From Research Question to Exploratory Analysis

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Ros Southern
UK Data Service

21 Nov 2014

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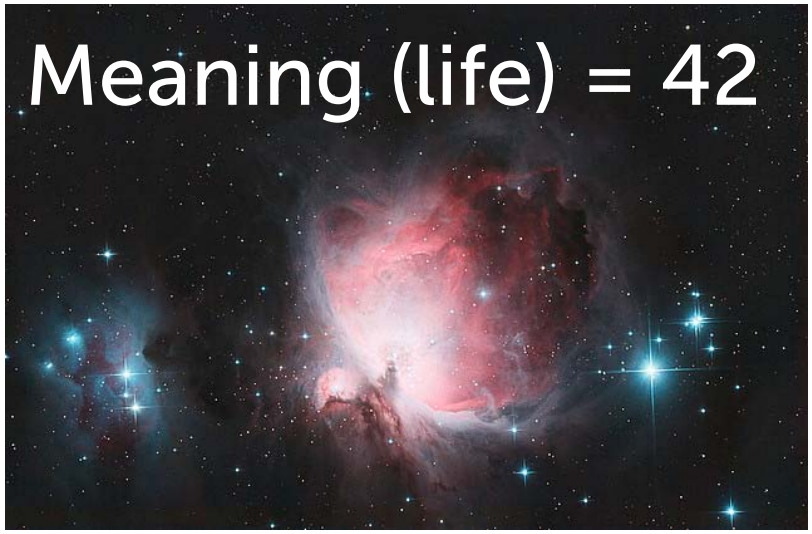
Today

- Research questions and data for questions
- Finding data in the UK Data Service

- Evaluating data for your research
- Exploratory data analysis

Session 1



- Its hard to understand numbers in the abstract
- Its hard to answer if you don't know the question
- Its easier to search when you know what you're looking for

Image: Some rights reserved by zAmb0ni (via flickr)

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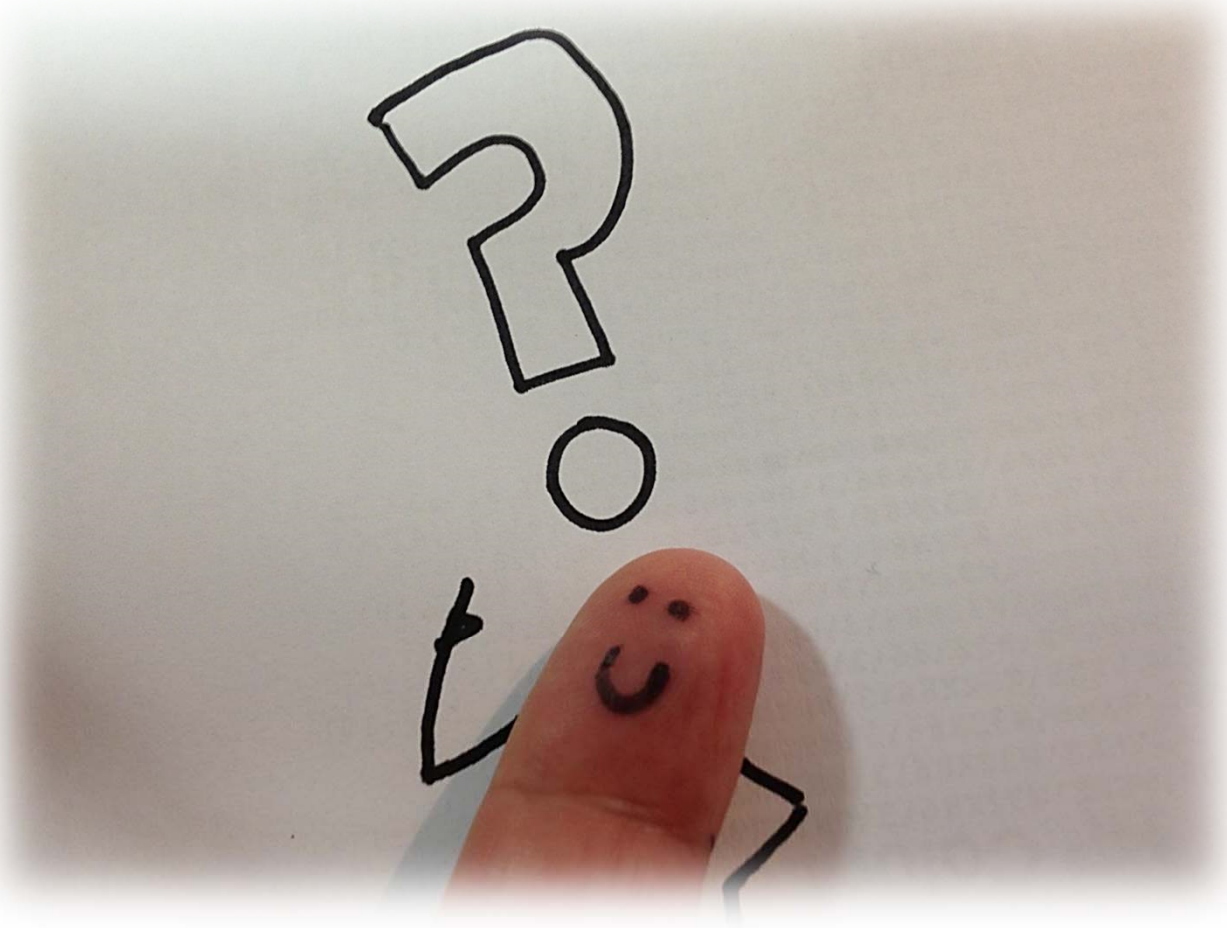
Something to think about

https://www.youtube.com/watch?v=pciVOUyduKo&feature=player_embedded#t=181

At 3.00

What questions come to mind?



Is it a quantitative question?

Easy to overstate differences but…

Quantitative	Qualitative
Looks for patterns in something that can be measured	Looks for themes that appear
Must be able to count characteristics	n/a
Usually seeks to create generalisable conclusions	n/a
Best at capturing stated opinions or characteristics	Better at capturing meanings

Types of research question

- Descriptive
- Explanatory type questions
  - Confirming theory
  - Generating theory

Starting to pin down your question

- What – characteristic(s) are you interested in
- Who – has these characteristics?
  - (When? Where?)
- Might need to tease this out…

Define your terms…

- Theory
- Literature
- Defined by statute, policy…
- Standard classifications
- Established by you to improve on that of others
- What's understandable
- What's in the data

Who?

- Units of analysis
  - Individuals
  - Households
  - Companies
  - Countries
- Population
  - Geographic
  - Socio-economic
  - Demographic
  - Temporal

Example

European Journal for Sport and Society 2013, 10 (3), 215-239

Ethnic differences in sports participation in England

Vanessa Higgins[1] and Angela Dale[1]

[1]University of Manchester, United Kingdom

Abstract: Aim: to provide a detailed picture of ethnic differences in sports participation in England. Design: Health Survey for England data is used. Percentages and age-standardised logistic regression models compare participation in ten separate sports for eight ethnic groups. Logistic regression models explore ethnic differences in regular sporting activity allowing for a range of explanatory variables (for all respondents and for White, South Asian and Black respondents separately). Results: There is major variation in levels and types of sports participation for different ethnic groups. Sports participation of ethnic minority men is depressed by their socio-economic disadvantage and migrant status

Higgins and Dale

Research Question:
"are there differences in sports participation by ethnic group (when other factors have been accounted for)"

Descriptive and generates theory

Units: Individuals

Population:
Aged 16+ Individuals in England
In 2013

Topics:

Ethnicity – fairly standard groups available in the data

Standard classifications for economic activity, deprivation, socio-economic classification

Ethno-religious classification added in response to the literature

Bespoke migration classification

Honing a research question

Do 16-17 year olds have different attitudes to political participation than 18-19 year olds?

- What do we mean by political participation?
- What are our units of analysis?
- Who is in our population?
  - What units of analysis are we interested in?
  - For what geography?
  - For when?

Data for quantitative questions:

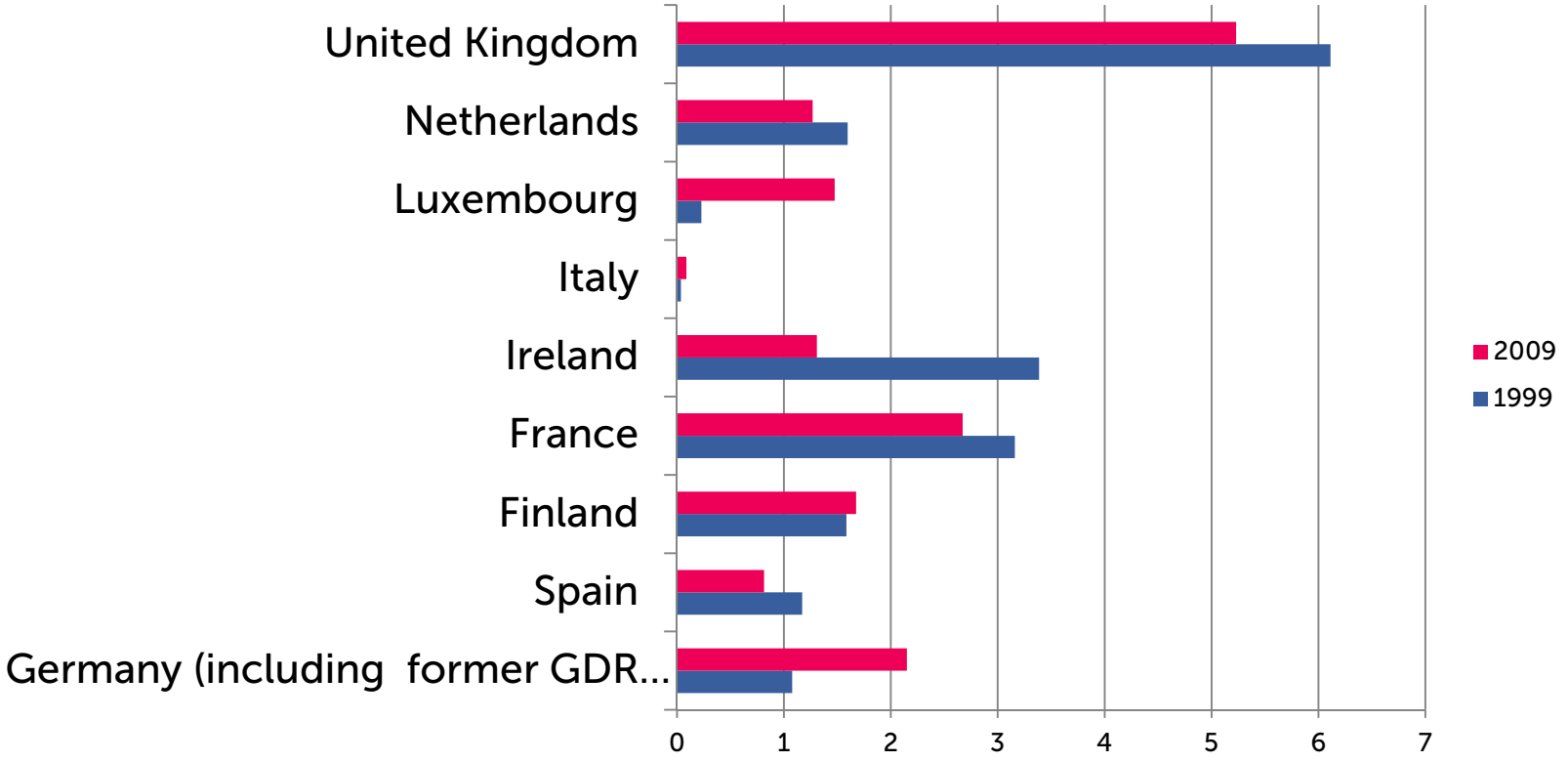
Type of analysis	Type of data
Individuals, families, households, businesses at one point in time	Cross-sectional surveys, census microdata (e.g. Time Use Survey)
Comparing experience groups of individuals, families, households etc. at multiple points in time	Repeated cross-sections (e.g. different years of British Crime Survey, Labour Force Survey)
Following individuals over time	Longitudinal data (e.g. Understanding Society, National Child Development Survey)
Small geographic areas	Census aggregate data, flow data, neighbourhood statistics
Comparing countries (over time)	International time series (e.g. World Bank Indicators)

International macrodata

Types of questions:

- What has happened in trends for percentage of welfare budget spent on housing for EU more countries?
- Has the trend in welfare benefits changed since the Economic Crisis?
- Is this relationship the same for different countries?
- ….for different types of countries?

e.g. Percentage of welfare expenditure spent on housing 1999 and 2009



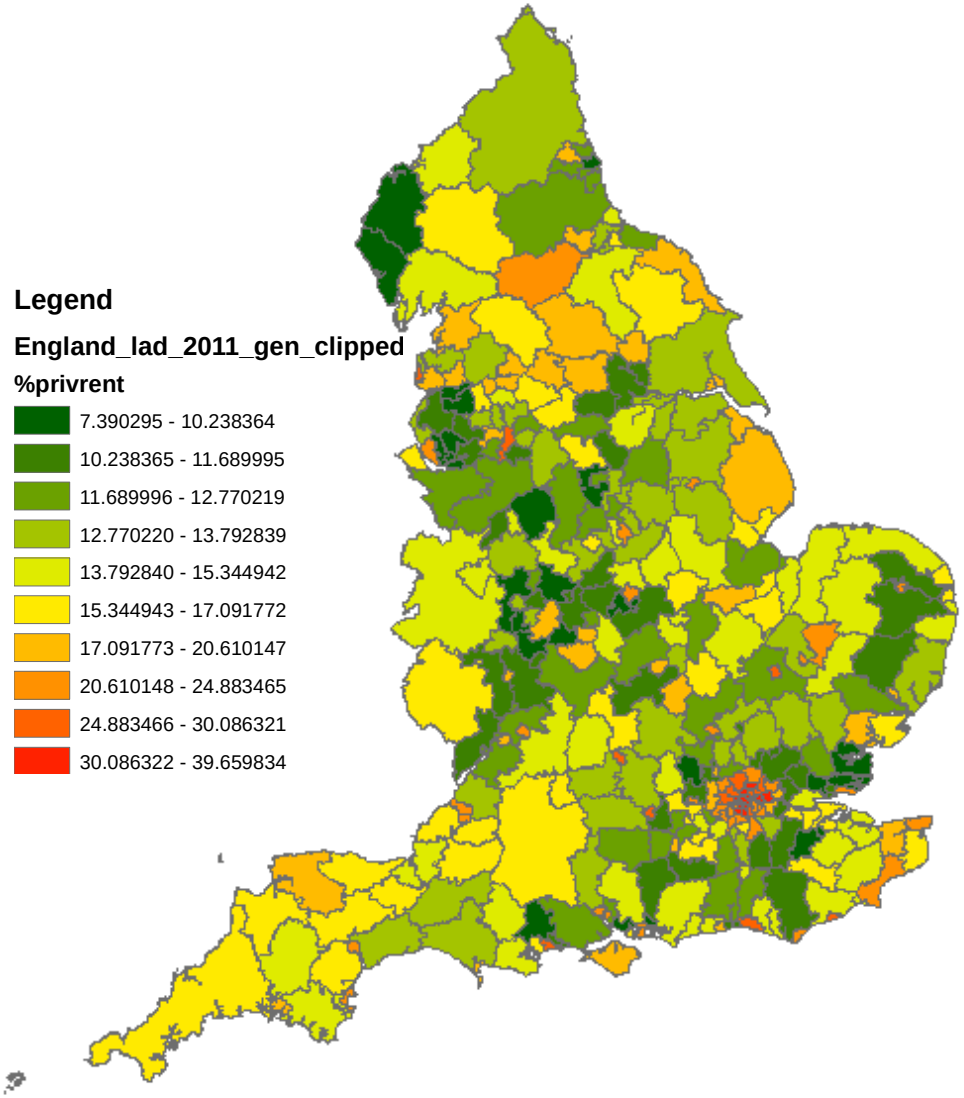
Bibliographic citation: Eurostat (2012): New Cronos (Data downloaded: 25 April 2012).
ESDS International, University of Manchester. DOI: http://dx.doi.org/10.5257/eurostat/nc/2012-04-25

Census tables

Types of questions:

- Which areas have the highest level of privately rented accommodation?
- Do areas with high rates of privately rented accommodation contain high rates of unemployed persons?
- Is renting more or less common in 2011 Westminster than it was 10 years earlier?

Percent private rented by LAD 2011



Office for National Statistics, 2011 Census: Aggregate data (England and Wales) [computer file]. UK Data Service Census Support. Downloaded from: http://infuse.mimas.ac.uk . This data is licensed under the terms of the Open Government Licence [http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2].

