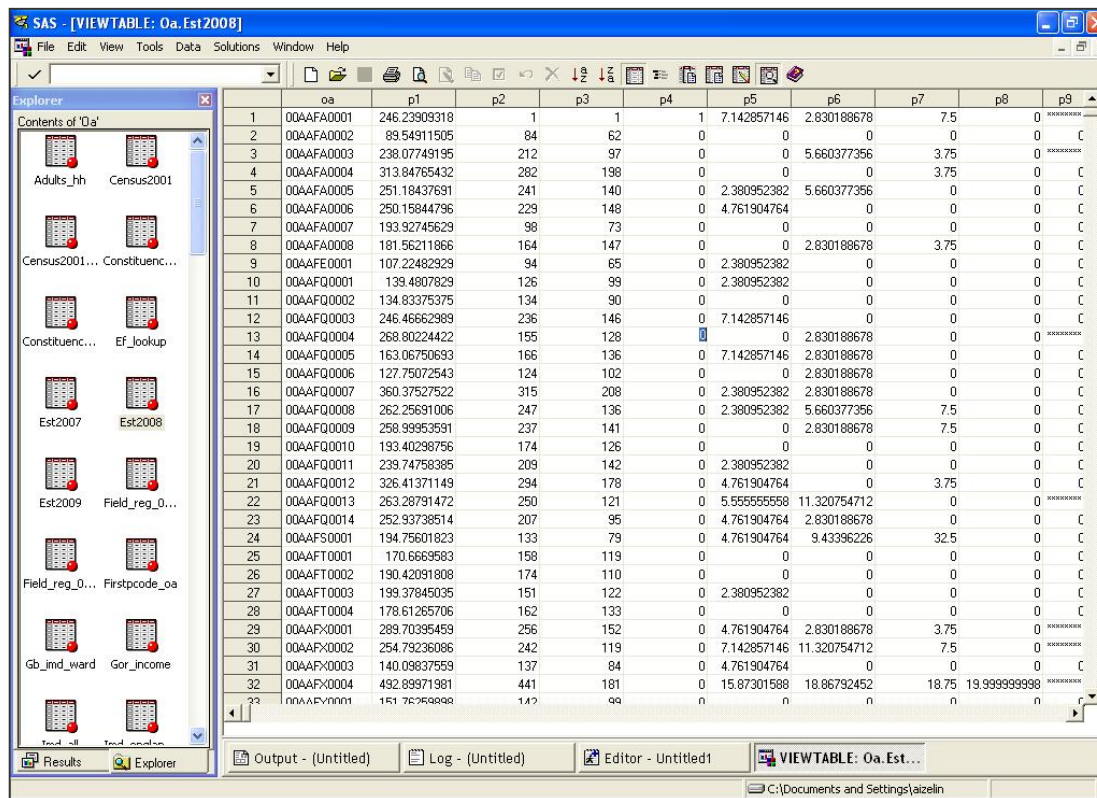
# Census Data for Sampling

- For Random (pre-selected) Samples:
  - Need to define stratum sample sizes and sampling fractions;
  - Need to define cluster size, esp. if PPS
  - (Need to define stratum / cluster) membership;
- For any type of Sample:
  - To balance samples across demographics that cannot be included as quota controls or stratification variables
  - To determine number of sample points by geography
  - To create accurate booster samples (eg young people / ethnic groups)



# Census Data for Sampling

- For Quota (non-probability) Samples:
  - To set appropriate quotas (based on demographics);



The screenshot shows the SAS software interface with a data table titled 'VIEWTABLE: Oa.Est2008'. The table contains 32 rows of data, each representing a census output. The columns are labeled 'oa', 'p1', 'p2', 'p3', 'p4', 'p5', 'p6', 'p7', 'p8', and 'p9'. The data values are numerical, representing various demographic and socioeconomic indicators.

	oa	p1	p2	p3	p4	p5	p6	p7	p8	p9
1	00AFA0001	246.23909318	1	1	1	7.142857146	2.830188678	7.5	0	*****
2	00AFA0002	89.54911505	84	62	0	0	0	0	0	C
3	00AFA0003	238.07749195	212	97	0	0	5.660377356	3.75	0	*****
4	00AFA0004	313.84765432	282	198	0	0	0	3.75	0	C
5	00AFA0005	251.18437691	241	140	0	2.380952382	5.660377356	0	0	C
6	00AFA0006	250.15844796	229	148	0	4.761904764	0	0	0	C
7	00AFA0007	193.92745629	98	73	0	0	0	0	0	C
8	00AFA0008	181.56211866	164	147	0	0	2.830188678	3.75	0	C
9	00AFE0001	107.22482929	94	65	0	2.380952382	0	0	0	C
10	00AAFQ0001	139.4807829	126	99	0	2.380952382	0	0	0	C
11	00AAFQ0002	134.83375375	134	90	0	0	0	0	0	C
12	00AAFQ0003	246.46662989	236	146	0	7.142857146	0	0	0	C
13	00AAFQ0004	268.80224422	155	128	0	0	2.830188678	0	0	*****
14	00AAFQ0005	163.06750693	166	136	0	7.142857146	2.830188678	0	0	C
15	00AAFQ0006	127.75072543	124	102	0	0	2.830188678	0	0	C
16	00AAFQ0007	360.37527522	315	208	0	2.380952382	2.830188678	0	0	C
17	00AAFQ0008	262.25691006	247	136	0	2.380952382	5.660377356	7.5	0	C
18	00AAFQ0009	258.99953591	237	141	0	0	2.830188678	7.5	0	C
19	00AAFQ0010	193.40298756	174	126	0	0	0	0	0	C
20	00AAFQ0011	239.74758385	209	142	0	2.380952382	0	0	0	C
21	00AAFQ0012	326.41371149	294	178	0	4.761904764	0	3.75	0	C
22	00AAFQ0013	263.28791472	250	121	0	5.555555558	11.320754712	0	0	*****
23	00AAFQ0014	252.93738514	207	95	0	4.761904764	2.830188678	0	0	C
24	00AFS0001	194.75601823	133	79	0	4.761904764	9.43396226	32.5	0	C
25	00AFT0001	170.6669583	158	119	0	0	0	0	0	C
26	00AFT0002	190.42091808	174	110	0	0	0	0	0	C
27	00AFT0003	199.37845035	151	122	0	2.380952382	0	0	0	C
28	00AFT0004	178.61265706	162	133	0	0	0	0	0	C
29	00AFX0001	289.70395459	256	152	0	4.761904764	2.830188678	3.75	0	*****
30	00AFX0002	254.79236086	242	119	0	7.142857146	11.320754712	7.5	0	*****
31	00AFX0003	140.09837559	137	84	0	4.761904764	0	0	0	C
32	00AFX0004	492.89971981	441	181	0	15.87301588	18.86792452	18.75	19.999999998	*****
33	00AFX0001	151.76269898	142	99	0	0	0	0	0	C



Data are used here at very localised level – ie Census Outputs

# Census Data for Sampling

## Sample Point Street Listing

Quotas : Total interviews Required = 14

Sex	Interviews Required	Age	Interviews Required	Working Status	Interviews Required
Men	7	18-24	2	Working F-T	7
Women	7	25-34	2	Not Working F-T	7
		35-54	7		
		55+	3		

Number of Premises	Postcode	Thoroughfare	House name / numbers
23	SW13 0EF	Hillersdon Avenue, London	2 :4 :6 :8 :10 :12 :14 :16 :18 :20 :22 :24 :26 :28 :30 :32 :34 :36 :38 :40 :42 :28A :24A
19	SW13 0EG	Hillersdon Avenue, London	1 :3 :5 :7 :9 :11 :15 :17 :19 :27 :29 :31 :33 :FLAT 6 :FLAT 5 :19 :FLAT 4 :19 :FLAT 3 :19 :FLAT 2 :FLAT 1 :19
14	SW13 0EH	Beverly Close, London	1 :2 3: 4: :5 :6 :7 :8 :9 :10 :11 :12 :14 :16

# Census Data for Survey Weighting

- To ensure that the sample profile balances the population profile
- Census Data are needed to tell you what the population profile is
- ....and hence provide accurate weights
- ....and hence provide an accurate measure of the design effect and the true level of statistical reliability / confidence intervals on your survey measures
- But also pre-weighting, for interviewer field dept. (CATI or CAPI) to monitor progress and even-ness of coverage across demographic groups.