Contains National Statistics data © Crown copyright and database right 2012
Contains Ordnance Survey data © Crown copyright and database right 2012

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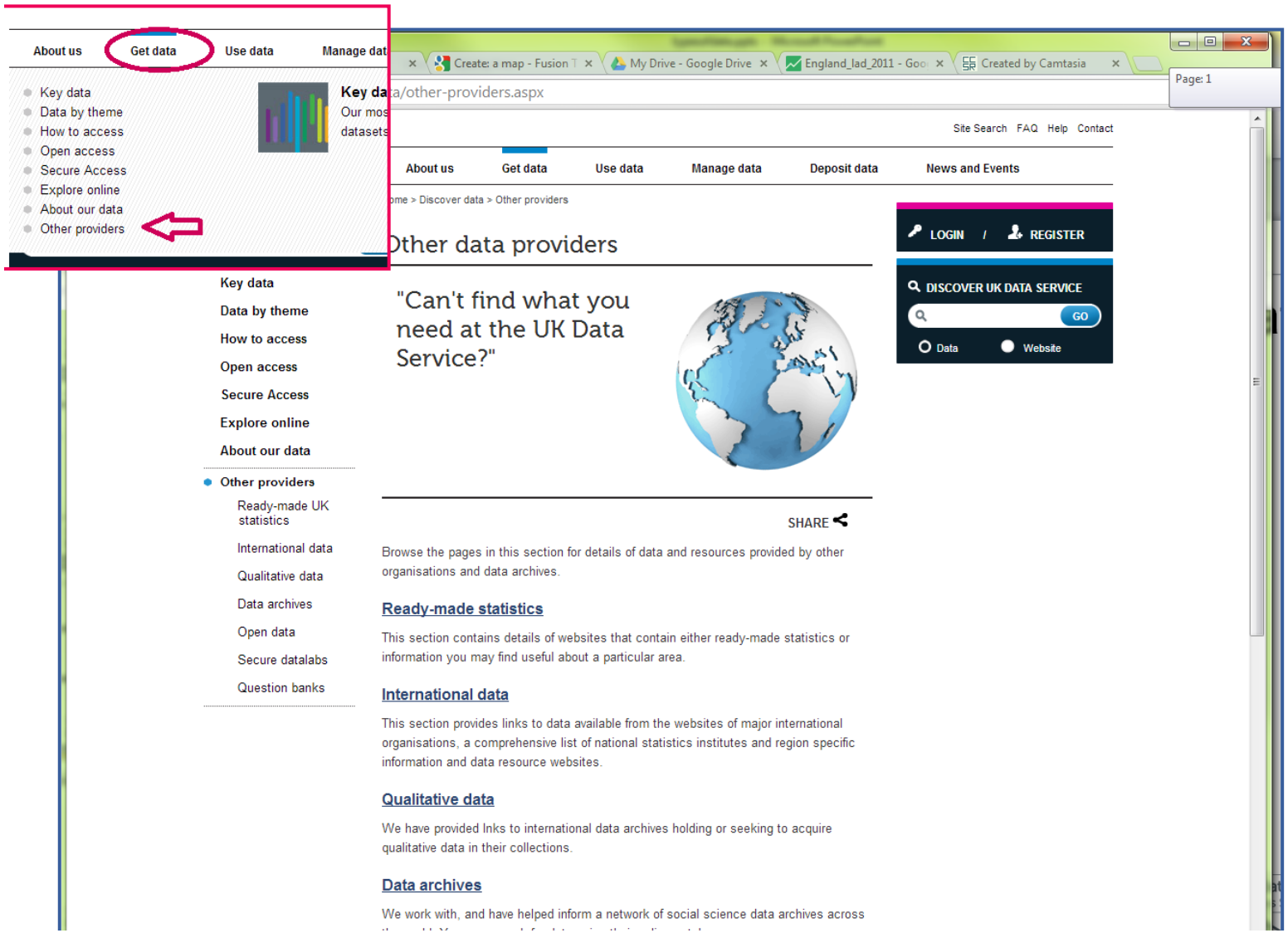
A pointer to other useful sources of data

From Get Data select ‘Other providers’



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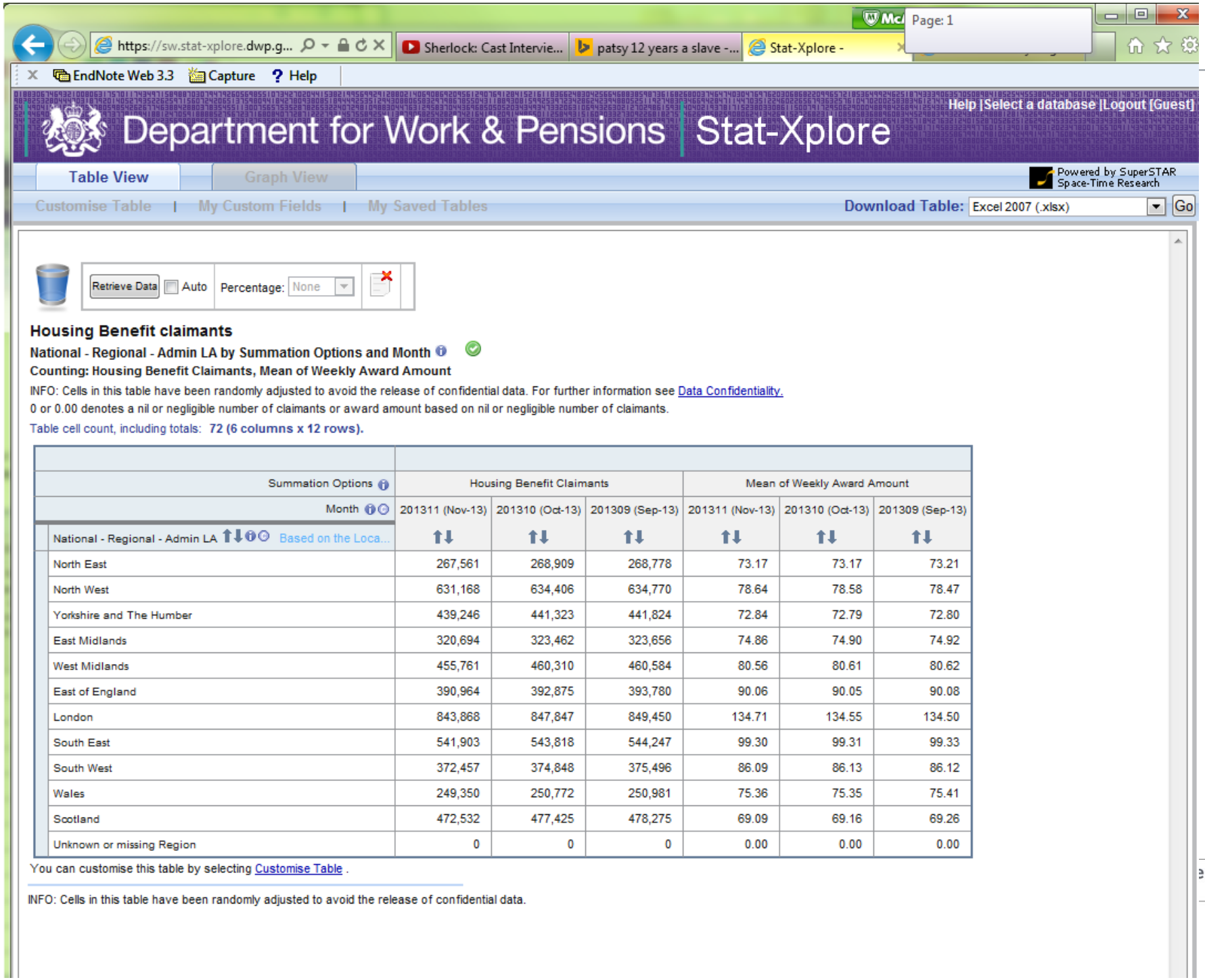


Housing Benefit claimants

National - Regional - Admin LA by Summation Options and Month

Counting: Housing Benefit Claimants, Mean of Weekly Award Amount

INFO: Cells in this table have been randomly adjusted to avoid the release of confidential data. For further information see Data Confidentiality.

0 or 0.00 denotes a nil or negligible number of claimants or award amount based on nil or negligible number of claimants.

Table cell count, including totals: **72 (6 columns x 12 rows).**

Summation Options	Housing Benefit Claimants			Mean of Weekly Award Amount		
Month	201311 (Nov-13)	201310 (Oct-13)	201309 (Sep-13)	201311 (Nov-13)	201310 (Oct-13)	201309 (Sep-13)
National - Regional - Admin LA Based on the Loca...						
North East	267,561	268,909	268,778	73.17	73.17	73.21
North West	631,168	634,406	634,770	78.64	78.58	78.47
Yorkshire and The Humber	439,246	441,323	441,824	72.84	72.79	72.80
East Midlands	320,694	323,462	323,656	74.86	74.90	74.92
West Midlands	455,761	460,310	460,584	80.56	80.61	80.62
East of England	390,964	392,875	393,780	90.06	90.05	90.08
London	843,868	847,847	849,450	134.71	134.55	134.50
South East	541,903	543,818	544,247	99.30	99.31	99.33
South West	372,457	374,848	375,496	86.09	86.13	86.12
Wales	249,350	250,772	250,981	75.36	75.35	75.41
Scotland	472,532	477,425	478,275	69.09	69.16	69.26
Unknown or missing Region	0	0	0	0.00	0.00	0.00

You can customise this table by selecting Customise Table .

INFO: Cells in this table have been randomly adjusted to avoid the release of confidential data.

Pros and Cons

- Quality of the statistics may have been authenticated (in UK look for 'National Statistics')
- More likely to give you population figures
- Methods of collection may be obscure or varied
- Lack of flexibility

Microdata

	casenew	weighta	P550tpr	P344pr	P425r	A172	A093r
1	3383.00	3.29	382.81	3			
2	13732.00	4.14	337.32				
3	182.00	4.85	198.72	201.10	Other income	No i...	Economically .
4	9860.00	4.42	135.58	113.57	Earned income	No i...	Part-time wor.
5	14633.00	6.74	456.37	852.69	Other income	Inter...	Economically .
6	1010.00	6.27	798.10	1184.99	Earned income	Inter...	Economically .
7	9182.00	7.39	134.37	329.46	Other income	No i...	Economically .
8	7891.00	5.98	567.22	251.75	Earned income	No i...	Full-time work.
9	9173.00	6.29	550.60	1184.99	Earned income	Inter...	Full-time work.
10	1623.00	4.95	1077.23	1040.86	Earned income	No i...	Full-time work.
11	11930.00	7.00	1104.13	1020.85	Other income	Inter...	Economically .
12	13109.00	4.99	254.33	560.00	Earned income	No i...	Full-time work.
13	12497.00	5.44	153.23	132.21	Other income	Inter...	Economically .
14	8292.00	4.11	399.63	840.46	Earned income	Inter...	Full-time work.
15	13438.00	5.00	540.02	1184.99	Earned income	Inter...	Full-time work.
16	9517.00	8.76	166.07	125.32	Other income	No i...	Economically .
17	58.00	3.40	357.83	558.95	Other income	Inter...	Economically .
18	7395.00	3.88	773.82	1184.99	Earned income	Inter...	Full-time work.

Gross normal weekly household income - top-co

- Like the raw data you would have if you collected the survey yourself, except anonymised
- Produce your own tables and other analyses (including complex models)
  - Use the data to define new characteristics
  - Work with subpopulations of your choice

Microdata –common types of questions

- What are the characteristics of a social group?
  - What are the characteristics of housing benefit recipients?
- Do different social groups have different characteristics?
  - Are people living urban areas more likely to receive housing benefit?
- Using different definitions and methods
  - e.g. if you were to use different benefit cut-offs how would it affect different groups?
- What factors explain outcomes/ characteristics?
  - E.g. using a statistical model to compare the effect of a range of characteristics on whether or not a person lives in private renting (e.g. urban/rural, working/not working, household type etc.)

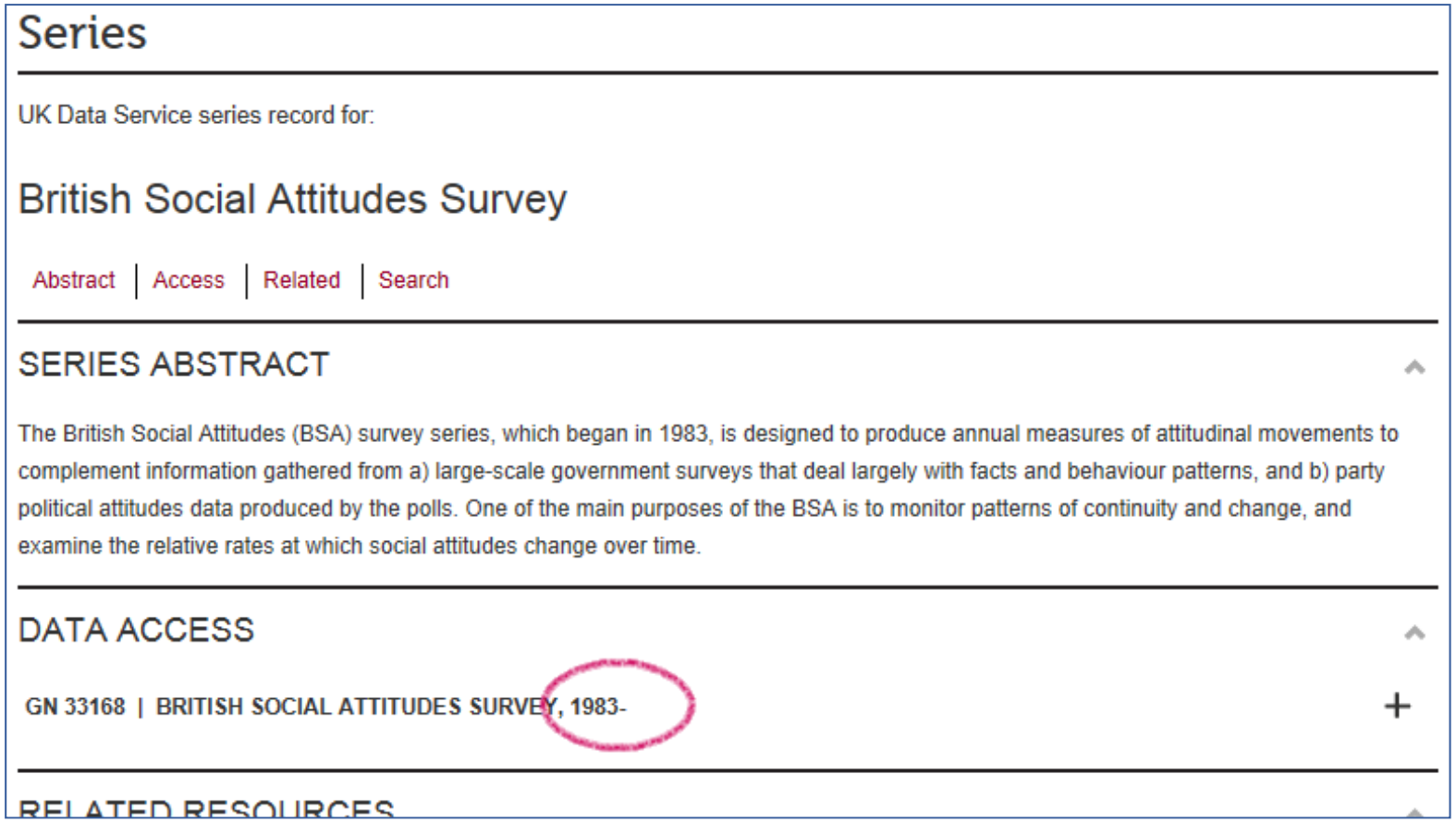
What is the benefit of a cross-sectional series?

- Typically large datasets
- Repeat the same themes
- Usually use the same or comparable methodology

Typical questions:

- Have the characteristics of a group changed over time?
  - Are housing benefit recipients now different from ten years ago?
- Before and after comparsions:
  - Did the number of single people getting £250 benefits plus decrease between 2012 and 2014?

Example series:



Series

UK Data Service series record for:

British Social Attitudes Survey

Abstract | Access | Related | Search

SERIES ABSTRACT

The British Social Attitudes (BSA) survey series, which began in 1983, is designed to produce annual measures of attitudinal movements to complement information gathered from a) large-scale government surveys that deal largely with facts and behaviour patterns, and b) party political attitudes data produced by the polls. One of the main purposes of the BSA is to monitor patterns of continuity and change, and examine the relative rates at which social attitudes change over time.

DATA ACCESS

GN 33168 | BRITISH SOCIAL ATTITUDES SURVEY, 1983-

RELATED RESOURCES

- British Social Attitudes Survey has run annually since 1983
- Core topics run annually, others recur occasionally

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British Social Attitudes

First priority for more gov spending

	1991	2011
Education	28.5	29.7
Defence	1.5	4.6
Health	47.8	40.6
Housing	7.5	5.5
Public transport	1.3	2
Roads	1.4	2.2
Police & prisons	2	6.1
Soc sec benefits	4.5	1.5
Help for industry	3.9	6.2
Overseas aid	0.6	0.5
None of these	0.3	0.7
Don't know	0.5	0.5
Not Answered	0.2	0
Total	100	100
n	2,836	3,311

Could normally look further
e.g. who are these people?

However small numbers
e.g.

1991: 31/127 of soc/sec were unemp/sick
2011: 12/49 of soc/sec were unemp/ sick

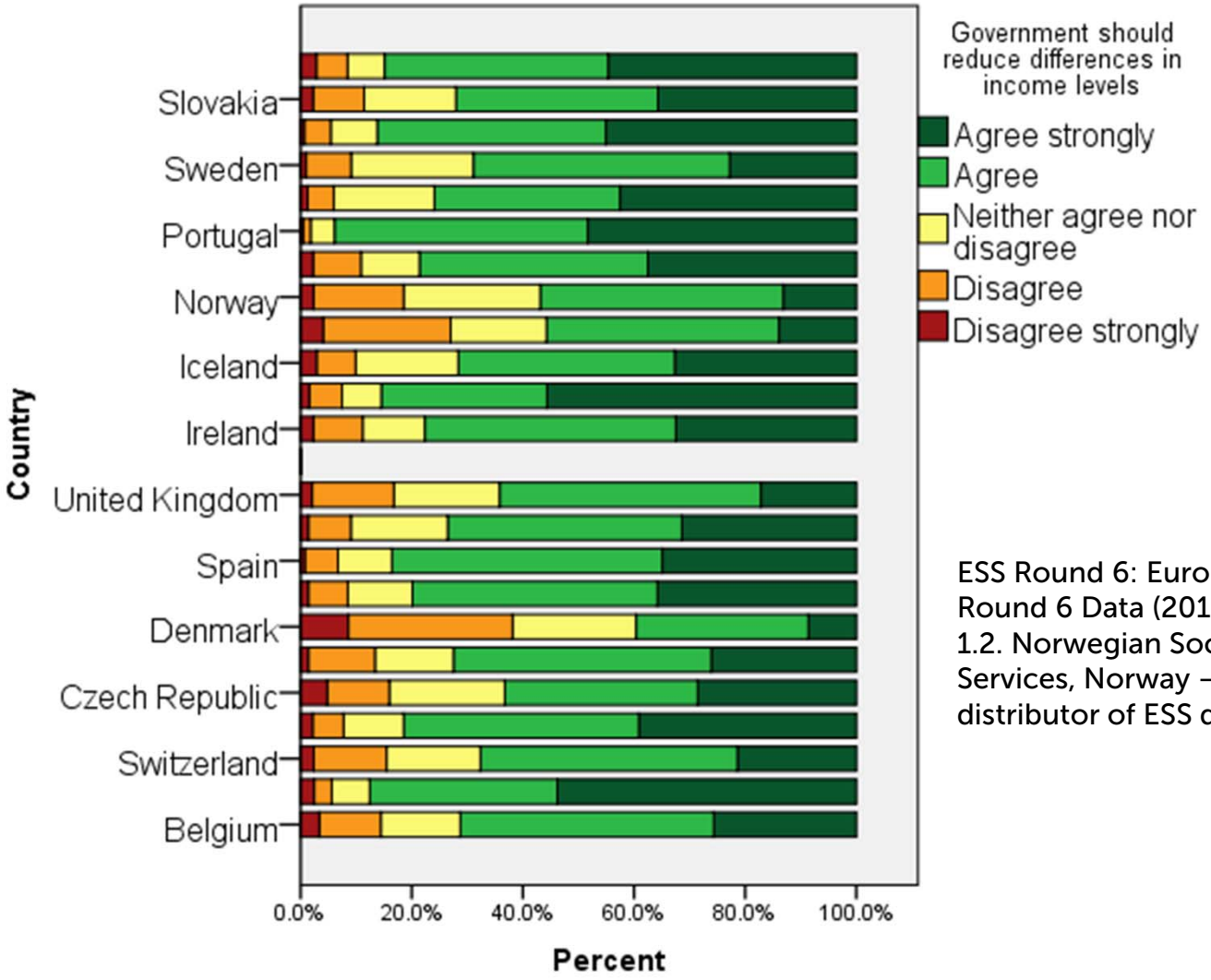
Comparability:
The spend1 question stayed much the same

Economic activity now treating students differently

NatCen Social Research, British Social Attitudes Survey, 2011 [computer file]. 2nd Edition. Colchester, Essex: UK Data Archive [distributor], January 2014. SN: 7237 , http://dx.doi.org/10.5255/UKDA-SN-7237-2

Social and Community Planning Research, *British Social Attitudes Survey, 1991* [computer file]. *2nd Edition.* Colchester, Essex: UK Data Archive [distributor], October 1999. SN: 2952 , http://dx.doi.org/10.5255/UKDA-SN-2952-1

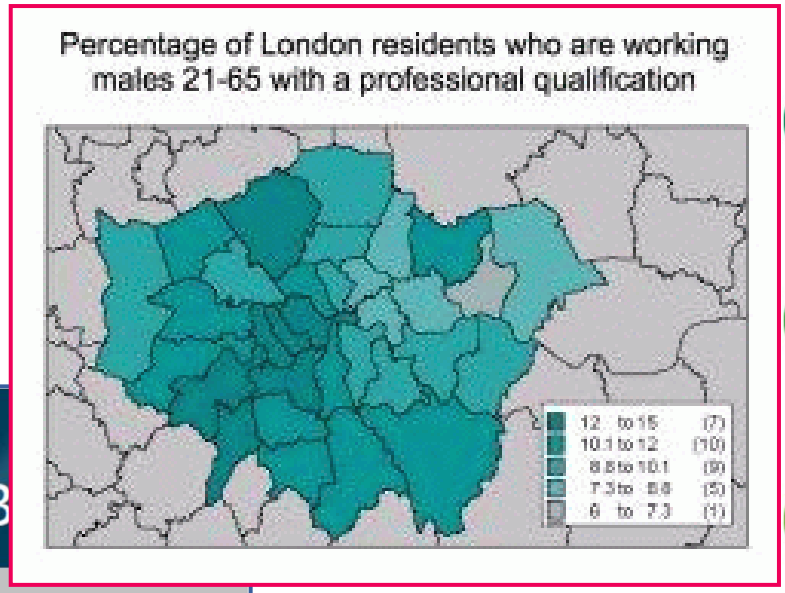
Can also get comparative studies



ESS Round 6: European Social Survey Round 6 Data (2012). Data file edition 1.2. Norwegian Social Science Data Services, Norway – Data Archive and distributor of ESS data.

Microdata can come from other sources

- Business data
  - Secure lab only
- Census microdata
  - Samples of data from census



Office for National Statistics

Statistical B

2011 Annual Survey of Hours and Earnings (SOC 2000)

Coverage: **UK**
Date: **23 November 2011**
Geographical Areas: **Country, European (NUTS), GB, Local Authority and County, Parliamentary Constituency, Region, UK and GB**
Theme: **Labour Market**

Key findings

- In April 2011 median gross weekly earnings for full-time employees were £501, up 0.4 per cent from £499 in 2010

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Discovering Data with the UK Data Service

Presentation for Research Question to Exploratory Data Analysis

University of Manchester, 21st Nov

Rosalynd Southern

UK Data Service

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What is Discover

- Discover is a tool on the UK Data Service website which allows users to search and browse our data collection, support guides, case studies and related publications

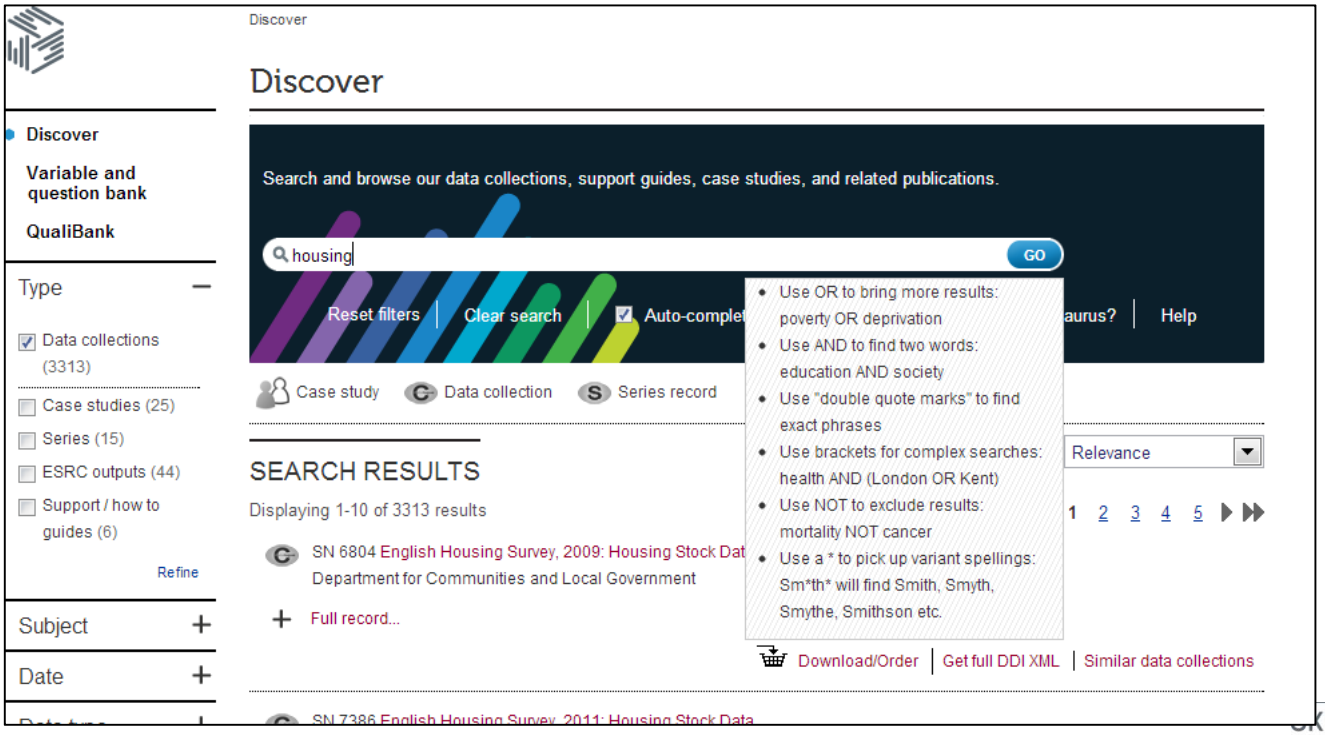
- It allows users to search key terms and then narrow down results to find the exact data or other resource you are looking for

Getting Started

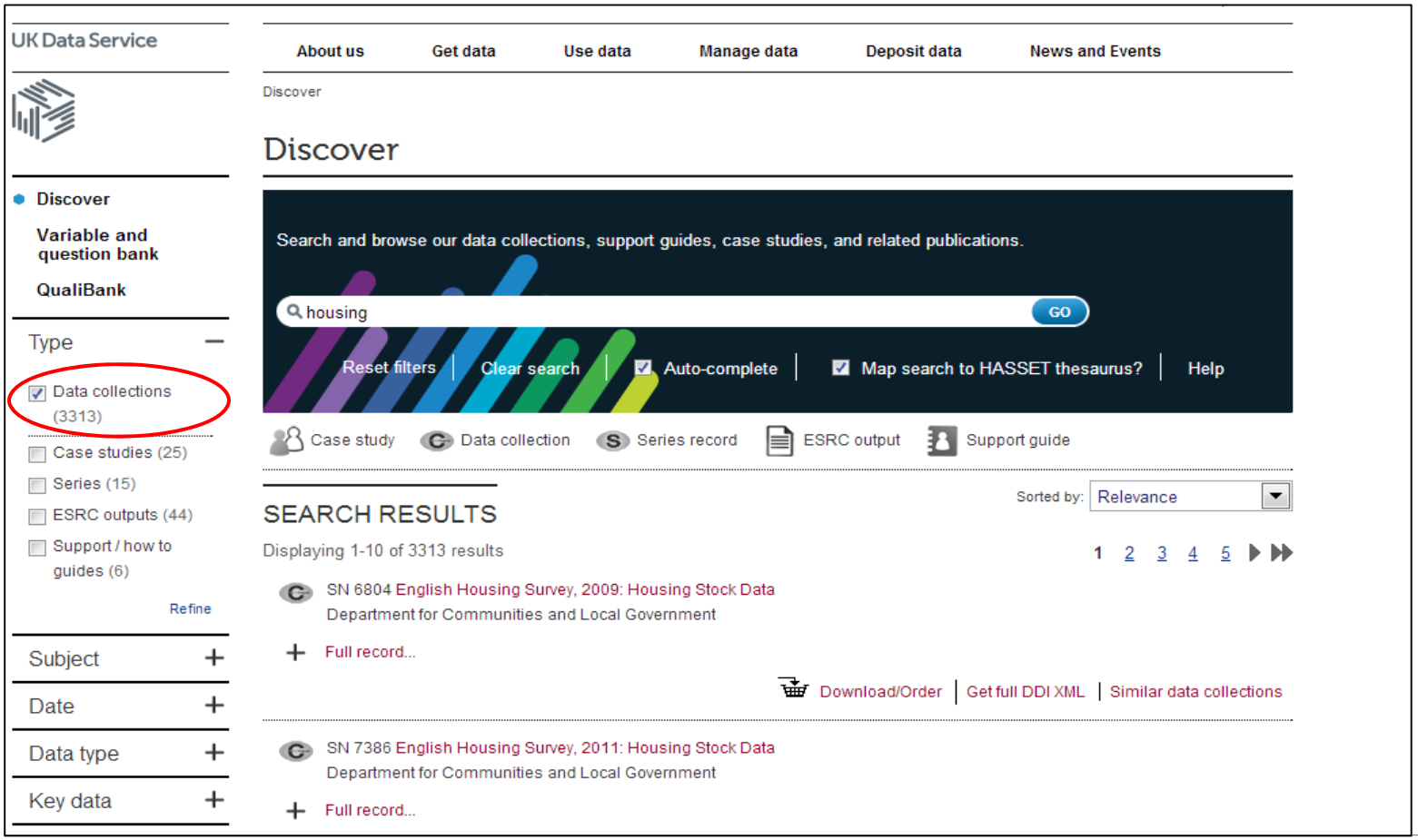
Type in the desired search term and hit the ‘Go’ button

Search Tips

Clicking on the search term field provides a list of tips on how to formulate your search terms. For instance, operators such as AND and OR allow you to search with greater precision.

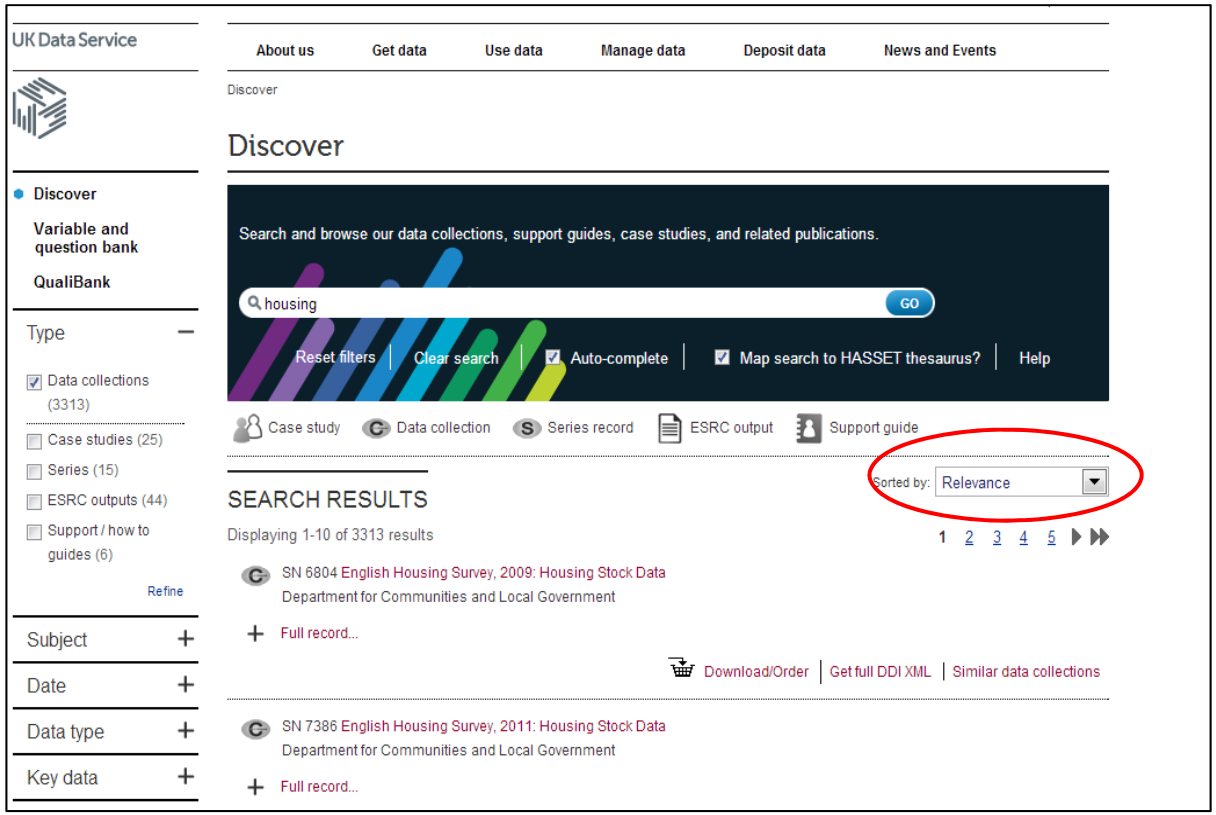


Search Results



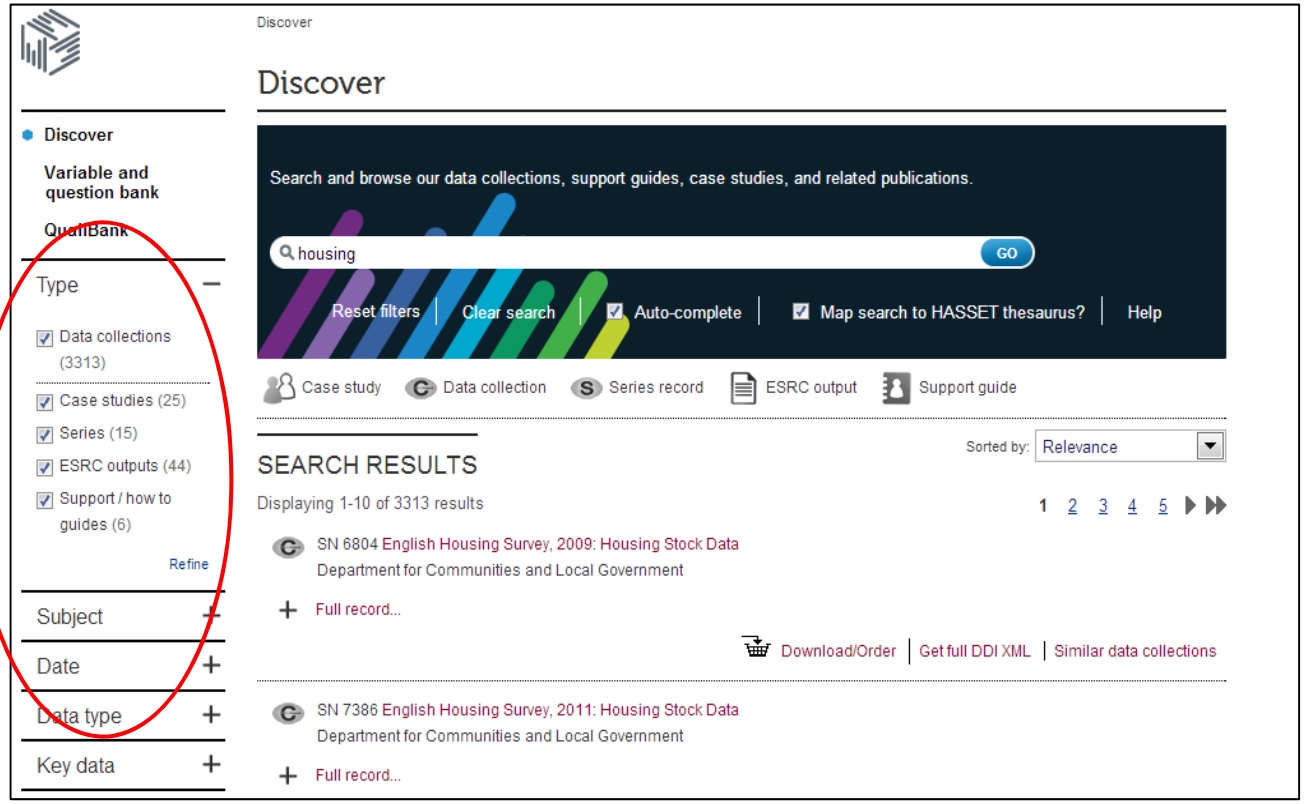
Search Results

The results will by default be sorted by relevance, but can also be sorted by title, data or popularity by clicking the drop-down and choosing accordingly.



Search Results

By default, data collections are returned by discover. Using the tick boxes on the left this can be amended to case studies etc. When searching for data, the ‘series’ box is very useful as it allows you to see datasets that are regularly repeated.