# Census Data for Statistical Analysis



# Census Data for Statistical Analysis

- Descriptive Statistics
- Accuracy of these is driven by appropriate weights on these results

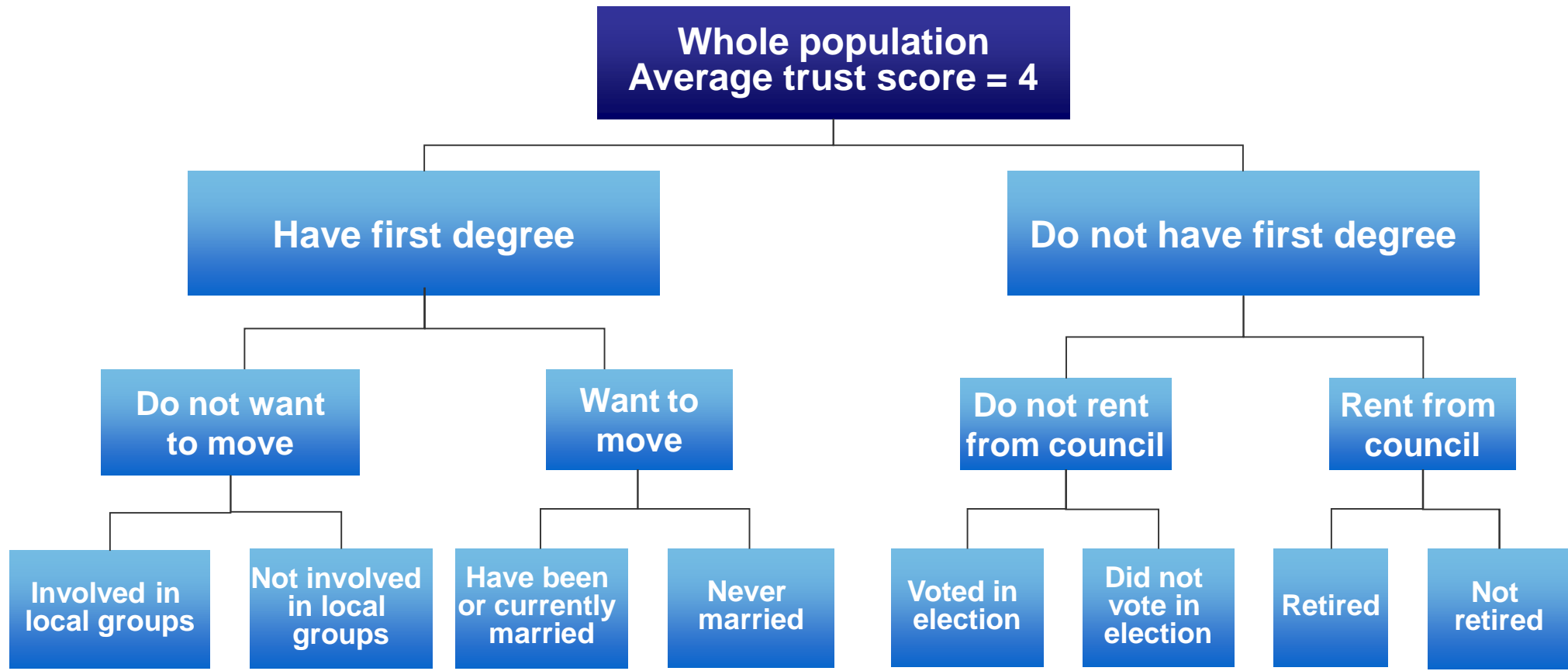
Table 47  
 C18. Image Dimensions -  
 - A financially successful company  
 Base: All who know at least a little about Procter and Gamble

	Total (A)	Sex		Age				Social Class		
		Male (B)	Female (C)	15-24 (D)	25-44 (E)	45-54 (F)	55+ (G)	ABC1 (H)	C2 (I)	DE (J)
UnWtd. Total	1002	452	550	78	351	204	369	589	212	201
Wtd. Total	1028	527	500	88	395	225	319	650	210	167
Well above average (2)	184 18% QU	103 20%	81 16%	14 16%	81 20%	40 18%	49 15%	115 18%	35 17%	34 20%
Slightly above average (1)	263 26% KT	146 28%	117 23%	20 23%	107 27%	53 24%	82 26%	184 28%	41 19%	38 23%
About average (0)	234 23% KNT	121 23%	113 23%	17 19%	90 23%	58 26%	70 22%	153 24%	41 19%	41 24%
Slightly below average (-1)	4 0%	3 1%	1 0%	2 2%	1 0%	- -%	2 0%	2 0%	2 1%	1 0%
Well below average (-2)	2 0%	1 0%	1 0%	- -%	- -%	- -%	2 1%	1 0%	1 1%	0 0%
Don't know	341 33% I	153 29%	188 38%	36 40%	117 30%	73 33%	115 36%	196 30%	91 43%	54 32%
Above average	447 43% KNTU	249 47%	197 39%	35 39%	188 48%	93 42%	131 41%	299 46%	76 36%	71 43%
Below average	6 1%	4 1%	2 0%	2 2%	1 0%	- -%	4 1%	2 0%	3 1%	1 1%
Net average	441 43% IKNTU	245 46%	196 39%	33 37%	187 47%	93 42%	127 40%	297 46%	73 35%	70 42%
Mean score	0.91 KLNTU	0.93	0.88	0.89	0.96	0.88	0.85	0.91	0.90	0.91
Std. Error	0.04	0.05	0.05	0.14	0.06	0.07	0.06	0.04	0.09	0.08

# Census Data for Statistical Analysis

- ...and hence any type of analysis where accurate demographics are needed
- CHAID, Key Drivers using demographics, Mapping Segments

# CHAID: The most and least trusting people in the country

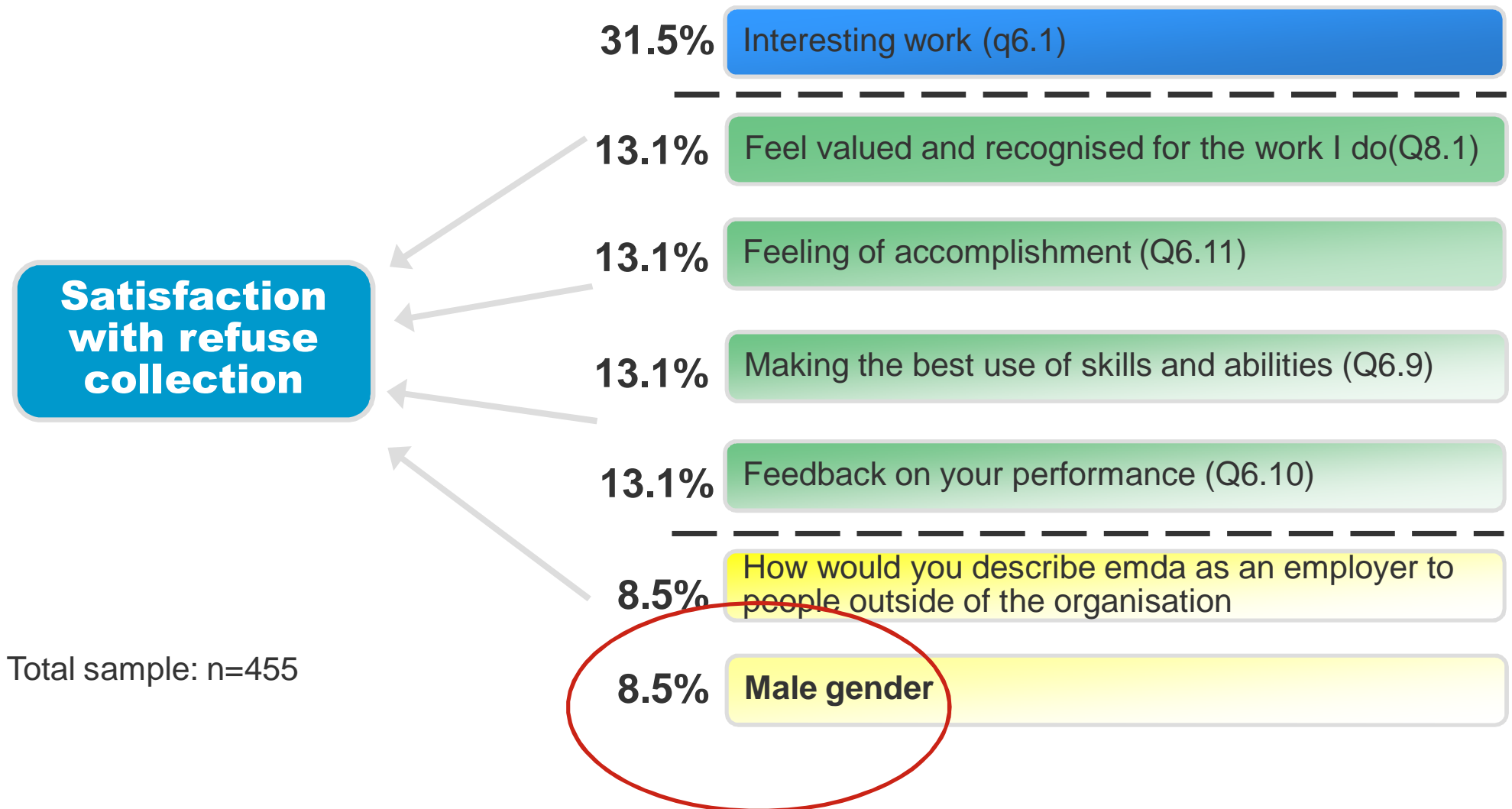


**More trusting**

**Less trusting**



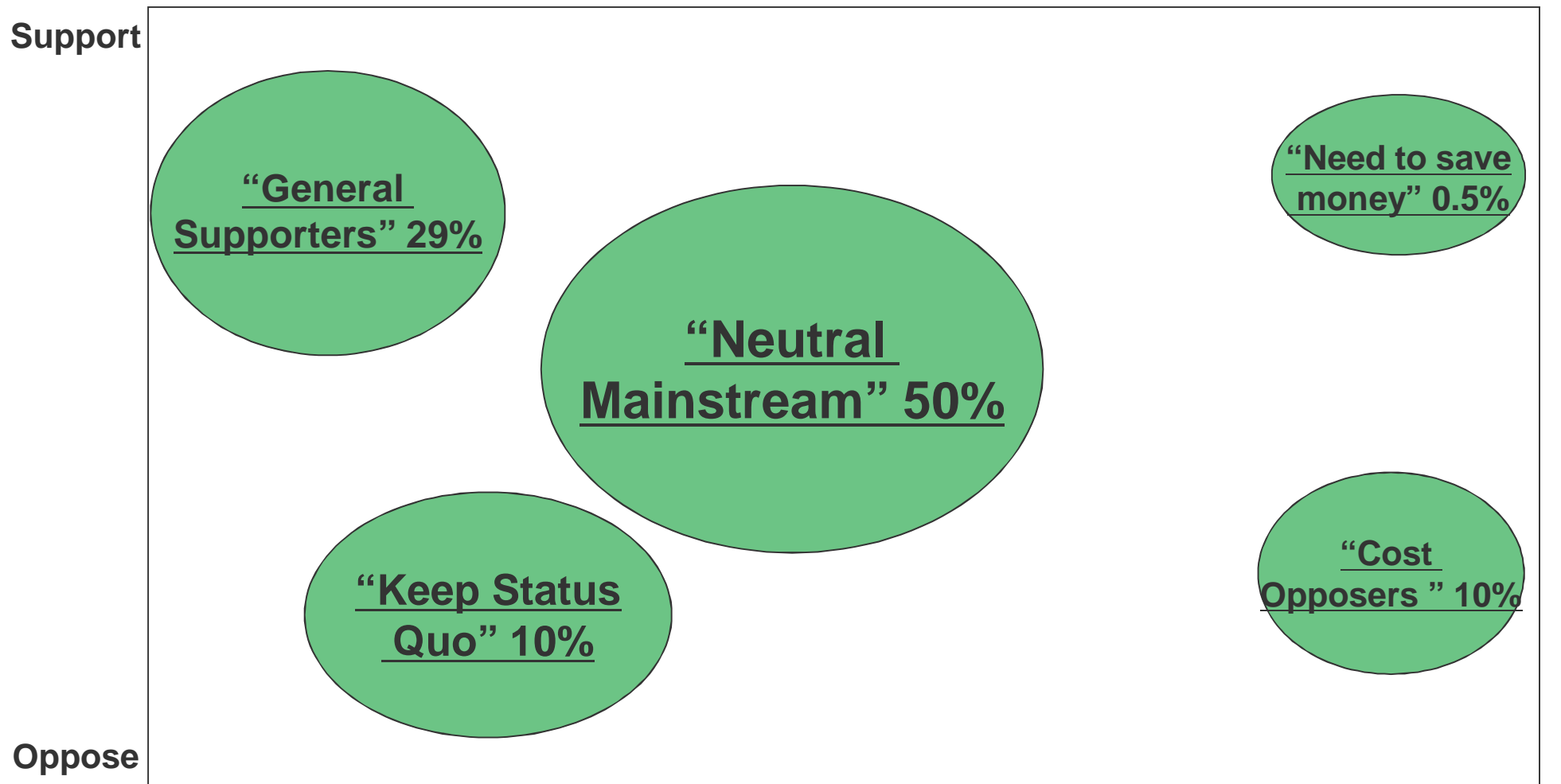
# Key Drivers of Overall Satisfaction



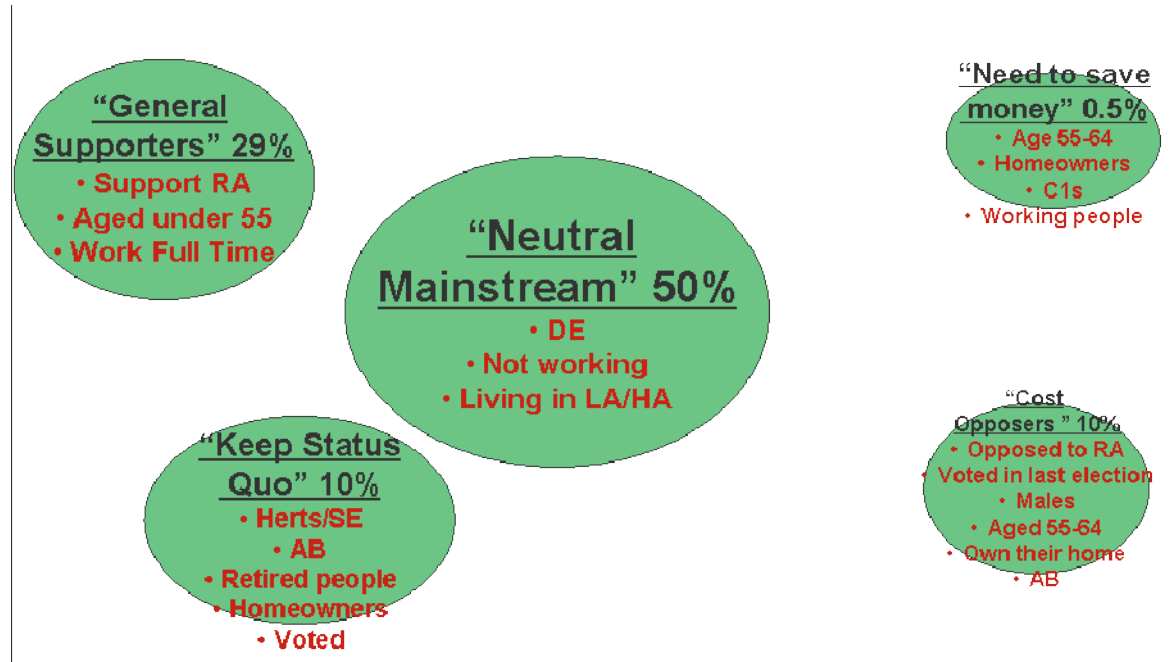
Total sample: n=455



# Segmentation Example: Attitudes towards having Regional Government



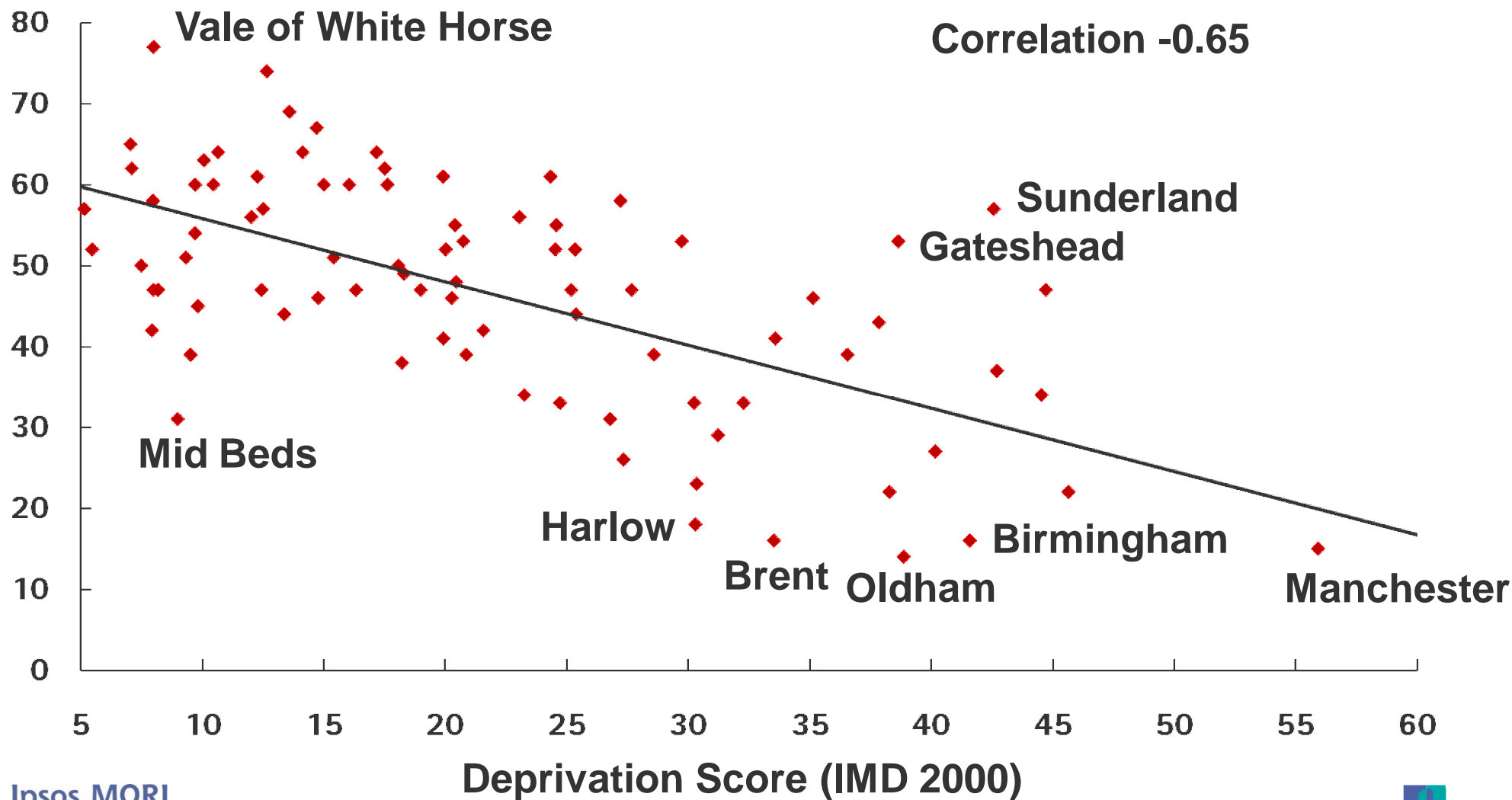
# Segmentation Example: Attitudes towards having Regional Government