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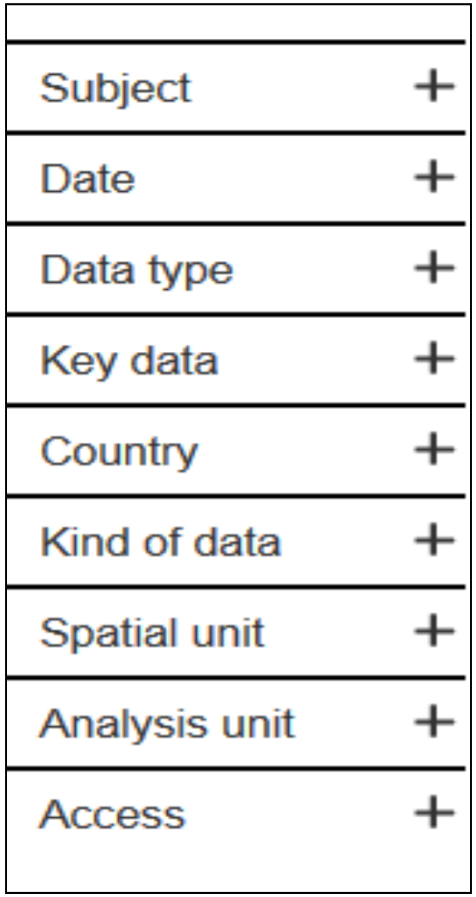
Narrowing the Results

- You will notice that by and large, Discover returns an unhelpfully large amount of search results
- In order to find data that is relevant to what you actually want, it is necessary to narrow the results down

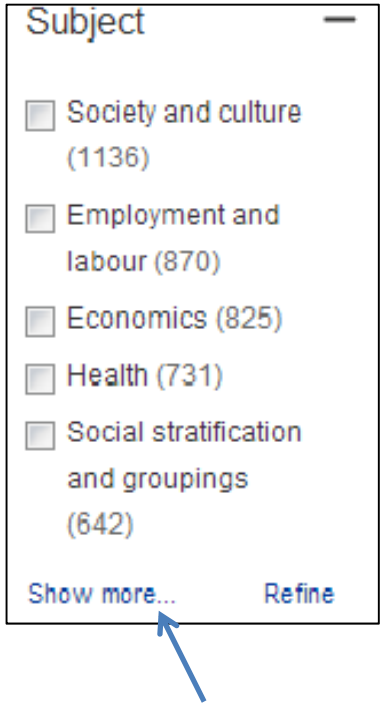
Narrowing the Results



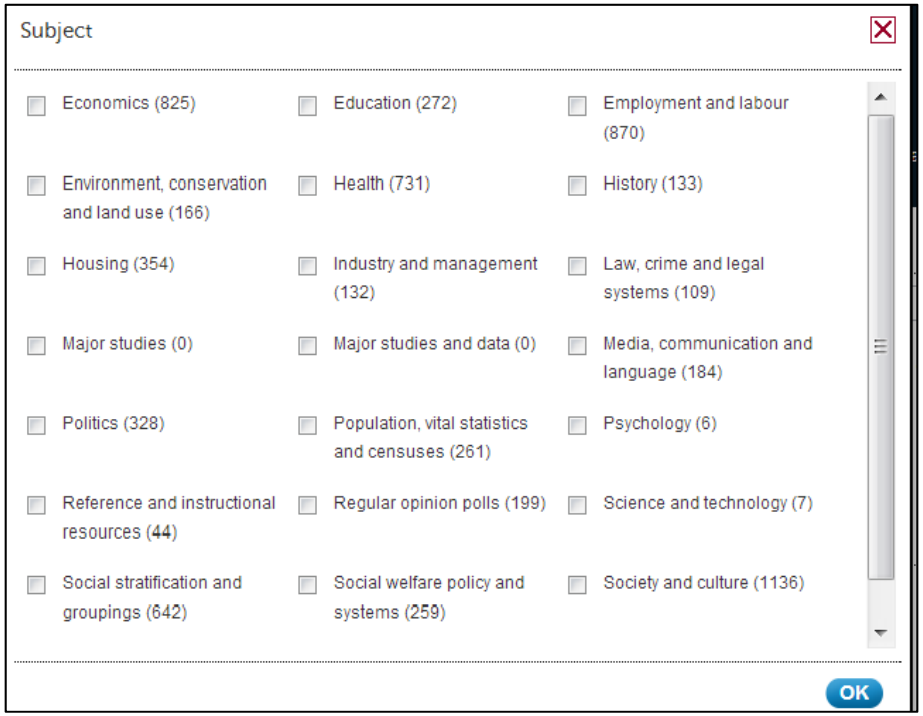
- **Subject** allows you to narrow your search to one of a predefined list of topics.
- **Date** allows you to limit your search to data relevant to a particular period.
- **Data type** allows you to choose between cross-sectional surveys, longitudinal data, qualitative data and more.
- Use **Key data** to limit your search to one or more of the major studies.
- **Country** allows you to pick the geographical location to which the data relate.
- Most of our data is numeric, however if you are looking for video audio or suchlike Kind of data will allow you to specify this.
- If you need a particular level of geographical detail in your data, you can specify this in **Spatial unit**.
- Your unit of analysis can be specified (e.g. individual, geographical unit) in **Analysis unit.**

Narrowing the Results-an example

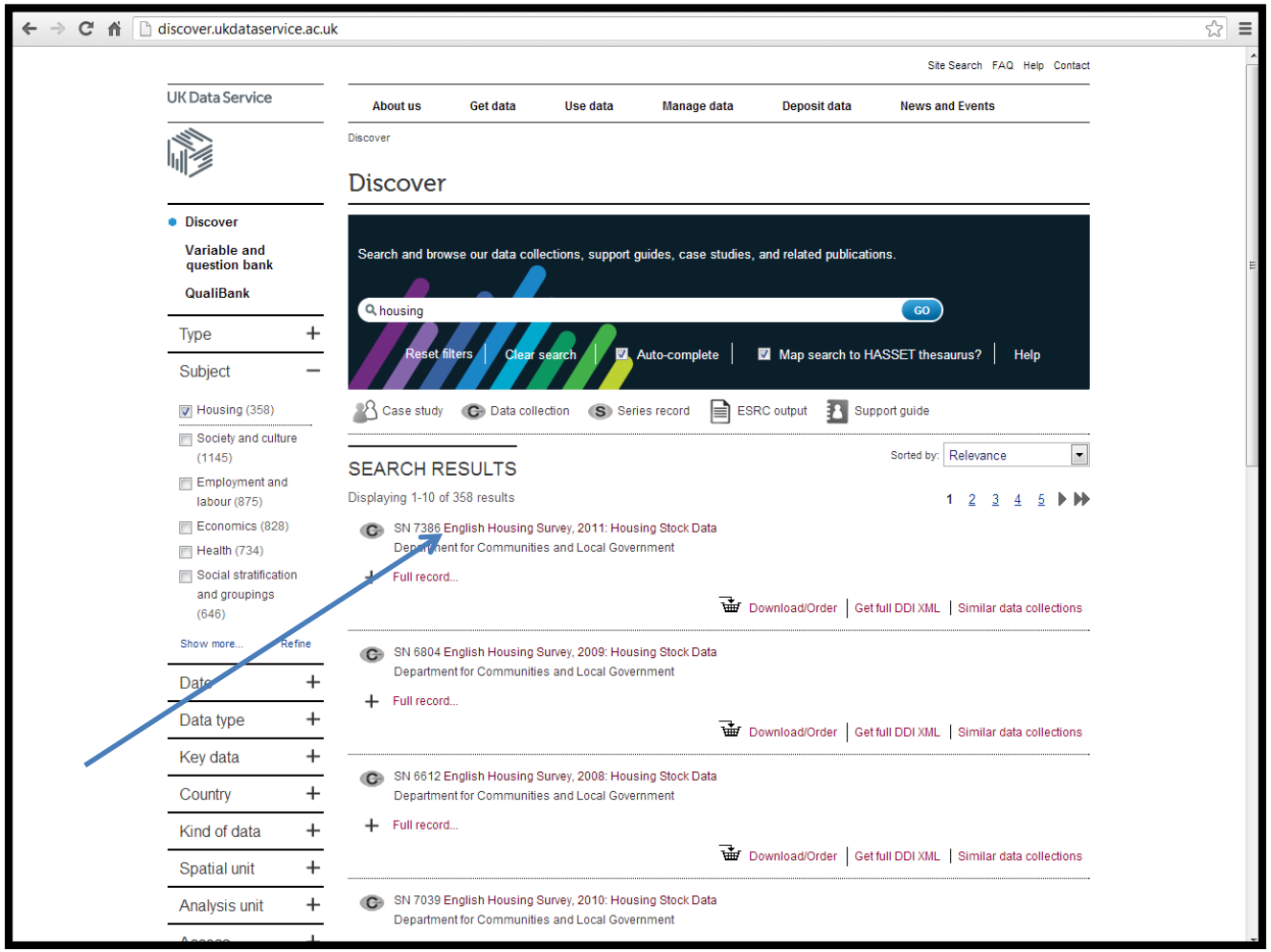
Click on subject, then show more



Then choose your subject



Results one refined for subject



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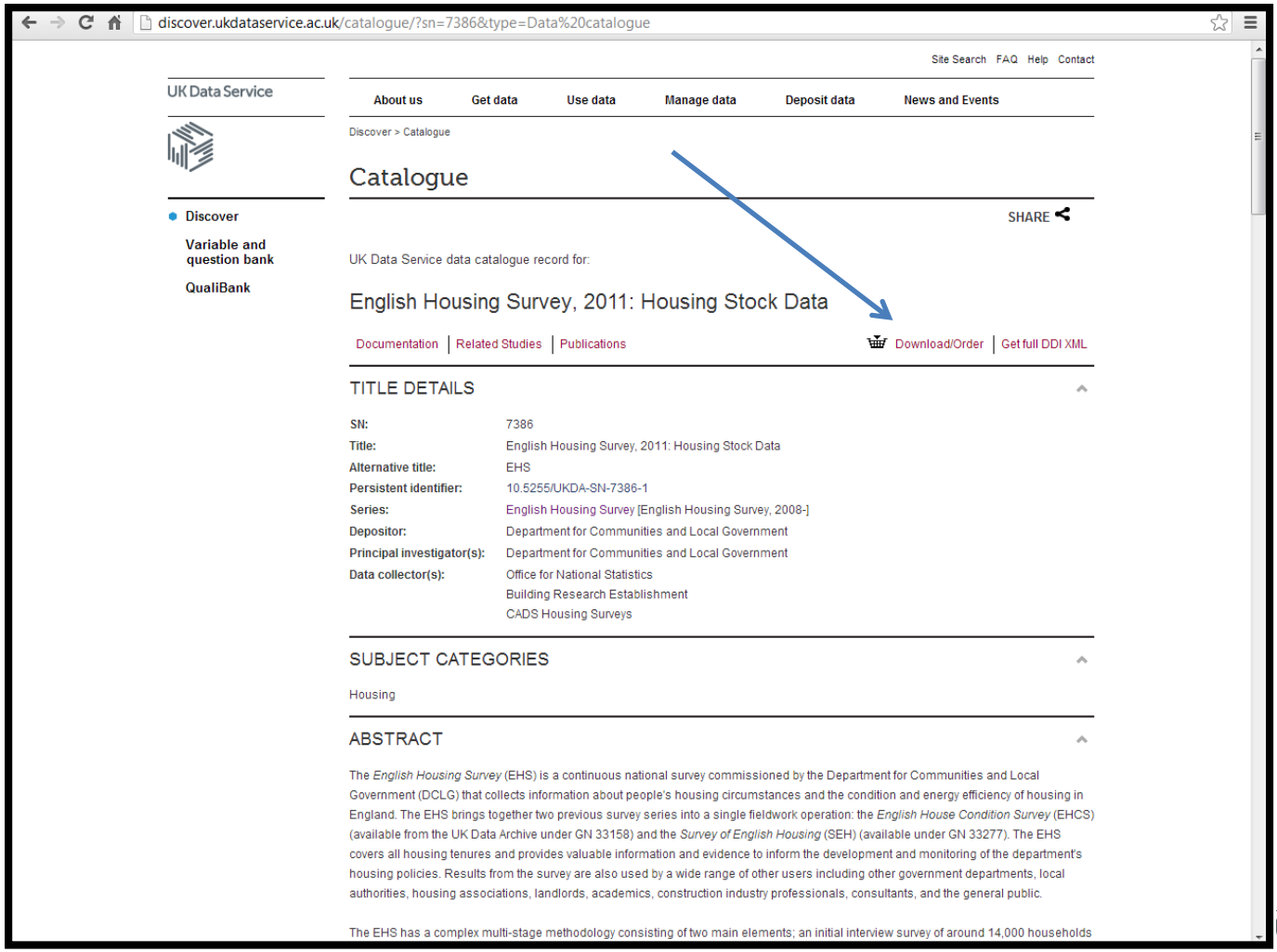
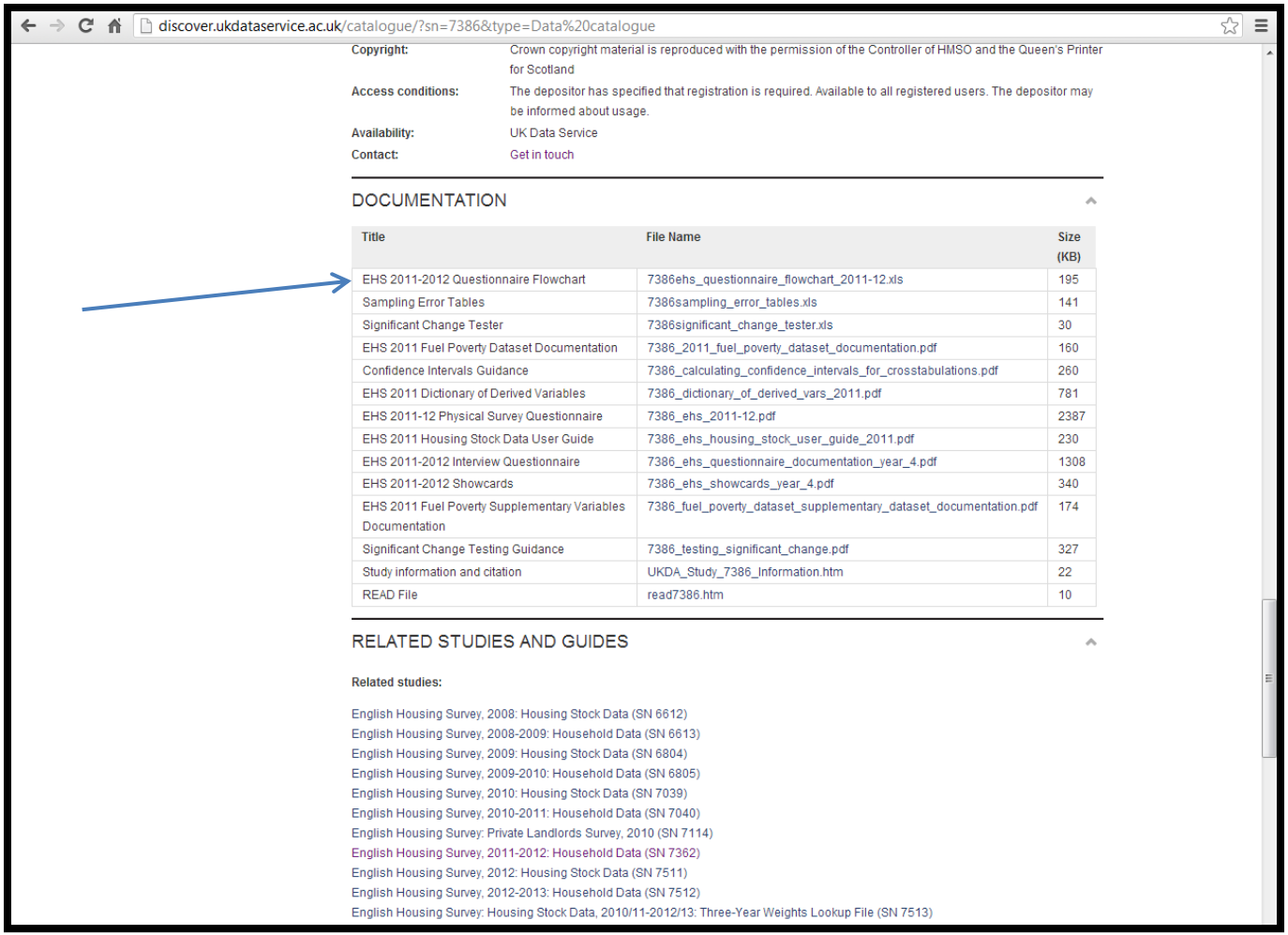
Click to see Catalogue Page



Scroll Down to see Documentation



Now try yourselves!

- Search for a suitable term
- Use the different options to refine and narrow the results
- When you find something you think is suitable-click through to the documentation to check thoroughly

Session 3: Evaluating your dataset

- Assessing a dataset against your needs
- Looking for information about quality
- Is it good enough?

At this stage we have some idea of what we would like

- Units of analysis
- Population
  - Inc. geographical and time frame
- Main characteristic of interest
- Characteristics which might be related to or account for differences in your main topic
- You may well have preferences for how your characteristics are captured

Where to find the information you need

- Documentation and an initial exploration of the data can tell you…
  - Whether a dataset meets the needs you have identified
  - What questions were asked and to whom
  - What ‘derived’ variables are in the data (and what these mean)
  - How the data were collected
  - Instructions on what is required to properly
- Reports on the data may contain additional information
- Large scale surveys may also have their own websites
- If information is missing UK Data Service has a helpdesk

Who was asked what…

Accessibility - The Home

201. GetHome

APPLIES TO ADULTS >15

I would now like to ask you about the rooms within your home.

Are there any rooms in your home which you have difficulty getting into?

[Interviewer instruction] With help or assistive devices if normally used.

(1) Yes
(2) No

202. GetRoom

APPLIES IF: GetHome = 1

SHOWCARD G1
Which rooms do you have difficulty getting into?

Code all that apply
(1) Kitchen
(2) Bedroom
(3) Living area
(4) Toilet/bathroom
(5) Other (specify)

203. GetRmOth

APPLIES IF: GetRoom = Other

Please specify which rooms you have difficulty getting into.

In addition to who was in the sample…

- Computer Aided Interviewing (CAI) makes it easy to send respondents through the questionnaire by different routes
- Many questions may only be applicable to some of the sample

And what was done with data afterwards?

- Derived variables are created from the ‘raw’ data
- Algorithms are usually available

DVAccHome Whether has a restriction to accessibility in the home

0) No
1) Yes

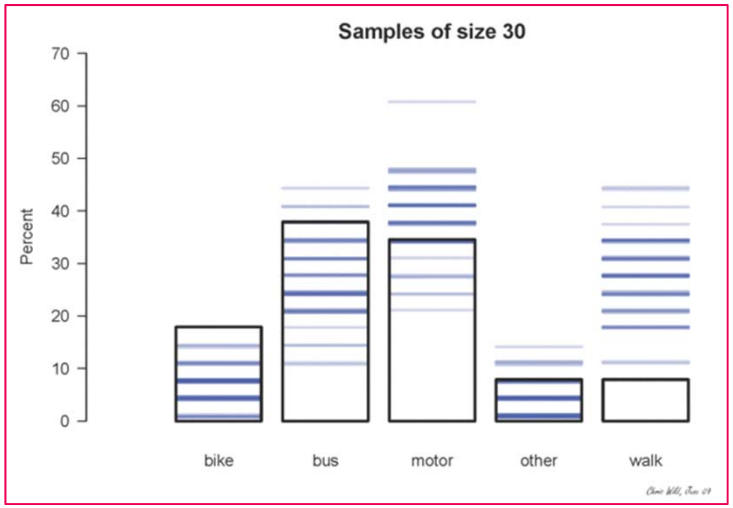
```
DO IF (GetHome=1 or InOut=1).
COMPUTE DVAccHome=1.
ELSE IF (GetHome=2 or inout=2).
COMPUTE DVACCHOME=0.
ELSE IF (GetHome=-8 or GetHome=-7 or Inout=-7 or Inout=-8).
COMPUTE DVAccHome=-8.
ELSE IF (GetHome=-9 or Inout=-9).
COMPUTE DVAccHome=-9.
END IF.
EXE.
```

Consider how sampling was done

- Surveys and similar sources almost always are based on samples
- Is the sample representative?
  - Is everyone included?
  - Does everyone have an equal chance of being selected?
- Is the sample accurate enough?
  - It is the sample size of the group you wish to analyse that matters (not just the size of the dataset)
  - Sample sizes below 30 do not usually meet minimum requirements for key statistical assumptions
  - Sample sizes above 1,000

Sample size

n = 30



n = 1000

For a sample estimate of 50% travel to work by motorised private transport 95% confidence that the true population value will lie between :

32-68% when n=30

47-53% when n=1,000

Graphics by Chris Wild see https://www.stat.auckland.ac.nz/~wild/WPRH/

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How did I work that out?