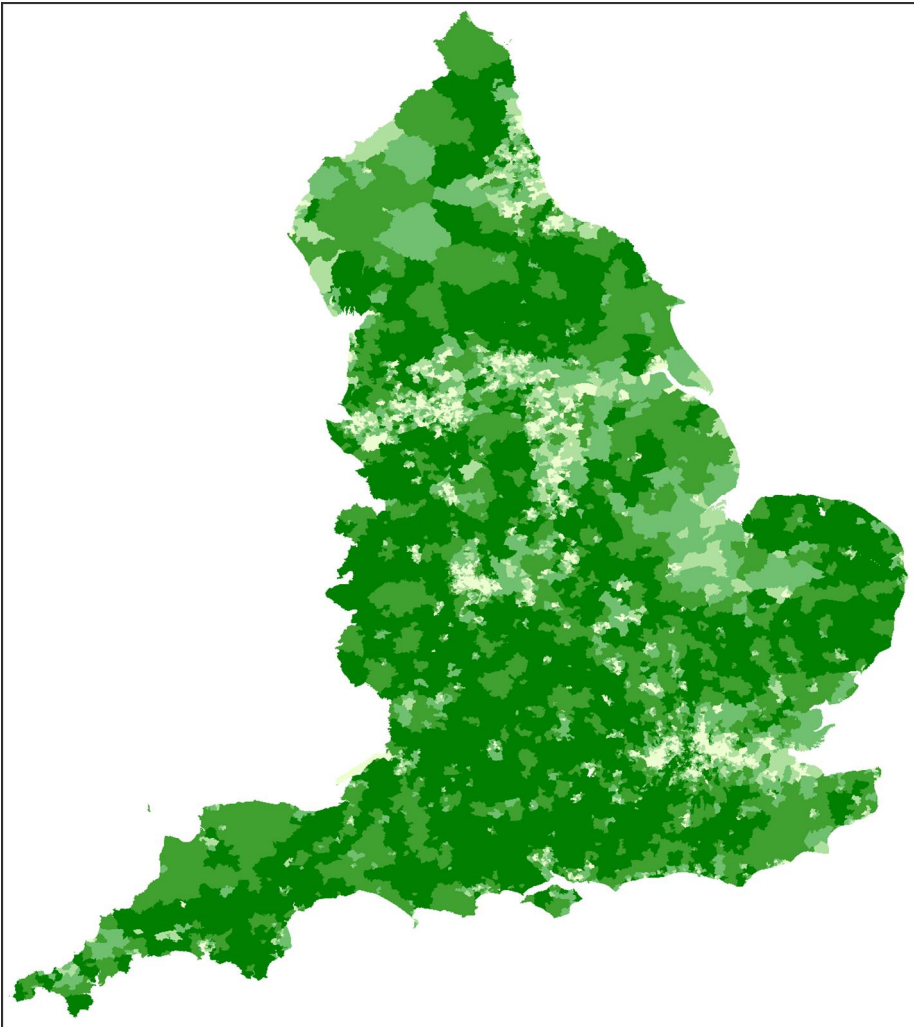
- ...Census data through weighting used to determine:
  - how much of the population falls within each segment;
  - how much of each segment is made up of various census demographics;

# Frontiers Analysis: Satisfaction with council versus descriptive

Net satisfaction with Council ( $\pm\%$ )



# Small area Estimation



England modelled at MSOA-level for Sports Participation

Predictions at small area level based on ambient local demographic profiles

This uses Census data, taking advantage of its availability at local level

# Nearest Neighbours Analysis

- Assessment of which of the 33 London Boroughs are the most similar on the basis of key Demographics for each service type;
- Eg for “housing”, will be based on demographics that most strongly correlate with satisfaction with housing provision
  - “Rented tenure” and “Unemployment rate” will be a negative drivers
- Then calculate standardised distances based on significant variables

	<u>LB1</u>	<u>LB2</u>	<u>LB3</u>	<u>LB4</u>
<b>LB1</b>	0.00			
<b>LB2</b>	2.23	0.00		
<b>LB3</b>	3.96	5.80	0.00	
<b>LB4</b>	3.58	5.40	<b>1.99</b>	0.00

LB3 and LB are the most similar pair to each other



# SARs (Sample of Anonymised Records)

- What?
  - “Microdata files with a separate record for each individual, similar to the sort of data obtained from a sample survey.” (*Centre for Survey Research, 2007*)
- Introduced in 1991 Census and extended in 2001
- Cover the full range of Census Topics, plus derived variables
- Different sets targeted to different user groups
- Records are anonymised to protect confidentiality and access is tightly controlled

# SARs (Sample of Anonymised Records)

- **Best of both worlds**

- **>Census Data:** Relates to individual records rather than aggregates; therefore more flexible and allows multivariate analysis
- **>Survey Data:** Much larger sample size; allowing localised geographic analyses

- **Benefits**

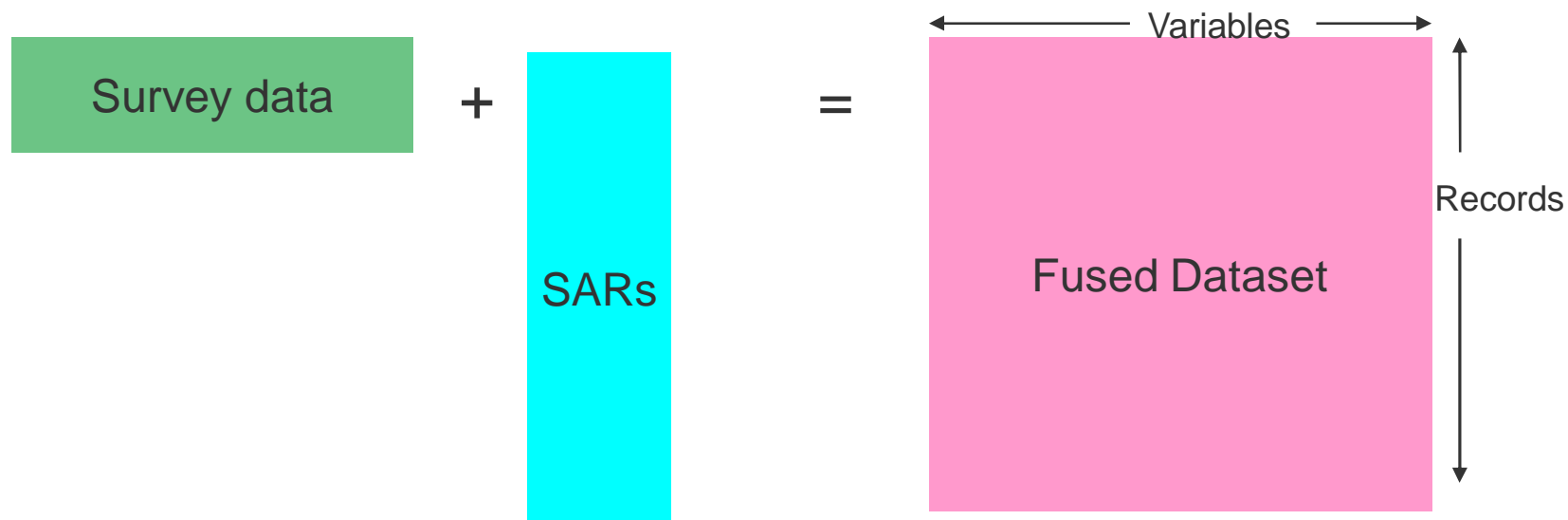
- Coverage: Whole Census population
- Size: Much greater than for surveys. Can include local geographies or special populations (eg 85+)
- Ethnicity & Religion: Can allow analysis at detailed level. Increased interest in analysis of groups

# The SARs family of datasets

SAR datasets			
File	Sample type	Geographical level	Availability
2001 Individual Licensed SAR	3% sample of individuals	UK: Government Office Region (+ Wales, Scot, NI, Inner/Outer London)	Online registration and access via CCSR. Data can be downloaded in SPSS, tab or Stata. Nesstar tool available for online data exploration.
2001 Small Area Microdata	5% sample of individuals	UK: LA (or constituency in NI)	
2001 Special Licence Household SAR	1% hierarchical file	None: England and Wales only	Special Licence via UKDA
2001 Individual CAMS	Same as 2001 Individual Licensed SAR	LA (GB) or Constituency (NI) IMD info for SOA	In house at ONS: These files provide much more detail than the versions which can be used on your own desktop.
2001 Household CAMS	1% sample of households	All of UK	
1991 Individual SAR	2% sample of individuals	GB and NI available separately. Divided into a total of 288 SAR areas	Online registration and access via CCSR. Data can be downloaded in SPSS, tab or Stata. Nesstar tool available for online data exploration.
1991 Household SAR	1% sample of households	GB and NI available separately. Regional geography	

# SARs (Sample of Anonymised Records)

- Opportunities for Market Research
  - Multivariate Analysis eg Factor, Cluster, CHAID, detecting typologies
  - Data fusion, if merged with Survey data.



# Census Data: Present v Future





# The ONS Vision for the Census



- **Web** as the primary dissemination route
- Flexibility for end users **to create own tables** from aggregated data
- Utilities to **discover and access data using data feeds** (machine to machine)
- Data explorer functionality developed in **collaboration with external partners**
- 2001 comparisons which exploit the now **stable geography**
- **Increased set of products** ensuring maximum analytical use
- Bulk delivery on **electronic hard media** to supplement on-line delivery
- Microdata products provided via **secure mechanisms**
- **UK Wide Approach with common disclosure control**

# “STATIC” 2001: View table for selected area



Lead View Table - Microsoft Internet Explorer

Address: http://www.neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=7&b=6116024&c=Baffins&d=14&e=16&g=411170&i=1001x1003x1004&m=0&...

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Neighbourhood Statistics

Home page > Topics > 2001 Census: Census Area Statistics > Country of Birth (UV08)

Area: **Baffins (Ward)**

Country of Birth (UV08)

[About this dataset \(PDF 297Kb\)](#)

[Map this data \(opens a new window\)](#)

[Email me about data releases](#)

Period:

		Baffins	Portsmouth (Unitary Authority)	South East	England
All People (Persons)	Count	13,861	186,703	8,000,645	49,138,831
Born in Europe (Persons)	Count	13,557	178,236	7,603,219	46,045,077
Born in Europe: United Kingdom (Persons)	Count	13,280	172,639	7,349,275	44,594,817
Born in Europe: United Kingdom: England (Persons)	Count	12,807	164,799	7,041,745	42,968,596
Born in Europe: United Kingdom: Scotland (Persons)	Count	244	4,139	152,771	794,577
Born in Europe: United Kingdom: Northern Ireland (Persons)	Count	52	883	37,545	215,124
Born in Europe: United Kingdom: Wales (Persons)	Count	174	2,800	116,368	609,711
Born in Europe: United Kingdom: Part not specified (Persons)	Count	3	18	846	6,809
Born in Europe: Republic of Ireland (Persons)	Count	79	1,004	64,384	460,287
Born in Europe: Channel Islands (Persons)	Count	10	284	6,340	27,550
Born in Europe: Other Western Europe (Persons)	Count	175	3,821	153,767	726,523
Born in Europe: Other Western Europe: EU countries (Persons)	Count	106	2,948	136,409	660,061
Born in Europe: Other Western Europe: EU countries: Austria (Persons)	Count	3	45	3,673	18,076
Born in Europe: Other Western Europe: EU countries: Belgium (Persons)	Count	3	69	5,032	19,795

Area Map: Baffins (Ward)

View: [Choose another table from the list](#)

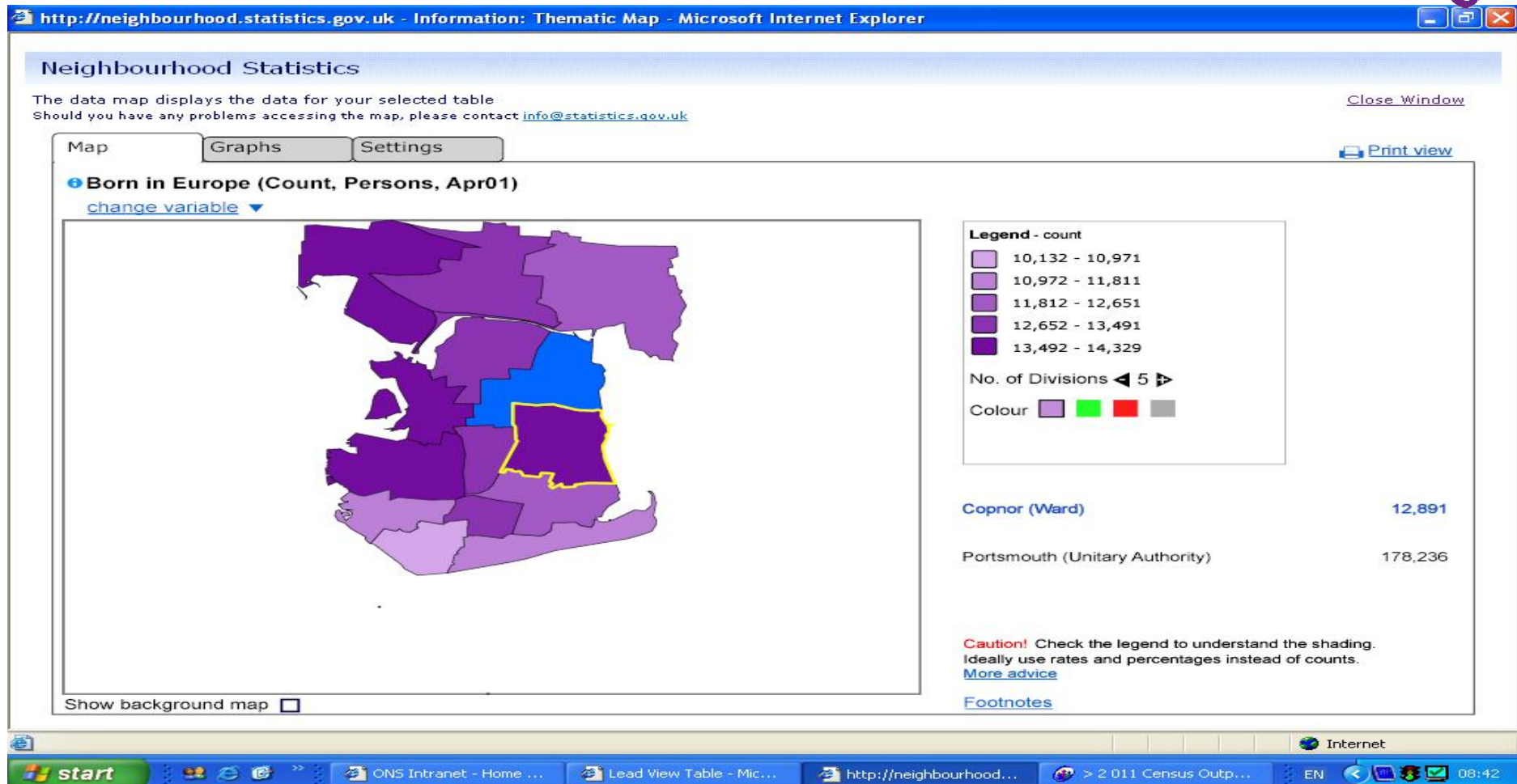
Advanced options: [Compare your data further](#)

External links: [Department for Transport Accessibility Indicators](#), [Data 4 Neighbourhood Renewal](#), [Neighbourhood Renewal Unit](#), [Floor Targets Interactive](#), [Association of Regional](#)

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# “STATIC” 2001: View data in a thematic map