95% confidence interval for a sample percentage (p) for sample size n

$$'\mathrm{E}' = p \pm 1.96\sqrt{\frac{p(100-p)}{n}}$$

Which can be reorganised to give you the sample size necessary for a desired level of accuracy.

e.g. to get within 1% of the true value

n = p(100-p) * (1.96/E) ^{2}

= 50*50*(1.96/1) ^{2} = 9,604

Other equations exist for other estimated statistics

e.g. the mean

Sampling bias

- Sampling biases may be introduced by the sample design
  - Oversampling
  - Non-response
- Weights might be available for sample non response
- Unit response rate is response rate to a particular question. Could non-response rates to a particular question introduce biases?

Tip: always start with exploratory analysis to assess whether the data are good quality

Complex sampling

- Statistical packages (e.g. SPSS, Stata) typically assume simple random sampling
- Simple random sampling is quite rare
- To keep costs down survey respondents may be selected in ‘clusters’ – this decreases the accuracy of estimates
- To improve the representativeness of the sample, frame might be stratified and each stratum sampled separately – can slightly improve the accuracy of estimates

Practical: For *your* research question, how good is…

- Look at the two surveys to find out whether or not they could be used for the research question we identified earlier.
- The studies are:
  - The Citizenship Survey
  - Understanding Society
- Use the UK Data Service website and documentation

Exploratory Data Analysis using the English Housing Survey

Presentation for Research Question to Exploratory Data Analysis

University of Manchester, 21st Nov

Rosalynd Southern

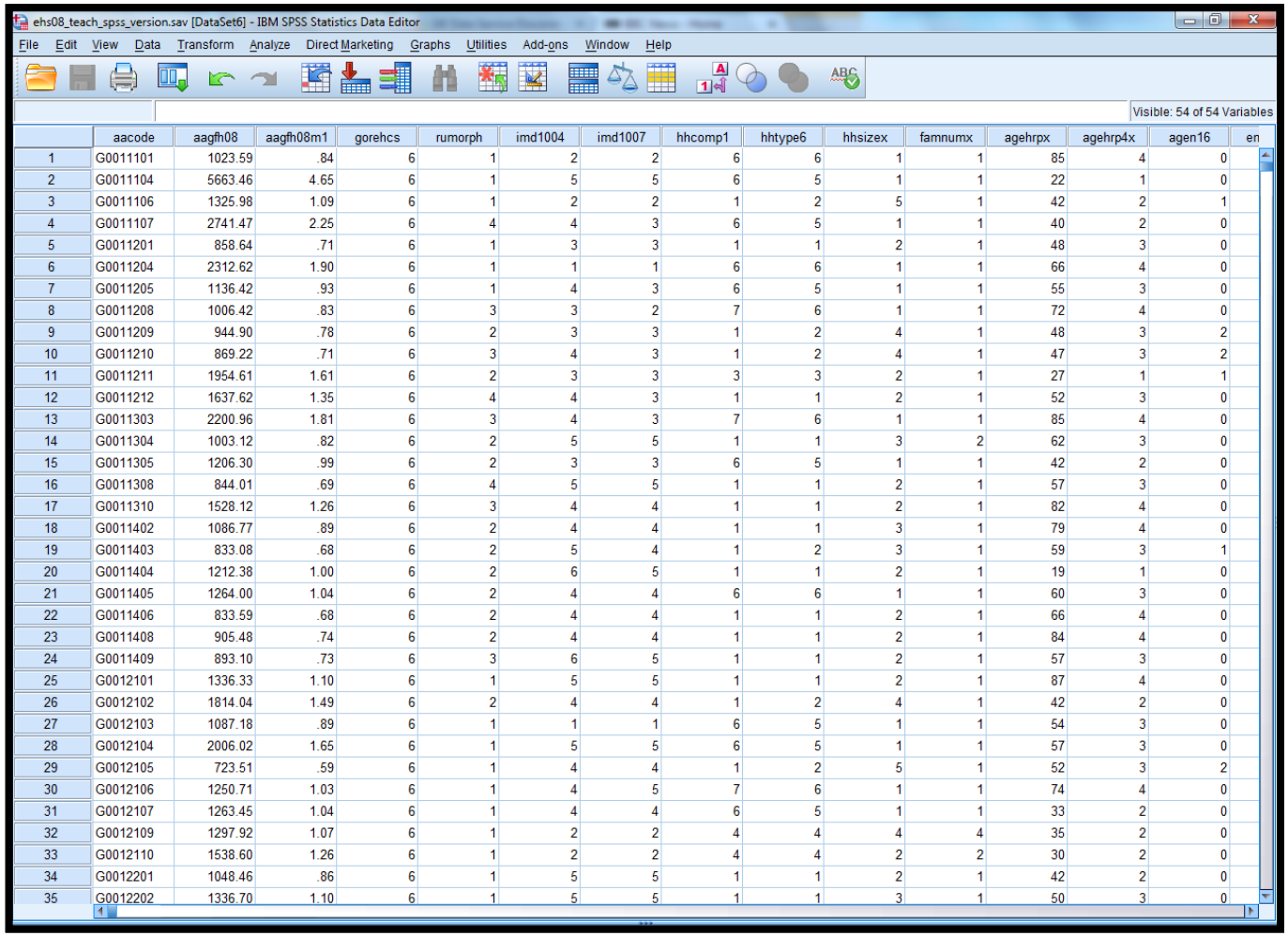
UK Data Service

UK Data Service

Exploratory Analysis

- This section will help you familiarise yourself with the data in terms of the variables and the data (variable view and data view)
- Will be using the English Housing Survey Teaching Dataset 2008
- Will show you how to assess variables in terms of missing data and their measures-ordinal, nominal, scale etc.
- Will show you the different approaches to different measures-histogram versus bar chart for example
- Will take you through summary statistics, frequency tables and cross tabulations
- Weights

Data View


ehs08_teach_spss_version.sav [DataSet6] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

Visible: 54 of 54 Variables

	aacode	aagfh08	aagfh08m1	gorehcs	rumorph	imd1004	imd1007	hhcomp1	hhtype6	hhsizex	famnumx	agehrpx	agehrp4x	agen16	en
1	G0011101	1023.59	.84	6	1	2	2	6	6	1	1	85	4	0	
2	G0011104	5663.46	4.65	6	1	5	5	6	5	1	1	22	1	0	
3	G0011106	1325.98	1.09	6	1	2	2	1	2	5	1	42	2	1	
4	G0011107	2741.47	2.25	6	4	4	3	6	5	1	1	40	2	0	
5	G0011201	858.64	.71	6	1	3	3	1	1	2	1	48	3	0	
6	G0011204	2312.62	1.90	6	1	1	1	6	6	1	1	66	4	0	
7	G0011205	1136.42	.93	6	1	4	3	6	5	1	1	55	3	0	
8	G0011208	1006.42	.83	6	3	3	2	7	6	1	1	72	4	0	
9	G0011209	944.90	.78	6	2	3	3	1	2	4	1	48	3	2	
10	G0011210	869.22	.71	6	3	4	3	1	2	4	1	47	3	2	
11	G0011211	1954.61	1.61	6	2	3	3	3	3	2	1	27	1	1	
12	G0011212	1637.62	1.35	6	4	4	3	1	1	2	1	52	3	0	
13	G0011303	2200.96	1.81	6	3	4	3	7	6	1	1	85	4	0	
14	G0011304	1003.12	.82	6	2	5	5	1	1	3	2	62	3	0	
15	G0011305	1206.30	.99	6	2	3	3	6	5	1	1	42	2	0	
16	G0011308	844.01	.69	6	4	5	5	1	1	2	1	57	3	0	
17	G0011310	1528.12	1.26	6	3	4	4	1	1	2	1	82	4	0	
18	G0011402	1086.77	.89	6	2	4	4	1	1	3	1	79	4	0	
19	G0011403	833.08	.68	6	2	5	4	1	2	3	1	59	3	1	
20	G0011404	1212.38	1.00	6	2	6	5	1	1	2	1	19	1	0	
21	G0011405	1264.00	1.04	6	2	4	4	6	6	1	1	60	3	0	
22	G0011406	833.59	.68	6	2	4	4	1	1	2	1	66	4	0	
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24	G0011409	893.10	.73	6	3	6	5	1	1	2	1	57	3	0	
25	G0012101	1336.33	1.10	6	1	5	5	1	1	2	1	87	4	0	
26	G0012102	1814.04	1.49	6	2	4	4	1	2	4	1	42	2	0	
27	G0012103	1087.18	.89	6	1	1	1	6	5	1	1	54	3	0	
28	G0012104	2006.02	1.65	6	1	5	5	6	5	1	1	57	3	0	
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31	G0012107	1263.45	1.04	6	1	4	4	6	5	1	1	33	2	0	
32	G0012109	1297.92	1.07	6	1	2	2	4	4	4	4	35	2	0	
33	G0012110	1538.60	1.26	6	1	2	2	4	4	2	2	30	2	0	
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35	G0012202	1336.70	1.10	6	1	5	5	1	1	3	1	50	3	0	

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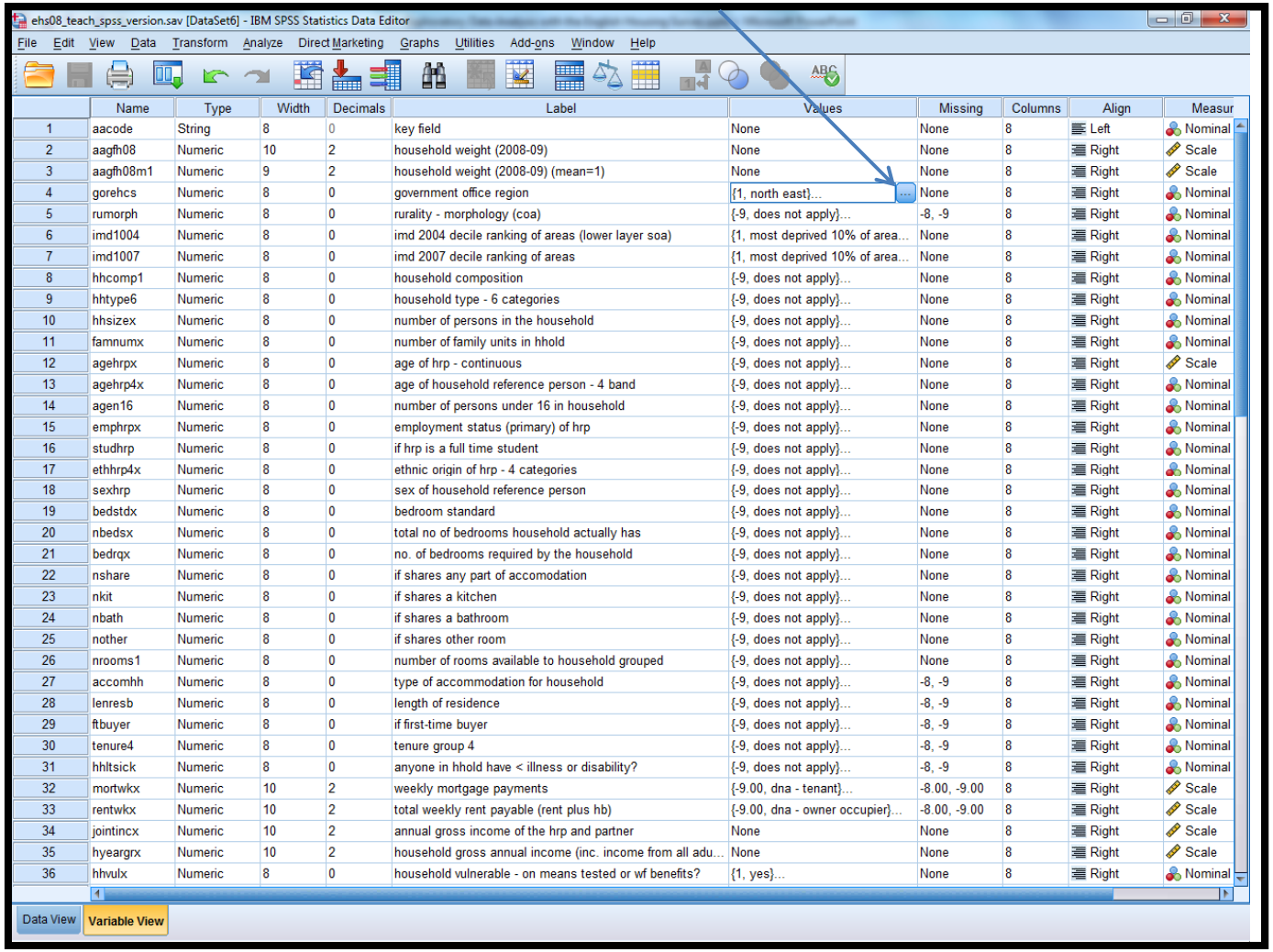
Variable View



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1	aacode	String	8	0	key field	None	None	8	Left	Nominal
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3	aagfh08m1	Numeric	9	2	household weight (2008-09) (mean=1)	None	None	8	Right	Scale
4	gorehcs	Numeric	8	0	government office region	{1, north east}...	None	8	Right	Nominal
5	rumorph	Numeric	8	0	rurality - morphology (coa)	{-9, does not apply}...	-8, -9	8	Right	Nominal
6	imd1004	Numeric	8	0	imd 2004 decile ranking of areas (lower layer soa)	{1, most deprived 10% of area...	None	8	Right	Nominal
7	imd1007	Numeric	8	0	imd 2007 decile ranking of areas	{1, most deprived 10% of area...	None	8	Right	Nominal
8	hhcomp1	Numeric	8	0	household composition	{-9, does not apply}...	None	8	Right	Nominal
9	hhtype6	Numeric	8	0	household type - 6 categories	{-9, does not apply}...	None	8	Right	Nominal
10	hhsizex	Numeric	8	0	number of persons in the household	{-9, does not apply}...	None	8	Right	Nominal
11	famnumx	Numeric	8	0	number of family units in hhold	{-9, does not apply}...	None	8	Right	Nominal
12	agehrpx	Numeric	8	0	age of hrp - continuous	{-9, does not apply}...	None	8	Right	Scale
13	agehrp4x	Numeric	8	0	age of household reference person - 4 band	{-9, does not apply}...	None	8	Right	Nominal
14	agen16	Numeric	8	0	number of persons under 16 in household	{-9, does not apply}...	None	8	Right	Nominal
15	emphrpx	Numeric	8	0	employment status (primary) of hrp	{-9, does not apply}...	None	8	Right	Nominal
16	studhrp	Numeric	8	0	if hrp is a full time student	{-9, does not apply}...	None	8	Right	Nominal
17	ethhrp4x	Numeric	8	0	ethnic origin of hrp - 4 categories	{-9, does not apply}...	None	8	Right	Nominal
18	sexhrp	Numeric	8	0	sex of household reference person	{-9, does not apply}...	None	8	Right	Nominal
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20	nbedsx	Numeric	8	0	total no of bedrooms household actually has	{-9, does not apply}...	None	8	Right	Nominal
21	bedrqx	Numeric	8	0	no. of bedrooms required by the household	{-9, does not apply}...	None	8	Right	Nominal
22	nshare	Numeric	8	0	if shares any part of accomodation	{-9, does not apply}...	None	8	Right	Nominal
23	nkit	Numeric	8	0	if shares a kitchen	{-9, does not apply}...	None	8	Right	Nominal
24	nbath	Numeric	8	0	if shares a bathroom	{-9, does not apply}...	None	8	Right	Nominal
25	nother	Numeric	8	0	if shares other room	{-9, does not apply}...	None	8	Right	Nominal
26	nrooms1	Numeric	8	0	number of rooms available to household grouped	{-9, does not apply}...	None	8	Right	Nominal
27	accomhh	Numeric	8	0	type of accommodation for household	{-9, does not apply}...	-8, -9	8	Right	Nominal
28	lenresb	Numeric	8	0	length of residence	{-9, does not apply}...	-8, -9	8	Right	Nominal
29	ftbuyer	Numeric	8	0	if first-time buyer	{-9, does not apply}...	-8, -9	8	Right	Nominal
30	tenure4	Numeric	8	0	tenure group 4	{-9, does not apply}...	-8, -9	8	Right	Nominal
31	hhltsick	Numeric	8	0	anyone in hhold have < illness or disability?	{-9, does not apply}...	-8, -9	8	Right	Nominal
32	mortwkx	Numeric	10	2	weekly mortgage payments	{-9.00, dna - tenant}...	-8.00, -9.00	8	Right	Scale
33	rentwkx	Numeric	10	2	total weekly rent payable (rent plus hb)	{-9.00, dna - owner occupier}...	-8.00, -9.00	8	Right	Scale
34	jointincx	Numeric	10	2	annual gross income of the hrp and partner	None	None	8	Right	Scale
35	hyeargrx	Numeric	10	2	household gross annual income (inc. income from all adu...	None	None	8	Right	Scale
36	hhvulx	Numeric	8	0	household vulnerable - on means tested or wf benefits?	{1, yes}...	None	8	Right	Nominal