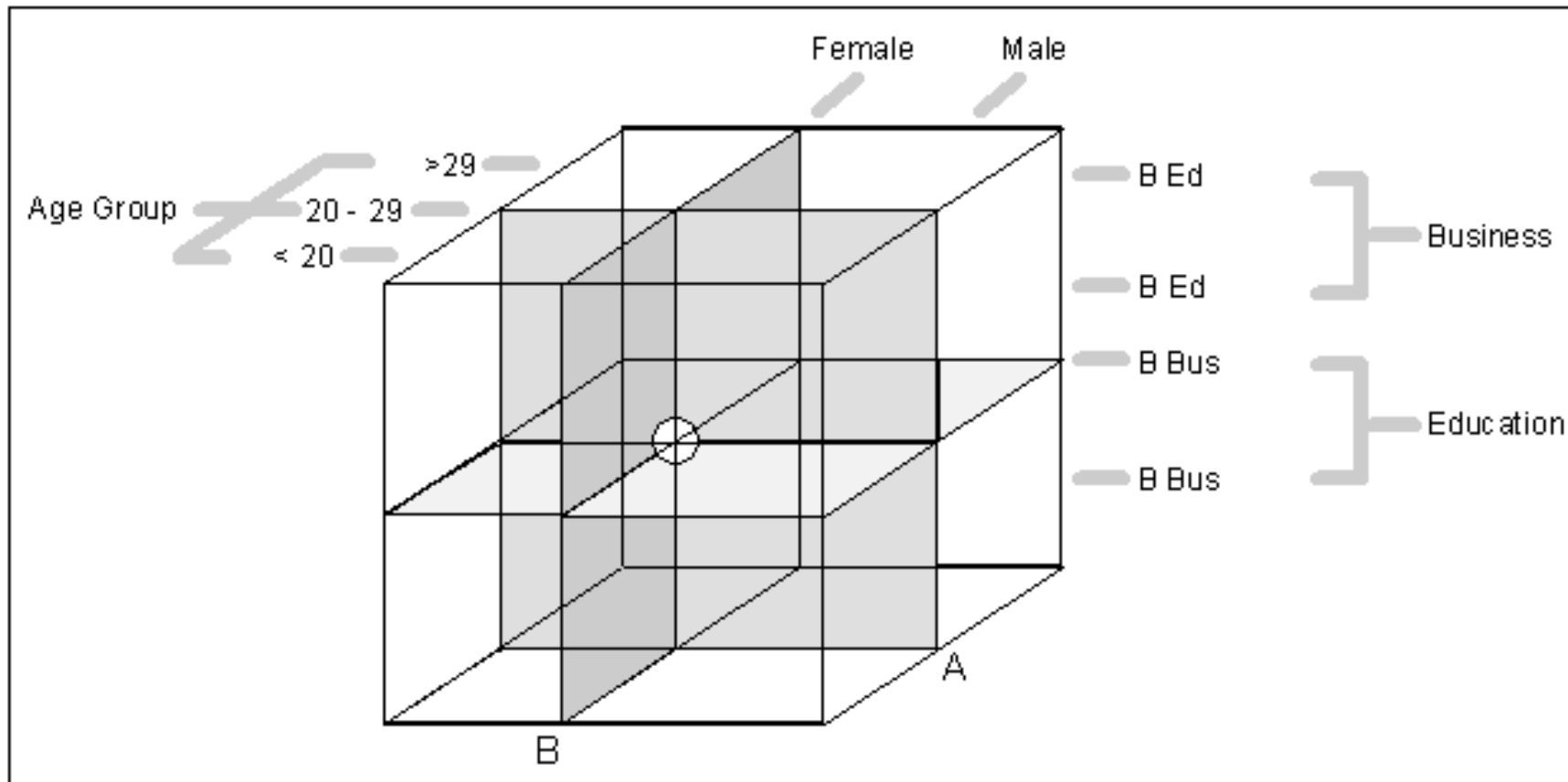
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# ...aiming towards a “Hypercube” situation



of the Australian Bureau of Statistics (ABS)  
That is the “ideal”

# ABS CData : Select topic



The screenshot shows the ABS CData Online website in a Microsoft Internet Explorer browser window. The address bar shows the URL: <https://www.censusdata.abs.gov.au/CDATAOnline/prenav/>. The page header includes the Australian Bureau of Statistics logo and the text "Census CData Online". A "Logout" link is visible in the top right corner. Below the header, there is a navigation bar with "Topic List" and "Topic Search" tabs. The main content area displays "Step 1. Select a Method of Counting:" with two radio button options: "Place of Usual Residence" (selected) and "Location on Census Night". Below this is "Step 2. Select a topic:" with a dropdown menu open, showing a list of topics including "Age & Population", "Birthplace & Ancestry", "Carers", "Children", "Culture & Language", "Disability", "Education & Qualifications", "Employment", "Family & Relationships", and "Income". The current selections are shown as "Sydney (Statistical Division), 0 Topics". At the bottom of the page, there are links for "Privacy", "CC BY", "Copyright", and "Sitemap".

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# ABS CData: Choose the Statistics



The screenshot shows the ABS CData Online website in a Microsoft Internet Explorer browser window. The address bar shows the URL: <https://www.censusdata.abs.gov.au/CDATAOnline/prenav/?method=Place+of+Usual+Residence&topic=Chi>. The page title is "Australian Bureau of Statistics Census CData Online".

The main content area is titled "Select a topic using one of the following selection methods:" and shows "Current Selections: Sydney (Statistical Division), 0 Topics". There are two tabs: "Topic List" and "Topic Search".

The "Topic Search" tab is active, showing three steps:

- Step 1. Select a Method of Counting:** [What is a count method?](#)
  - Place of Usual Residence
  - Location on Census Night
- Step 2. Select a topic:** [What is a topic?](#)
  - Children
- Step 3. Select a table and click 'Next':**
  - Create My Own Childcare Table
  - Unpaid Child Care by Sex
  - Unpaid Child Care by Sex by Indigenous Status

At the bottom of the form, there are buttons for "< Back" and "Next >".

The footer contains links for "Privacy", "Disclaimer", "Feedback", "© BY", "© Copyright", and "Sitemap".

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# ABS CData: Create table



The screenshot shows the ABS CData Online interface in a Microsoft Internet Explorer browser. The page title is 'Statistical Division (SD) by Sex Male/Female (SEXP)'. The interface includes navigation tabs for 'Table View', 'Graph View', and 'Map View', along with a 'New Table' button. A 'Download Table' dropdown menu is set to 'Comma Separated Value (.csv)'. The main content area displays a table with the following data:

Sex Male/Female (SEXP)	Male	Female	Total
Sydney	2,028,729	2,090,461	4,119,190
Total	2,028,729	2,090,461	4,119,190

Below the table, the data source is cited as '2006 Census of Population and Housing'. The footer contains links for Privacy, Disclaimer, Feedback, Copyright, and Sitemap.

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# ABS CData: View added dimension



https://www.censusdata.abs.gov.au/CDATAOnline/webapi/customiseTable.faces - Microsoft Internet Explorer

Address: https://www.censusdata.abs.gov.au/CDATAOnline/webapi/customiseTable.faces

Percentage: None

Drag and Drop Item into Bin to remove from table

For further information see [Confidentiality of Census Data](#).

Sex Male:Female (SEXP)	Male		Female		Total	
	Sydney	Total	Sydney	Total	Sydney	Total
<b>Age 10 Year Age Groups (AGEP)</b>						
0-9 years	276,433	276,433	260,528	260,528	536,961	536,961
10-19 years	277,456	277,456	262,946	262,946	540,402	540,402
20-29 years	299,728	299,728	301,593	301,593	601,321	601,321
30-39 years	314,739	314,739	329,061	329,061	643,800	643,800
40-49 years	299,415	299,415	307,451	307,451	606,866	606,866
50-59 years	247,453	247,453	254,279	254,279	501,732	501,732
60-69 years	159,998	159,998	162,188	162,188	322,186	322,186
70-79 years	100,477	100,477	118,882	118,882	219,359	219,359
80-89 years	47,143	47,143	77,097	77,097	124,240	124,240
90-99 years	5,734	5,734	15,937	15,937	21,671	21,671
100 years and over	152	152	500	500	652	652

**Data Source: 2006 Census of Population and Housing**  
You can also add other classifications to your table by selecting [Customise Table](#).

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# ABS Table Builder : Selection



ABS TableBuilder - Table View - Customise Table - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: https://www.censusdata.abs.gov.au/TableBuilder/webapi/jsf/tableView/customiseTable.xhtml

Table View | Graph View | Map View

Customise Table | My\_Custom\_Data | My\_Tables | Download Table: Excel 2007 (.xlsx)(max 16,384 columns by 1,048,500 rows and less than 400,000 cells) Go

Change Database... Hide

Select items below, then build your table. Help

Add to Row Add to Column Remove from Table

Collapse All | Un-tick All | 0 items selected.

- Geographical Areas (Enumeration)
  - Person Variables
    - People Characteristics
      - Ethnicity
        - ANCP Ancestry Multi Response [275]
        - ANC1P Ancestry 1st Response [12]
        - ANC2P Ancestry 2nd Response [12]
        - BPPF Country of Birth of Mother [4]
        - BPLP Country of Birth of Person [12]
        - BPMP Country of Birth of Father [4]
        - CITP Australian Citizenship [4]
        - INGP Indigenous Status [6]**
        - RELP Religious Affiliation [10]

Retrieve Data  Automatically Retrieve Data Percentage: None

**State/Territory (STE) by INGP Indigenous Status**  
 Counting: Persons Place of Enumeration

For further information see [Confidentiality of Census Data](#).