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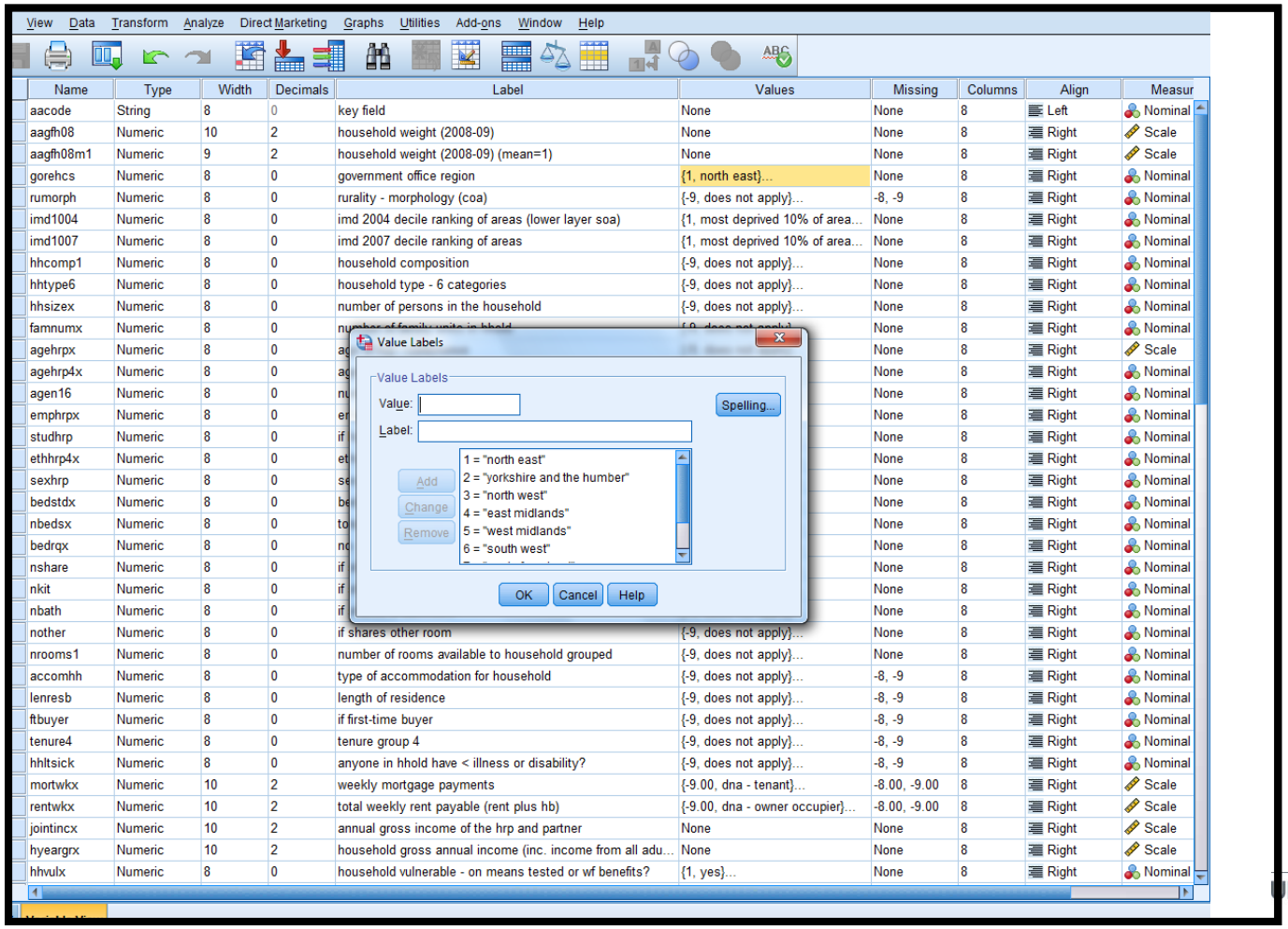
Values and Value Labels



Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measur
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aagfh08	Numeric	10	2	household weight (2008-09)	None	None	8	Right	Scale
aagfh08m1	Numeric	9	2	household weight (2008-09) (mean=1)	None	None	8	Right	Scale
gorehcs	Numeric	8	0	government office region	{1, north east}...	None	8	Right	Nominal
rumorph	Numeric	8	0	rurality - morphology (coa)	{-9, does not apply}...	-8, -9	8	Right	Nominal
imd1004	Numeric	8	0	imd 2004 decile ranking of areas (lower layer soa)	{1, most deprived 10% of area...	None	8	Right	Nominal
imd1007	Numeric	8	0	imd 2007 decile ranking of areas	{1, most deprived 10% of area...	None	8	Right	Nominal
hhcomp1	Numeric	8	0	household composition	{-9, does not apply}...	None	8	Right	Nominal
hhtype6	Numeric	8	0	household type - 6 categories	{-9, does not apply}...	None	8	Right	Nominal
hhsizex	Numeric	8	0	number of persons in the household	{-9, does not apply}...	None	8	Right	Nominal
famnumx	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
agehrpx	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Scale
agehrp4x	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
agen16	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
emphrpx	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
studhrp	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
ethhrp4x	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
sexhrp	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
bedstdx	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
nbedsx	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
bedrqx	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
nshare	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
nkit	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
nbath	Numeric	8	0	[illegible]	[illegible]	None	8	Right	Nominal
nother	Numeric	8	0	if shares other room	{-9, does not apply}...	None	8	Right	Nominal
nrooms1	Numeric	8	0	number of rooms available to household grouped	{-9, does not apply}...	None	8	Right	Nominal
accomhh	Numeric	8	0	type of accommodation for household	{-9, does not apply}...	-8, -9	8	Right	Nominal
lenresb	Numeric	8	0	length of residence	{-9, does not apply}...	-8, -9	8	Right	Nominal
ftbuyer	Numeric	8	0	if first-time buyer	{-9, does not apply}...	-8, -9	8	Right	Nominal
tenure4	Numeric	8	0	tenure group 4	{-9, does not apply}...	-8, -9	8	Right	Nominal
hhltsick	Numeric	8	0	anyone in hhold have < illness or disability?	{-9, does not apply}...	-8, -9	8	Right	Nominal
mortwkx	Numeric	10	2	weekly mortgage payments	{-9.00, dna - tenant}...	-8.00, -9.00	8	Right	Scale
rentwkx	Numeric	10	2	total weekly rent payable (rent plus hb)	{-9.00, dna - owner occupier}...	-8.00, -9.00	8	Right	Scale
jointincx	Numeric	10	2	annual gross income of the hrp and partner	None	None	8	Right	Scale
hyeargrx	Numeric	10	2	household gross annual income (inc. income from all adu...	None	None	8	Right	Scale
hhvulx	Numeric	8	0	household vulnerable - on means tested or wf benefits?	{1, yes}...	None	8	Right	Nominal

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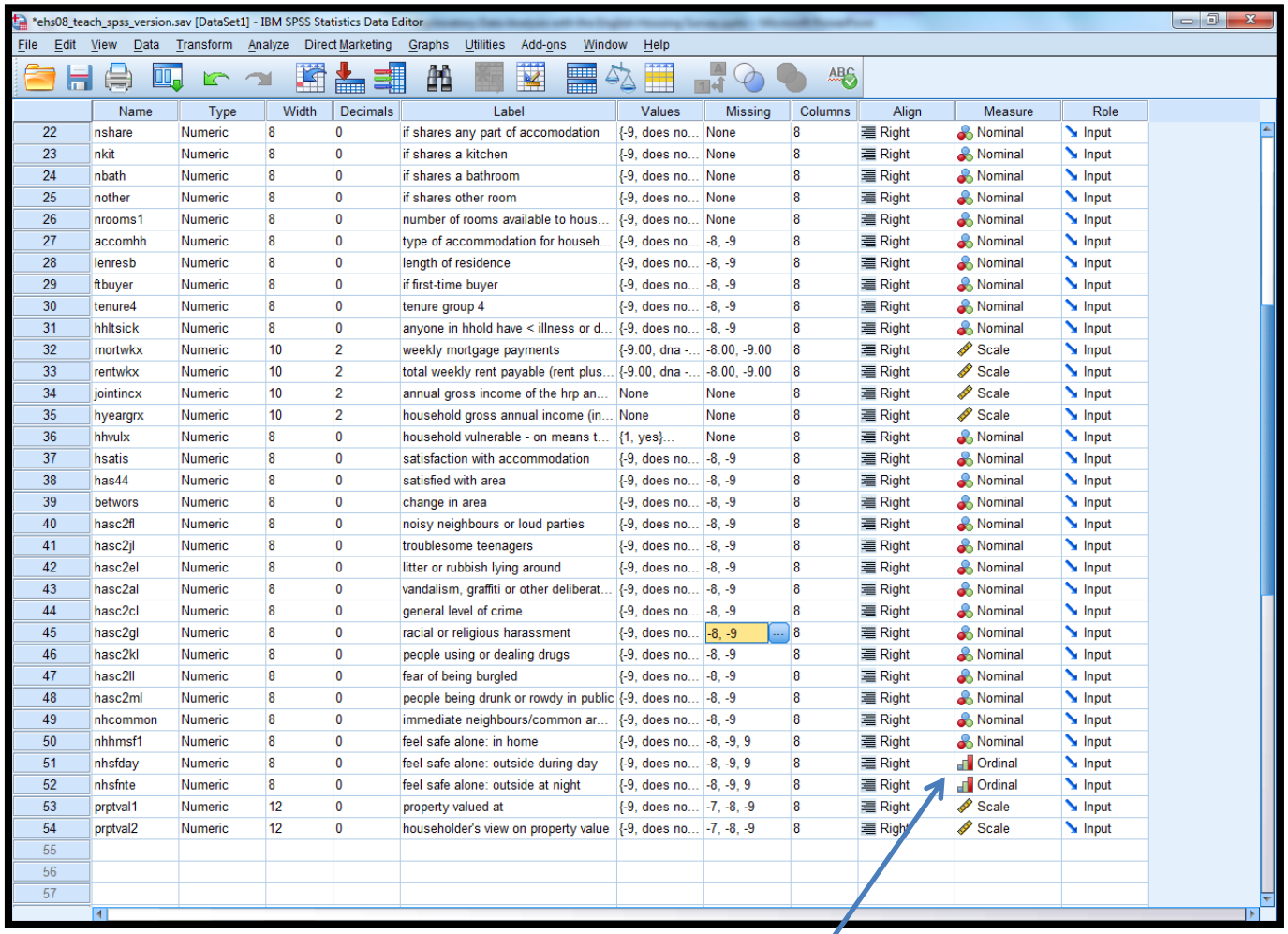
Nominal, Ordinal and Scale



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
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23	nkit	Numeric	8	0	if shares a kitchen	{-9, does no...	None	8	Right	Nominal	Input
24	nbath	Numeric	8	0	if shares a bathroom	{-9, does no...	None	8	Right	Nominal	Input
25	nother	Numeric	8	0	if shares other room	{-9, does no...	None	8	Right	Nominal	Input
26	nrooms1	Numeric	8	0	number of rooms available to hous...	{-9, does no...	None	8	Right	Nominal	Input
27	accomhh	Numeric	8	0	type of accommodation for househ...	{-9, does no...	-8, -9	8	Right	Nominal	Input
28	lenresb	Numeric	8	0	length of residence	{-9, does no...	-8, -9	8	Right	Nominal	Input
29	ftbuyer	Numeric	8	0	if first-time buyer	{-9, does no...	-8, -9	8	Right	Nominal	Input
30	tenure4	Numeric	8	0	tenure group 4	{-9, does no...	-8, -9	8	Right	Nominal	Input
31	hhltsick	Numeric	8	0	anyone in hhold have < illness or d...	{-9, does no...	-8, -9	8	Right	Nominal	Input
32	mortwkx	Numeric	10	2	weekly mortgage payments	{-9.00, dna -...	-8.00, -9.00	8	Right	Scale	Input
33	rentwkx	Numeric	10	2	total weekly rent payable (rent plus...	{-9.00, dna -...	-8.00, -9.00	8	Right	Scale	Input
34	jointincx	Numeric	10	2	annual gross income of the hrp an...	None	None	8	Right	Scale	Input
35	hyeargrx	Numeric	10	2	household gross annual income (in...	None	None	8	Right	Scale	Input
36	hhvulx	Numeric	8	0	household vulnerable - on means t...	{1, yes}...	None	8	Right	Nominal	Input
37	hsatis	Numeric	8	0	satisfaction with accommodation	{-9, does no...	-8, -9	8	Right	Nominal	Input
38	has44	Numeric	8	0	satisfied with area	{-9, does no...	-8, -9	8	Right	Nominal	Input
39	betwors	Numeric	8	0	change in area	{-9, does no...	-8, -9	8	Right	Nominal	Input
40	hasc2fl	Numeric	8	0	noisy neighbours or loud parties	{-9, does no...	-8, -9	8	Right	Nominal	Input
41	hasc2jl	Numeric	8	0	troublesome teenagers	{-9, does no...	-8, -9	8	Right	Nominal	Input
42	hasc2el	Numeric	8	0	litter or rubbish lying around	{-9, does no...	-8, -9	8	Right	Nominal	Input
43	hasc2al	Numeric	8	0	vandalism, graffiti or other deliberat...	{-9, does no...	-8, -9	8	Right	Nominal	Input
44	hasc2cl	Numeric	8	0	general level of crime	{-9, does no...	-8, -9	8	Right	Nominal	Input
45	hasc2gl	Numeric	8	0	racial or religious harassment	{-9, does no...	-8, -9	8	Right	Nominal	Input
46	hasc2kl	Numeric	8	0	people using or dealing drugs	{-9, does no...	-8, -9	8	Right	Nominal	Input
47	hasc2ll	Numeric	8	0	fear of being burgled	{-9, does no...	-8, -9	8	Right	Nominal	Input
48	hasc2ml	Numeric	8	0	people being drunk or rowdy in public	{-9, does no...	-8, -9	8	Right	Nominal	Input
49	nhcommon	Numeric	8	0	immediate neighbours/common ar...	{-9, does no...	-8, -9	8	Right	Nominal	Input
50	nhhmsf1	Numeric	8	0	feel safe alone: in home	{-9, does no...	-8, -9, 9	8	Right	Nominal	Input
51	nhsfday	Numeric	8	0	feel safe alone: outside during day	{-9, does no...	-8, -9, 9	8	Right	Ordinal	Input
52	nhsfnte	Numeric	8	0	feel safe alone: outside at night	{-9, does no...	-8, -9, 9	8	Right	Ordinal	Input
53	prptval1	Numeric	12	0	property valued at	{-9, does no...	-7, -8, -9	8	Right	Scale	Input
54	prptval2	Numeric	12	0	householder's view on property value	{-9, does no...	-7, -8, -9	8	Right	Scale	Input
55											
56											
57											

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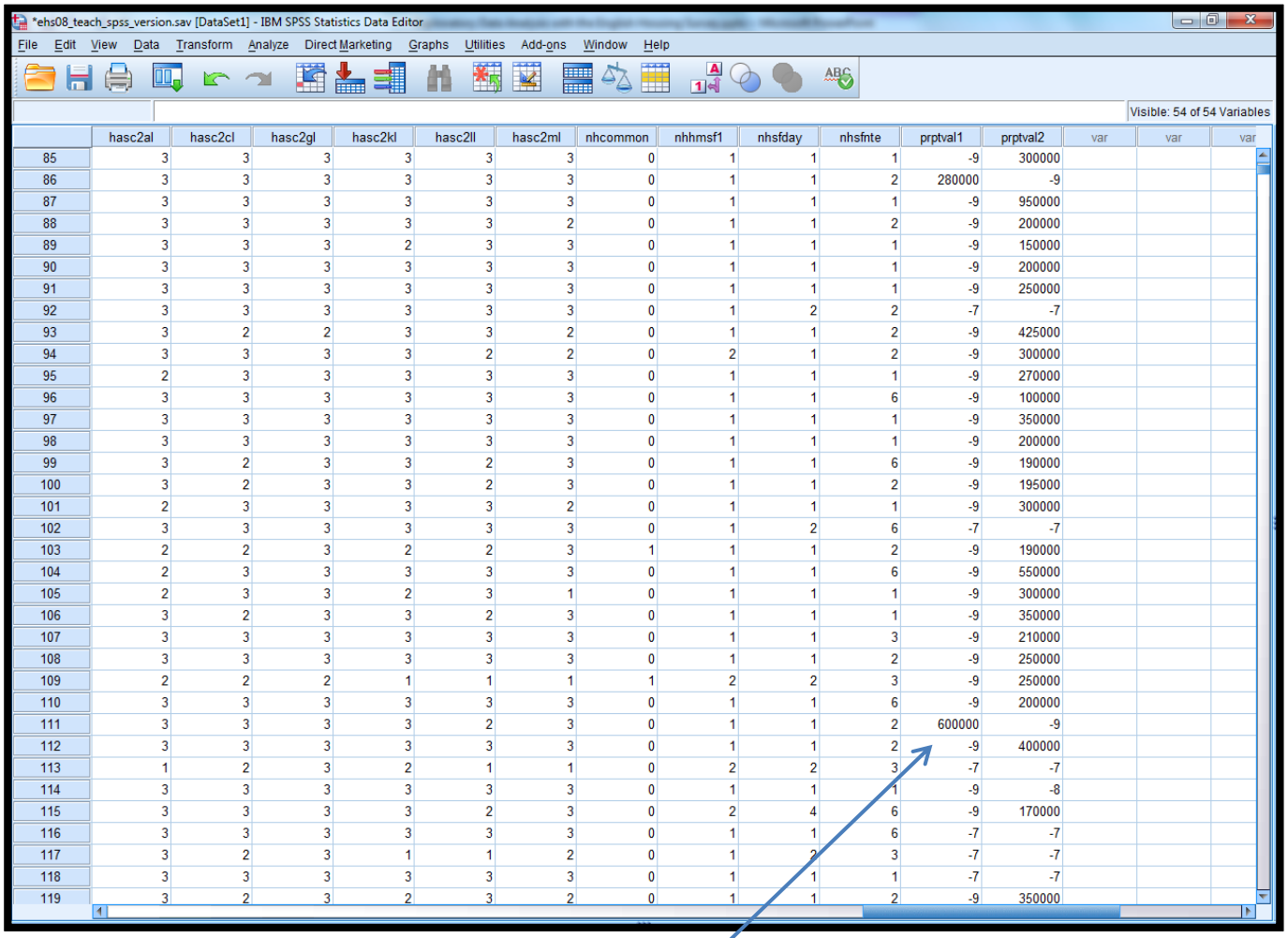
Missing Data