Table cell count, including totals: **70 (7 columns x 10 rows)**.

INGP Indigenous Status	Non-Indigenous	Aboriginal	Torres Strait Islander	Both Aboriginal and Torres Strait Islander	Not stated	Overseas visitor	Total
State/Territory (STE)							
New South Wales	6,002,920	130,493	4,743	2,950	387,585	57,046	6,586,737
Victoria	4,590,894	27,095	2,206	848	259,862	34,440	4,915,345
Queensland	3,612,152	98,778	18,391	10,475	234,164	72,919	4,046,879
South Australia	1,406,553	24,086	1,045	434	67,652	9,237	1,509,007
Western Australia	1,778,333	56,642	1,054	1,005	127,947	21,266	1,986,247
Tasmania	430,437	14,788	1,245	636	21,890	1,800	470,796
Northern Territory	137,682	51,933	636	1,355	18,823	6,661	217,090
Australian Capital Territory	305,754	3,677	183	107	15,260	2,918	327,899
Other Territories	2,087	209	12	0	267	71	2,646
Total	18,266,812	407,701	29,515	17,810	1,133,460	206,358	20,061,646

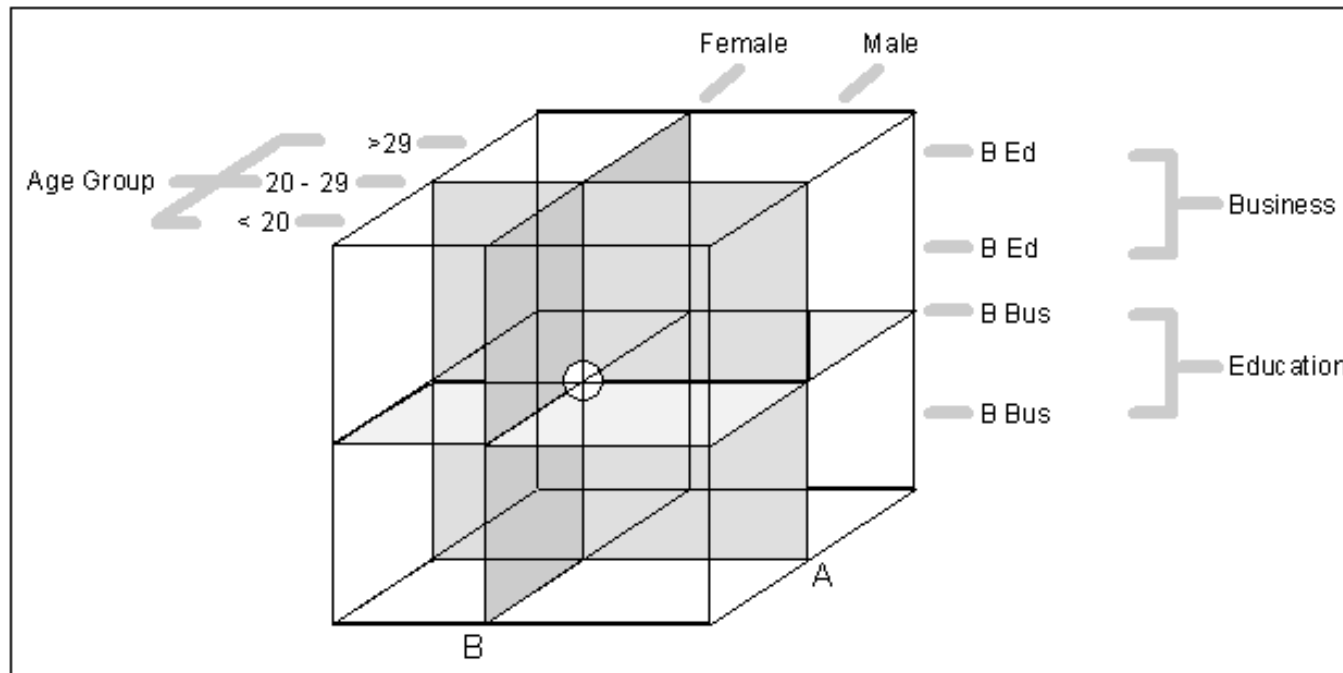
Data Source: 2006 Census of Population and Housing

You can also add other classifications to your table by selecting [Customise Table](#)

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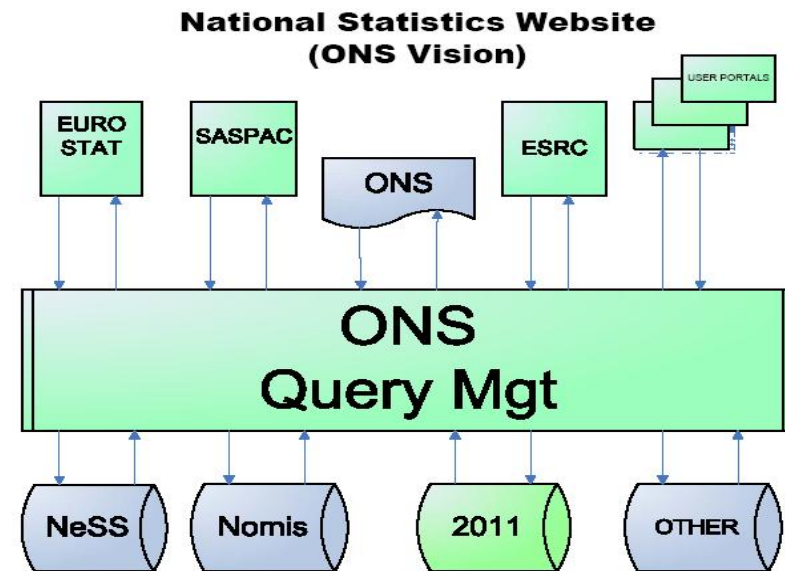
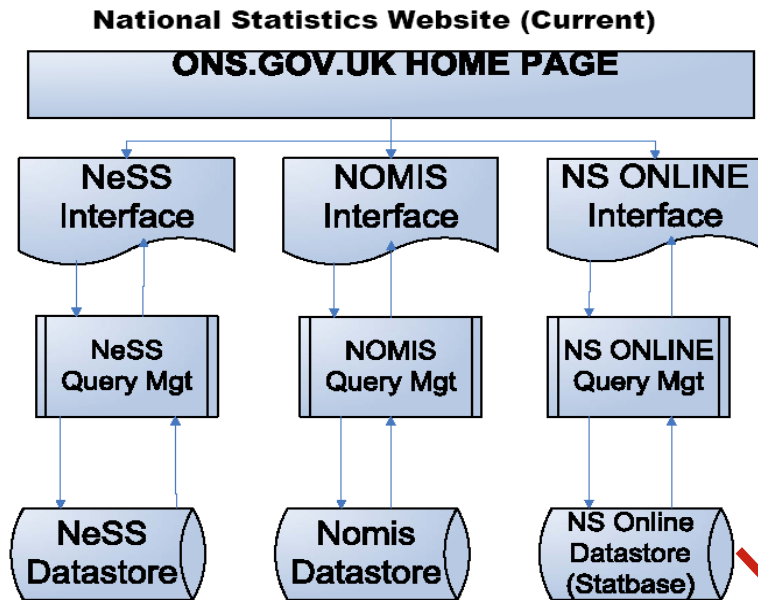
# ...aiming towards a “Hypercube” situation



- of the Australian Bureau of Statistics (ABS)
- That is the “ideal” ... **BUT** .....
- Disclosure controls constraints will not allow complex hypercube cuts at low geographic level (eg sub-LA/UA)
- **ONS does not propose to provide, and ONS is not intending to provide table building facilities on line.**
- ABS cube is a aspiration that cannot be so easily realised due to disclosure control measures;
- Not possible for 2011 Census but perhaps possible for other ONS datasets in the future