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87	3	3	3	3	3	3	0	1	1	1	-9	950000			
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93	3	2	2	3	3	2	0	1	1	2	-9	425000			
94	3	3	3	3	2	2	0	2	1	2	-9	300000			
95	2	3	3	3	3	3	0	1	1	1	-9	270000			
96	3	3	3	3	3	3	0	1	1	6	-9	100000			
97	3	3	3	3	3	3	0	1	1	1	-9	350000			
98	3	3	3	3	3	3	0	1	1	1	-9	200000			
99	3	2	3	3	2	3	0	1	1	6	-9	190000			
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106	3	2	3	3	2	3	0	1	1	1	-9	350000			
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108	3	3	3	3	3	3	0	1	1	2	-9	250000			
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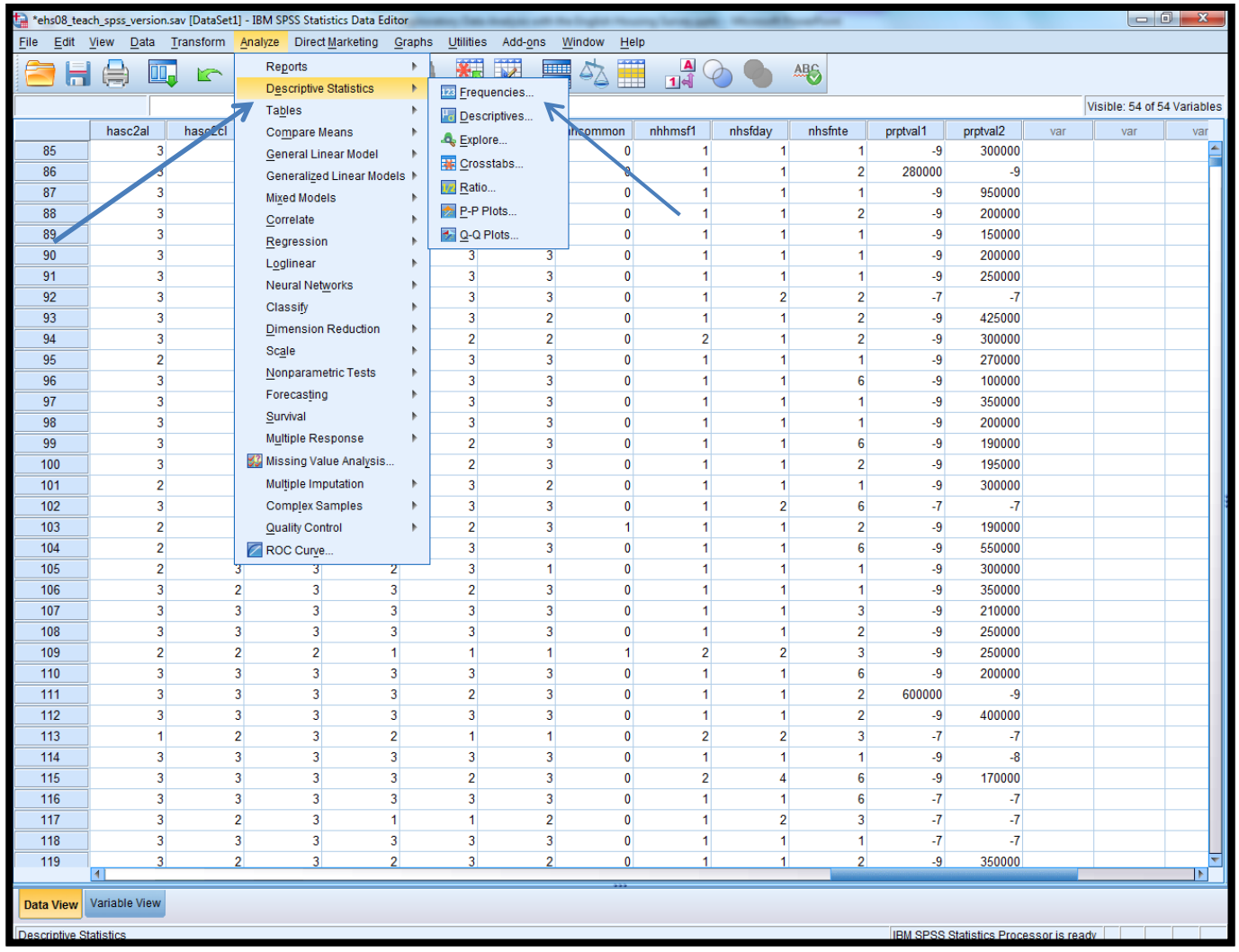
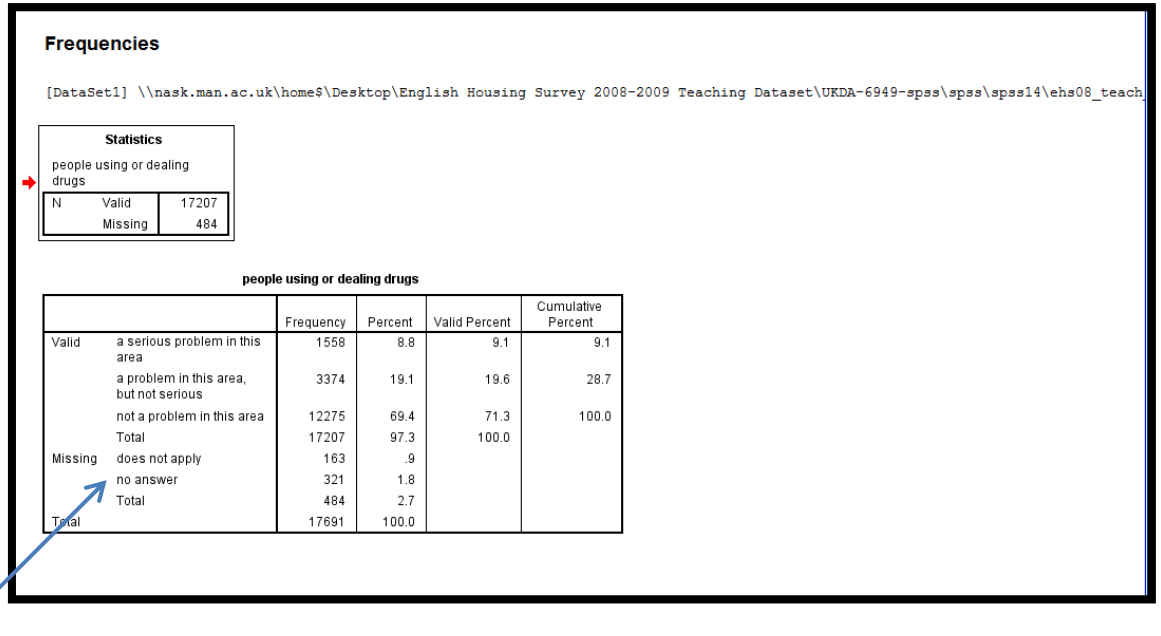
Missing Data



UK Data Service

Missing Data



Frequencies

[DataSet1] \\nask.man.ac.uk\home$\Desktop\English Housing Survey 2008-2009 Teaching Dataset\UKDA-6949-spss\spss\spss14\ehs08_teach

Statistics

people using or dealing drugs

N	Valid	17207
	Missing	484

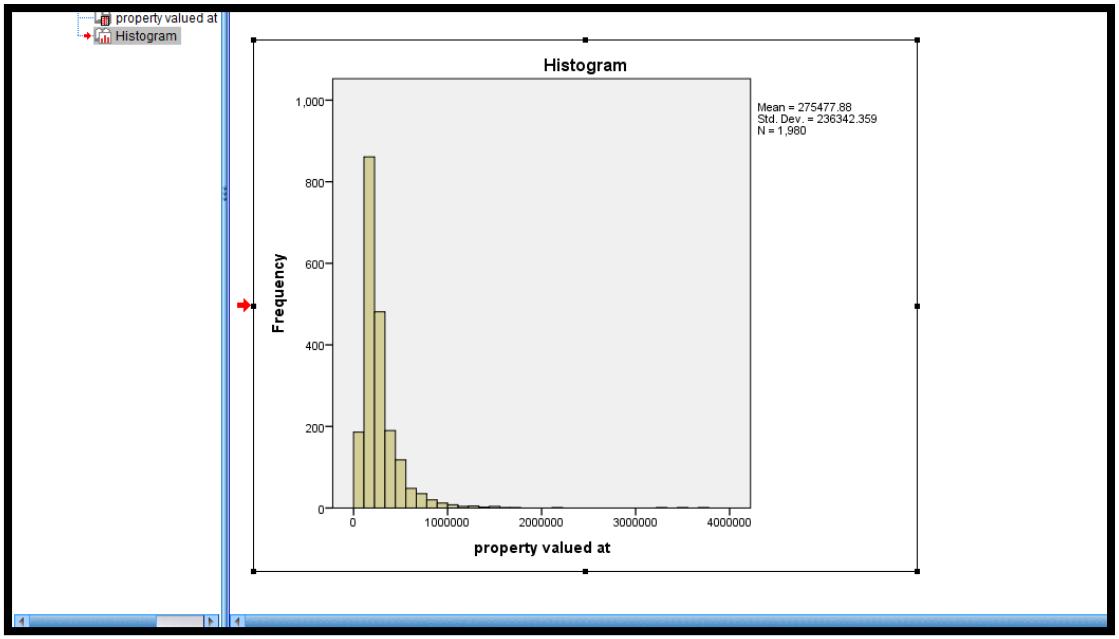
people using or dealing drugs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a serious problem in this area	1558	8.8	9.1	9.1
	a problem in this area, but not serious	3374	19.1	19.6	28.7
	not a problem in this area	12275	69.4	71.3	100.0
	Total	17207	97.3	100.0	
Missing	does not apply	163	.9		
	no answer	321	1.8		
	Total	484	2.7		
Total		17691	100.0		

UK Data Service

Bar Chart versus Histogram

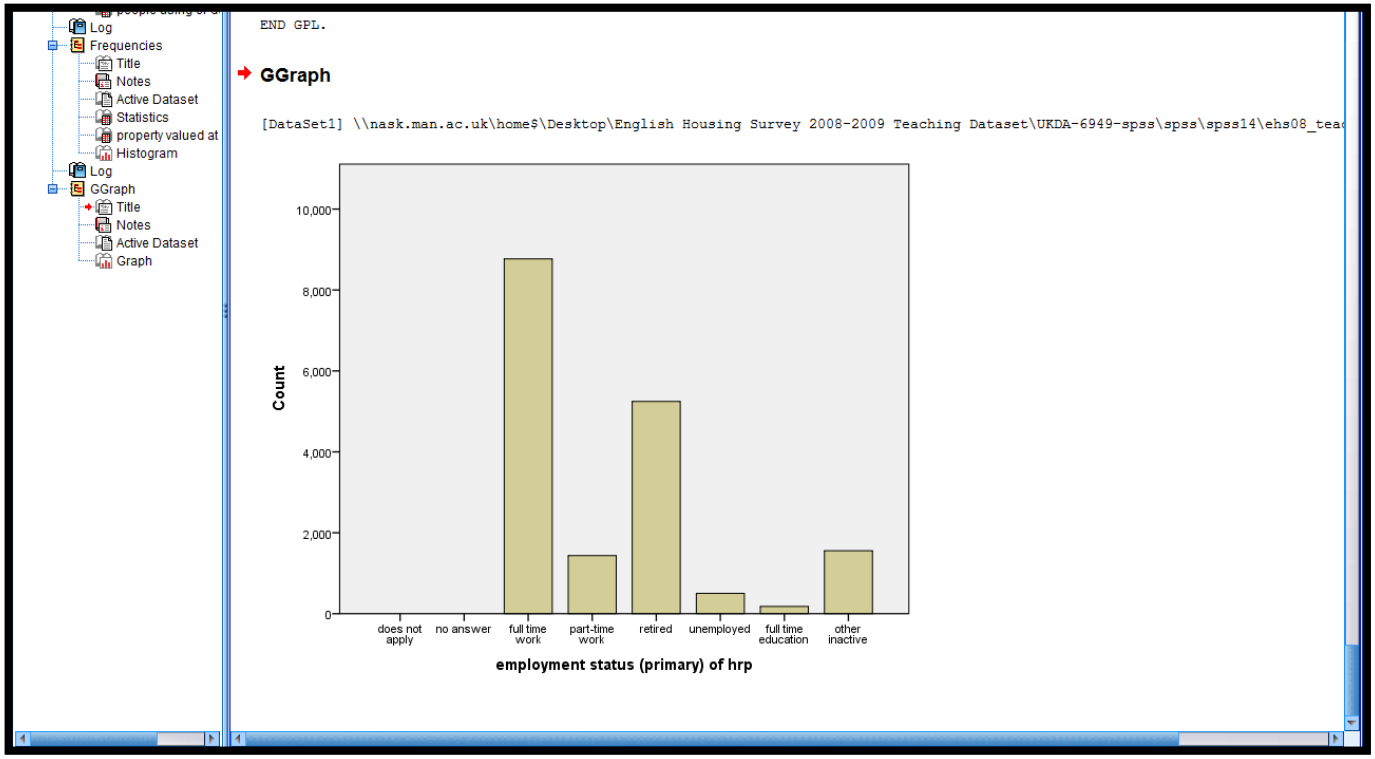
A histogram is produced when data is continuous. See below-the histogram for property values. The bars touch as data is contunuous.



UK Data Service

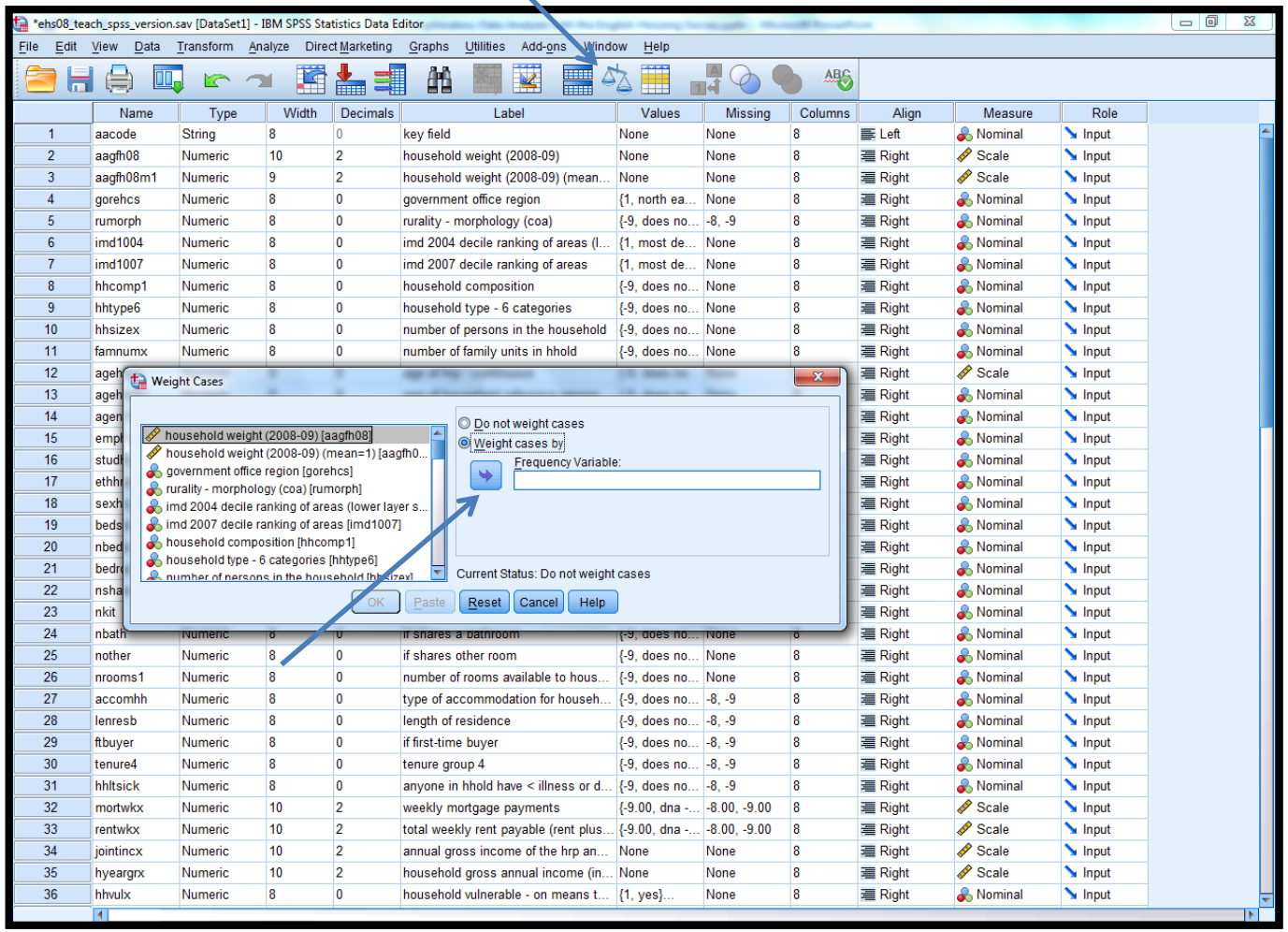
Bar Chart versus Histogram

A bar chart should be produced when data is categorical. See below-the bar chart for employment status. The bars are separate as the data are discreet.