# Current v Future ONS Website Services



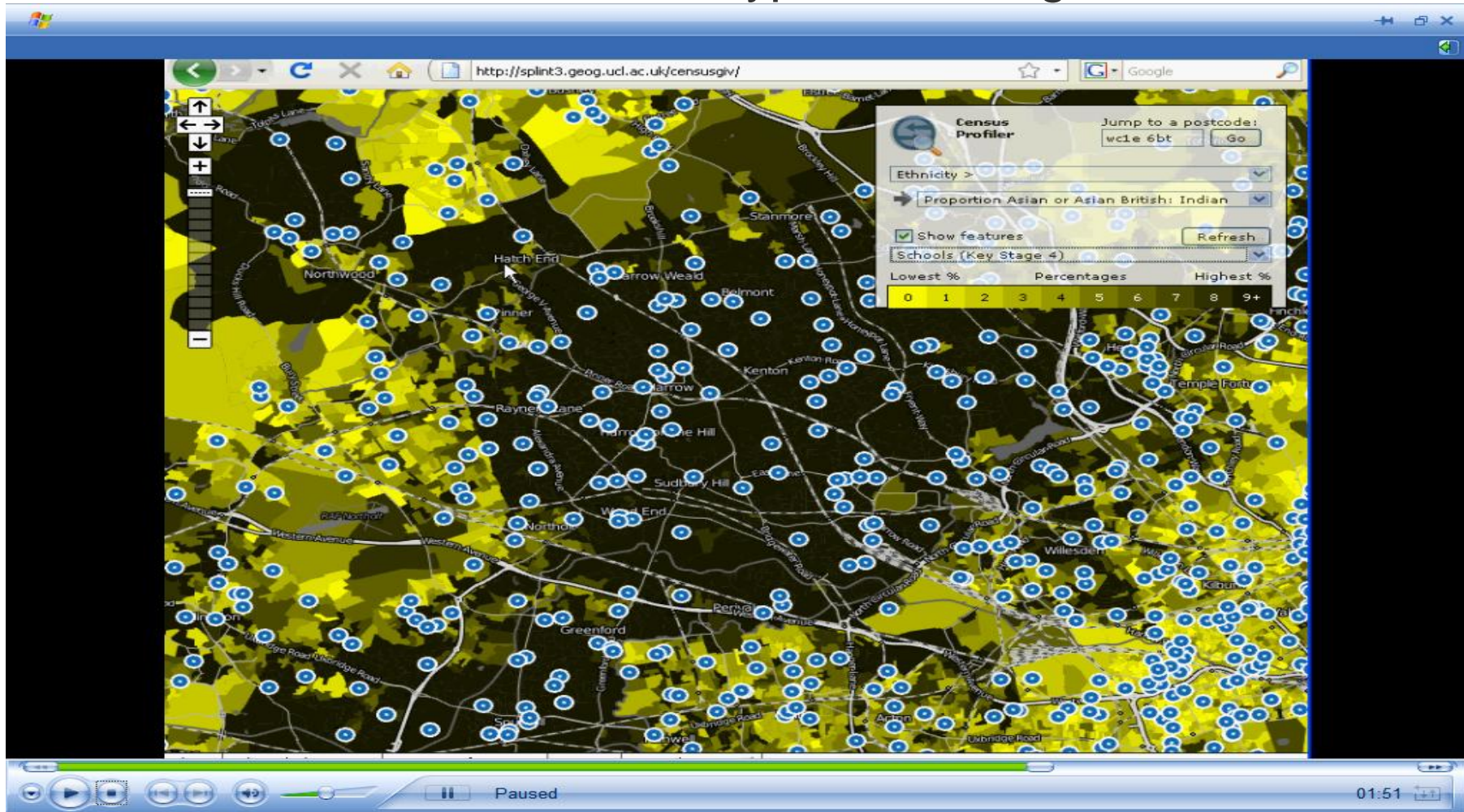
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# “DYNAMIC” 2011 : “Mash Up” Merge Census and schools data on-line.



...enables this type of “mixing”



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# Restrictions

- 2011 Census outputs below UA/LA level **will only hold the information** required to produce the tabular outputs defined in the **consultation**;
- although data users will be able to manipulate this data into a format of their choosing.
- Larger datasets of about 10 dimensions are likely to be only available at Local Authority level and above due to disclosure constraints and physical constraints on the ONS website.

# So what does all this mean for us?

- Improvements over and above 2001 dissemination:
  - **Easier and faster** ways to discover and access the datasets;
  - The **ability to manipulate** the presentation of standard output (hide, choose position of variables in the layouts etc);
  - The **inclusion of some metadata** within the datasets and supporting information closely associated with the datasets on the website (so users do not have to go to a different part of the ONS website as they do now);
  - The potential to enable some **selection across datasets** to create user defined tables;
  - The proposal to create large themed **cubes at Local Authority and above** that provide more than is in the main output below LA, and more than in 2001;
  - The **disclosure control measures do not include adjustment of counts**, enabling consistency and additivity.

(Information on this slide courtesy of Chris Ashford, ONS)

# So what does all this mean for us?

- User consultation on the more specialist outputs, microdata, origin destination etc, is planned for the Autumn;
- The ONS will be seeking to improve on 2001, particularly regarding content and access;
- Any firm proposals on these will, of course, depend on consultation.

(Information on this slide courtesy of Chris Ashford, ONS)

# Alternatives to Census Data?

- Large scale, robust samples
  - Eg NRS, LFS, GHS
  - Usually up-to-date / annual
  - Cannot go to low detailed geographic level
- Mid-year estimates
  - But these are based / dependent on Census data!
- Royal Mail Postcode Address File (PAF)
  - Counts of addresses only by geography
  - Very limited when setting quotas, stratification variables, conduct weighting

# Our work without Census Data



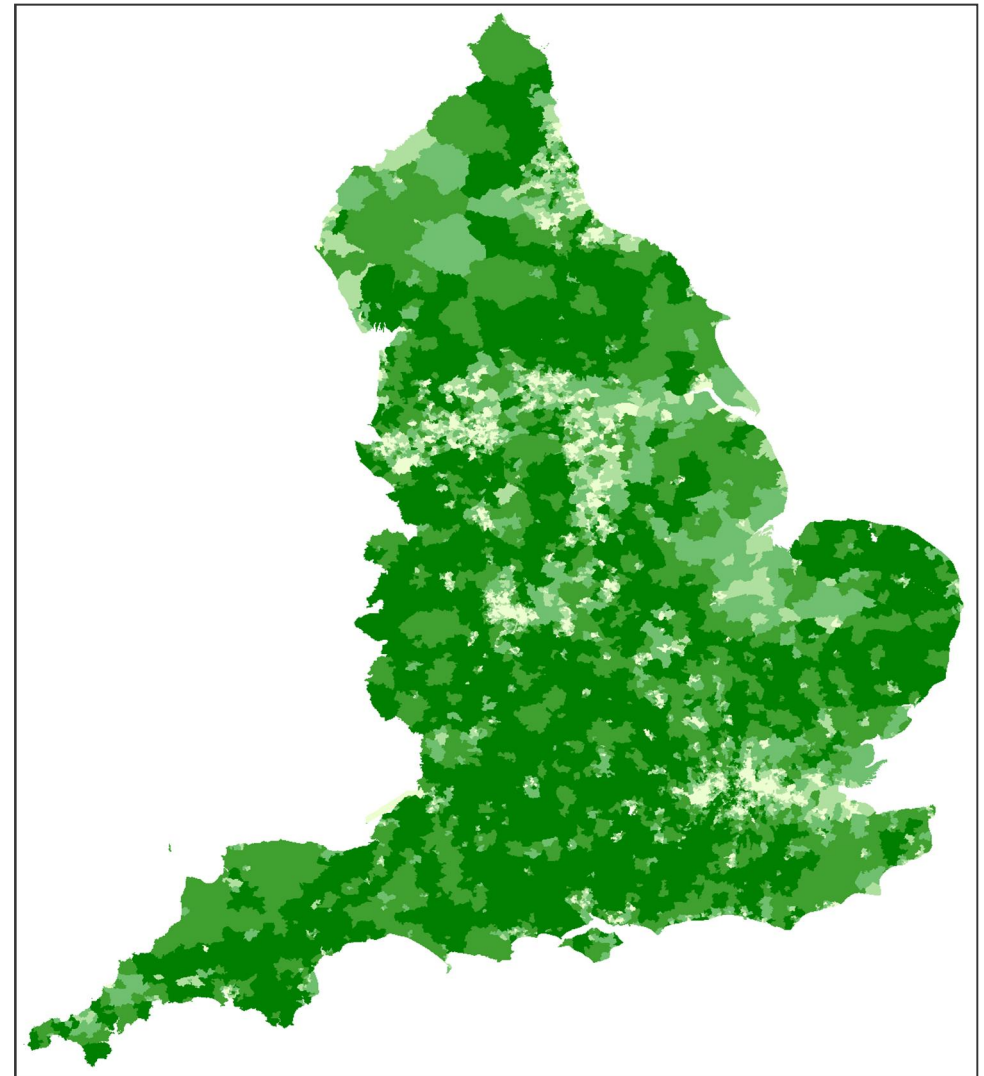
# Our work without Census Data

- Where would we get our sample frames from
  - To the same level of detail / accuracy / completeness?
- How would we set quotas?
- How would we know how many people to interview in each local area (clustering)?
- ...and of each demographic group (stratification)?
- How could we weight our data so that it most accurately reflect the population?
  - Especially critical for on-line surveys
- If we cannot weight our data, then any results we produce would not be accurate.
- ...and this carried forward to any “value-add” statistical analyses we carry out



# Summary and Conclusions

- So we in Market Research are fully dependent on the availability of Census data to conduct accurate work
- We eagerly await the disseminated output of the Census.....(and associated consultations)



Thank you for listening

Andrew  
Zelín