UK Data Service

Weights



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2	aagfh08	Numeric	10	2	household weight (2008-09)	None	None	8	Right	Scale	Input
3	aagfh08m1	Numeric	9	2	household weight (2008-09) (mean...	None	None	8	Right	Scale	Input
4	gorehcs	Numeric	8	0	government office region	{1, north ea...	None	8	Right	Nominal	Input
5	rumorph	Numeric	8	0	rurality - morphology (coa)	{-9, does no...	-8, -9	8	Right	Nominal	Input
6	imd1004	Numeric	8	0	imd 2004 decile ranking of areas (l...	{1, most de...	None	8	Right	Nominal	Input
7	imd1007	Numeric	8	0	imd 2007 decile ranking of areas	{1, most de...	None	8	Right	Nominal	Input
8	hhcomp1	Numeric	8	0	household composition	{-9, does no...	None	8	Right	Nominal	Input
9	hhtype6	Numeric	8	0	household type - 6 categories	{-9, does no...	None	8	Right	Nominal	Input
10	hhsizex	Numeric	8	0	number of persons in the household	{-9, does no...	None	8	Right	Nominal	Input
11	famnumx	Numeric	8	0	number of family units in hhold	{-9, does no...	None	8	Right	Nominal	Input
12	ageh								Right	Scale	Input
13	ageh								Right	Nominal	Input
14	agen								Right	Nominal	Input
15	empl								Right	Nominal	Input
16	studl								Right	Nominal	Input
17	ethhr								Right	Nominal	Input
18	sexh								Right	Nominal	Input
19	beds								Right	Nominal	Input
20	nbed								Right	Nominal	Input
21	bedr								Right	Nominal	Input
22	nsha								Right	Nominal	Input
23	nkit								Right	Nominal	Input
24	nbath	Numeric	8	0	if shares a bathroom	{-9, does no...	None	8	Right	Nominal	Input
25	nother	Numeric	8	0	if shares other room	{-9, does no...	None	8	Right	Nominal	Input
26	nrooms1	Numeric	8	0	number of rooms available to hous...	{-9, does no...	None	8	Right	Nominal	Input
27	accomhh	Numeric	8	0	type of accommodation for househ...	{-9, does no...	-8, -9	8	Right	Nominal	Input
28	lenresb	Numeric	8	0	length of residence	{-9, does no...	-8, -9	8	Right	Nominal	Input
29	ftbuyer	Numeric	8	0	if first-time buyer	{-9, does no...	-8, -9	8	Right	Nominal	Input
30	tenure4	Numeric	8	0	tenure group 4	{-9, does no...	-8, -9	8	Right	Nominal	Input
31	hhltsick	Numeric	8	0	anyone in hhold have < illness or d...	{-9, does no...	-8, -9	8	Right	Nominal	Input
32	mortwkx	Numeric	10	2	weekly mortgage payments	{-9.00, dna -...	-8.00, -9.00	8	Right	Scale	Input
33	rentwkx	Numeric	10	2	total weekly rent payable (rent plus...	{-9.00, dna -...	-8.00, -9.00	8	Right	Scale	Input
34	jointincx	Numeric	10	2	annual gross income of the hrp an...	None	None	8	Right	Scale	Input
35	hyeargrx	Numeric	10	2	household gross annual income (in...	None	None	8	Right	Scale	Input
36	hhvulx	Numeric	8	0	household vulnerable - on means t...	{1, yes}...	None	8	Right	Nominal	Input

UK Data Service

Frequency Tables

Frequencies

[DataSet1] \\nask.man.ac.uk\home$\Desktop\English Housing Survey 2008-2009 Teaching Dataset\UKDA-6949-spss\spss\spss14\ehs08_teach

Statistics

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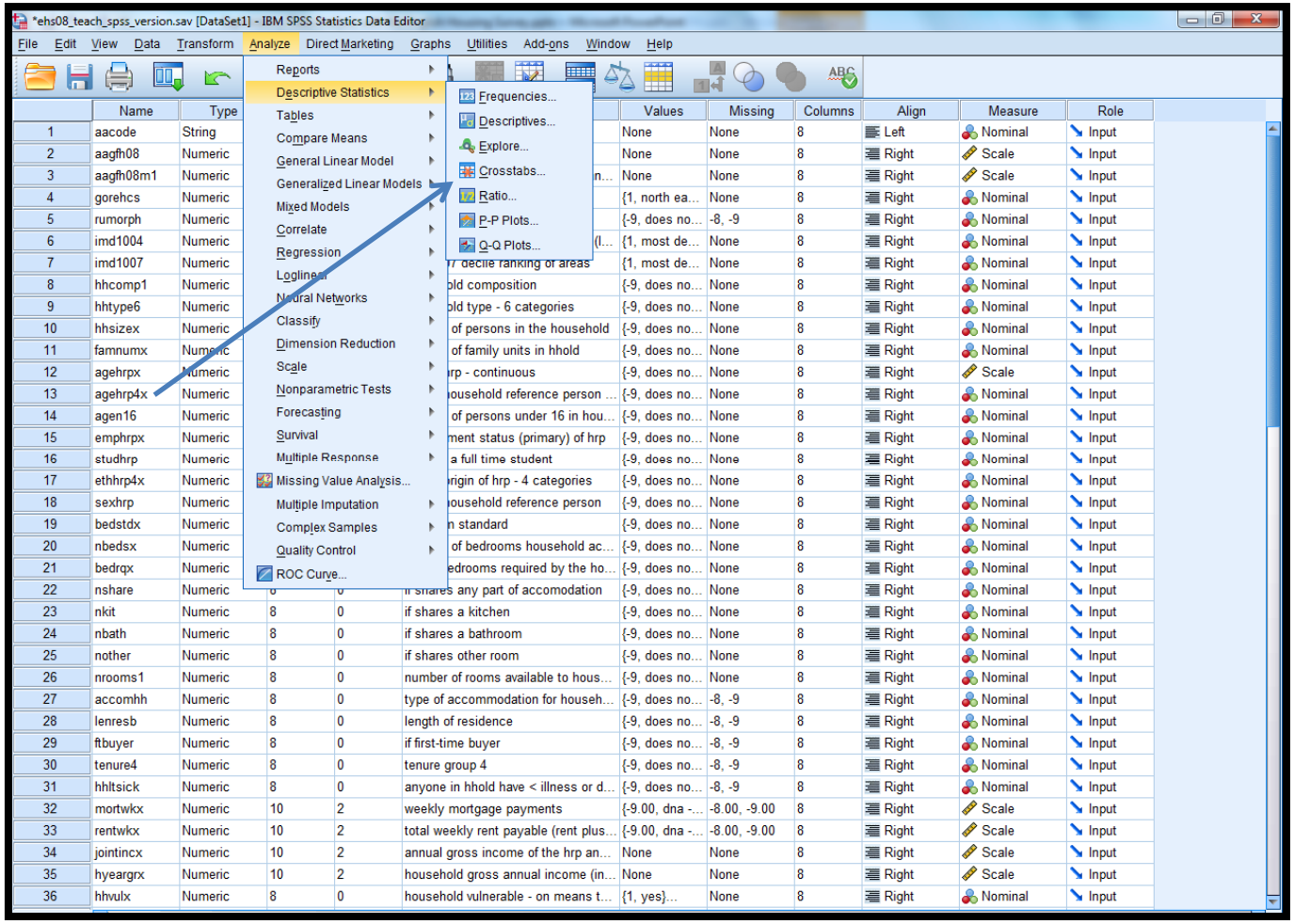
Cross-tabulations



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12	agehrpx	Numeric				{-9, does no...	None	8	Right	Scale	Input
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15	emphrpx	Numeric				{-9, does no...	None	8	Right	Nominal	Input
16	studhrp	Numeric				{-9, does no...	None	8	Right	Nominal	Input
17	ethhrp4x	Numeric				{-9, does no...	None	8	Right	Nominal	Input
18	sexhrp	Numeric				{-9, does no...	None	8	Right	Nominal	Input
19	bedstdx	Numeric				{-9, does no...	None	8	Right	Nominal	Input
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21	bedrqx	Numeric				{-9, does no...	None	8	Right	Nominal	Input
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24	nbath	Numeric	8	0	if shares a bathroom	{-9, does no...	None	8	Right	Nominal	Input
25	nother	Numeric	8	0	if shares other room	{-9, does no...	None	8	Right	Nominal	Input
26	nrooms1	Numeric	8	0	number of rooms available to hous...	{-9, does no...	None	8	Right	Nominal	Input
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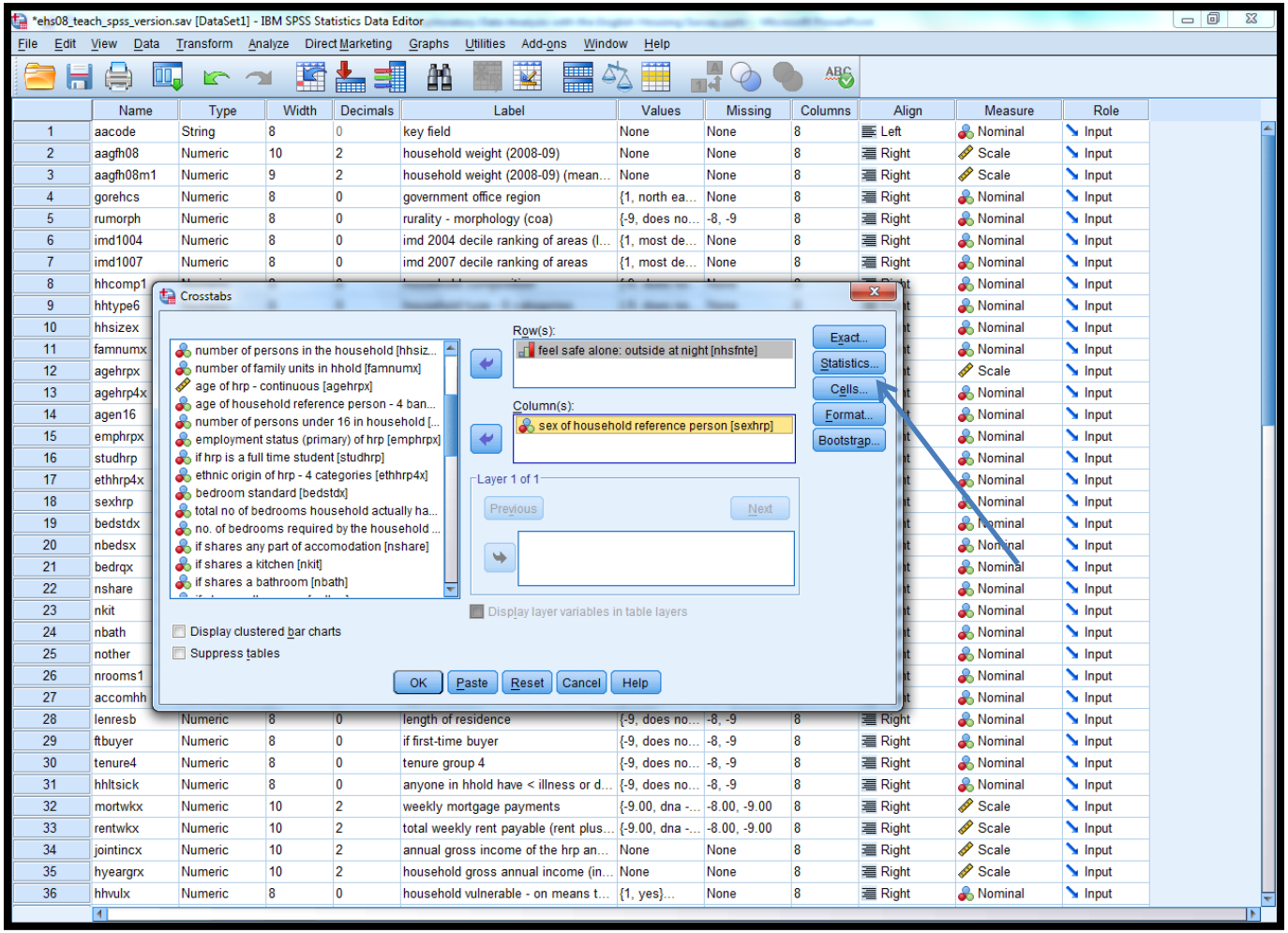
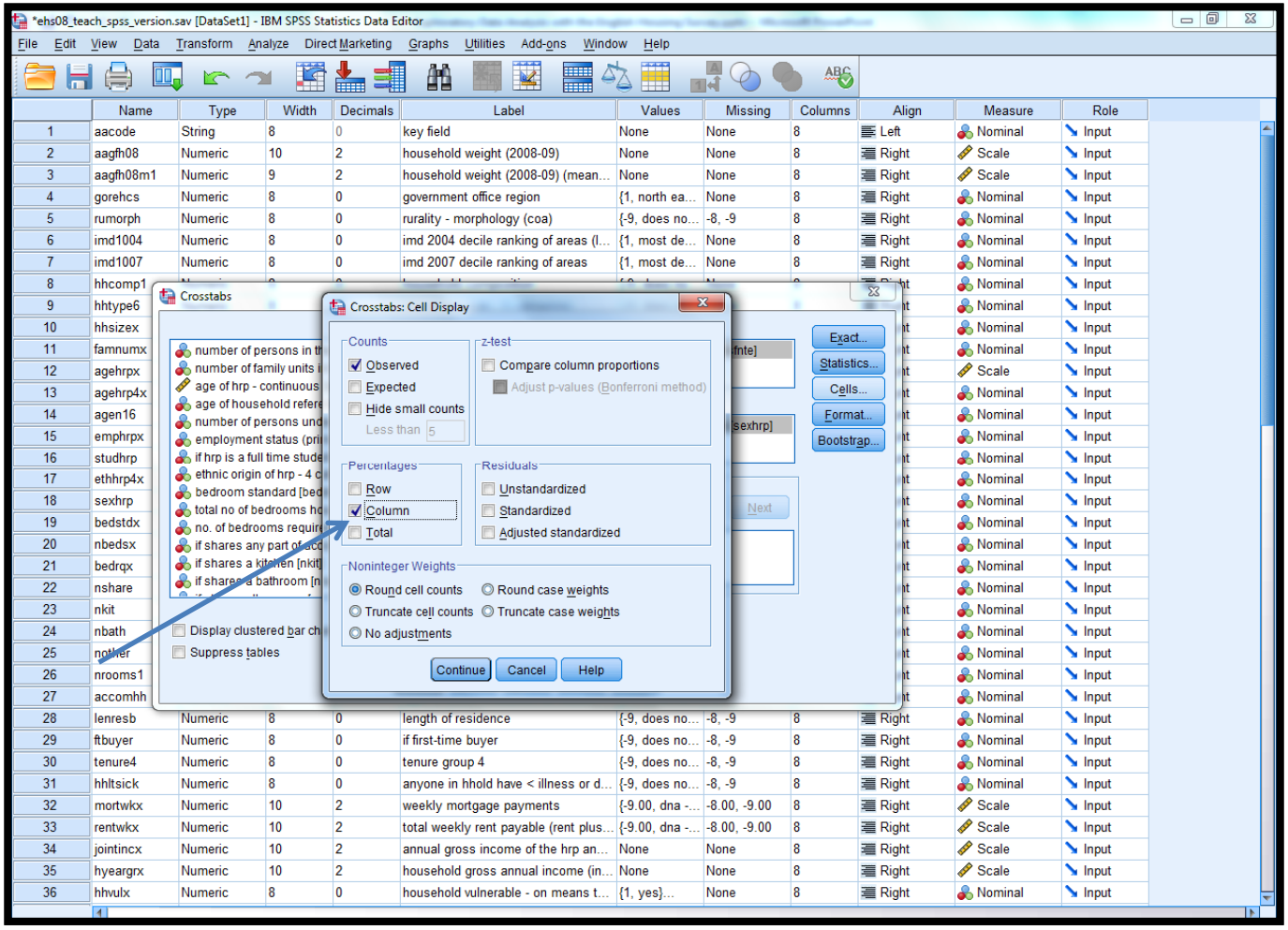
UK Data Service

Cross-tabulations



UK Data Service

Cross-tabulations



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
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11	famnumx									Nominal	Input
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16	studhrp									Nominal	Input
17	ethhrp4x									Nominal	Input
18	sexhrp									Nominal	Input
19	bedstdx									Nominal	Input
20	nbedsx									Nominal	Input
21	bedrqx									Nominal	Input
22	nshare									Nominal	Input
23	nkit									Nominal	Input
24	nbath									Nominal	Input
25	notlver									Nominal	Input
26	nrooms1									Nominal	Input
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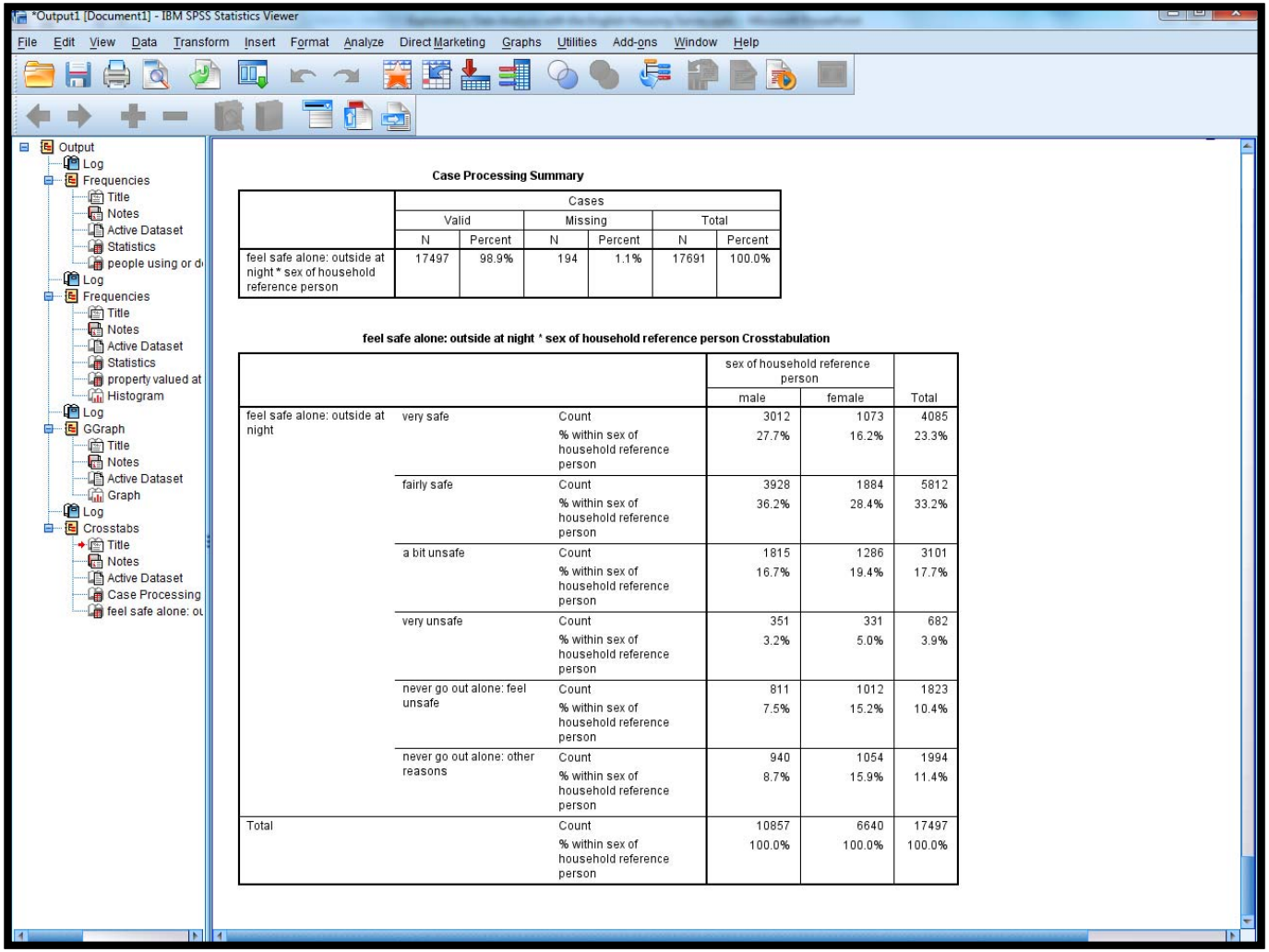
UK Data Service

Cross-tabulations



Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
feel safe alone: outside at night * sex of household reference person	17497	98.9%	194	1.1%	17691	100.0%

feel safe alone: outside at night * sex of household reference person Crosstabulation

			sex of household reference person		
			male	female	Total
feel safe alone: outside at night	very safe	Count	3012	1073	4085
		% within sex of household reference person	27.7%	16.2%	23.3%
	fairly safe	Count	3928	1884	5812
		% within sex of household reference person	36.2%	28.4%	33.2%
	a bit unsafe	Count	1815	1286	3101
		% within sex of household reference person	16.7%	19.4%	17.7%
	very unsafe	Count	351	331	682
		% within sex of household reference person	3.2%	5.0%	3.9%
	never go out alone: feel unsafe	Count	811	1012	1823
		% within sex of household reference person	7.5%	15.2%	10.4%
	never go out alone: other reasons	Count	940	1054	1994
		% within sex of household reference person	8.7%	15.9%	11.4%
Total		Count	10857	6640	17497
		% within sex of household reference person	100.0%	100.0%	100.0%

UK Data Service