

Critical Thinking



One of the portfolio requirements is a report in which you critically analyse the statistical work of others.

What you should do:

1. Choose one or more examples of statistical information to analyse. You can use one or more of the examples listed on the following pages or use other reports or articles that you find for yourself.
2. Print or photocopy the work you have chosen to analyse.
3. Write a report that critically analyses the use made of statistics in the work you have chosen. In your report you should consider whether you as reader of the work should accept or reject any reported findings based on the information available to you.

Note that:

- it is not your own views that should be the focus of your report, but the way in which someone else has used statistics;
- you should comment on the appropriateness and accuracy of the measures and diagrams used, the clarity of the presentation and to what extent you support any views that are expressed;
- the comments you make about the use of statistical measures and diagrams can be positive as well as negative and in some cases a suitable comment might be that further information is needed before the truth can be judged;
- you should consider how alternative samples, measures and diagrams could have been used;
- you should consider how the chosen sample may affect how the results should be interpreted, how particular results and findings have been highlighted and how other conclusions could have been drawn.



Website Resources

Social Trends

- includes chapters on: population, households and families, education and training, labour market, income and wealth, expenditure, health, social protection, crime and justice, housing, environment, transport, lifestyles and social participation.

<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=13675>

Transport

A huge variety of reports can be found on the Department for Transport's website at www.dft.gov.uk and other websites. A few examples are given below.

Transport Trends

Sections on roads, vehicles and congestion, personal travel, public transport, freight and logistics, ports and airports, safety and health and the environment.

<http://www.dft.gov.uk/pgr/statistics/datatablespublications/trends/current/>

Driver and Rider Behaviour

A range of reports some including the questions & findings from surveys (eg Pre-driver Education provision).

<http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme2/>

Tomorrow's roads – safer for everyone:

Review of progress made towards achieving the Government's casualty reduction targets for 2010.

<http://www.dft.gov.uk/pgr/roadsafety/strategytargetperformance/2ndreview/>

Department for Transport Research on Roads and the Environment

For example, 'Study into costs of fuel saving technology in passenger cars' looks at what would have happened to the fuel economy of new cars in the absence of the EC's Voluntary Agreement with car manufacturers; and the cost to manufacturers of adopting fuel saving technologies – a Powerpoint presentation that includes a variety of statistical diagrams.

<http://www.dft.gov.uk/pgr/roads/environment/research/>

NW Road Traffic Accidents Report March 2006

<http://www.nwph.net/nwpho/publications/forms/dispform.aspx?ID=106>

Congestion Charging

Report from a MORI telephone survey on Emissions Related Congestion Charging

<http://www.ipsos-mori.com/content/research-archive/emissions-related-congestion-charging.ashx>



Health

The Department of Health's website at www.dh.gov.uk has a large number of reports and others may be found on other websites. Some of these are listed below:

Smoking, drinking and drug use among young people in England in 2006

<http://www.ic.nhs.uk/statistics-and-data-collections/healthand-lifestyles-related-surveys>

Diet - Who's getting their five-a-day?

<http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/diet>

Forecasting Obesity to 2010

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStatistics/DH_4138630

Statistics on Drug Misuse: England, 2007

<http://www.ic.nhs.uk/pubs/drugmisuse07>

The Liverpool John Moores University Centre for Public Health website includes a range of reports on the use of alcohol and other health issues.

eg 'Taking Measures' is a report that studies the role that alcohol plays in North West lives and investigates the link with hospital admissions and violent crimes.

<http://www.cph.org.uk>

North West Child Height & Weight Measurement 2007

Analysis of child overweight and obesity data by the North West Public Health Observatory

<http://www.nwph.net/nwpho/publications/forms/dispform.aspx?ID=175>

Cancer Research UK – Lung Cancer & Smoking Statistics

Summarises the link between smoking and lung cancer and provides weblinks to many other useful websites.

<http://info.cancerresearchuk.org/cancerstats/types/lung/smoking/>

Health & Safety – Overall picture for Great Britain

<http://www.hse.gov.uk/statistics/overpic.htm>

Results from the Workplace Health and Safety Survey

<http://www.hse.gov.uk/statistics/publications/whass.htm>

World Health Report

<http://www.who.int/whr/2007/en/index.html>



The Economy

Many reports can be found on government and other websites. A few are listed below.

Economic and Labour Market Review

<http://www.statistics.gov.uk/elmr/>

Consumer Prices First Release

<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=868>

Annual Survey of Hours and Earnings

<http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15050>

Apprenticeship Pay 2007 – Survey of Earnings by Sector

<http://www.dfes.gov.uk/research/programmeofresearch/index.cfm?type=5&x=61&y=12>

House Price Reports

<http://www.housepricereports.com/OurReports.cfm>

<http://www.rightmove.co.uk/template/publicsite,aboutus,RTPRArchive.vm>

<http://www.nationwide.co.uk/hpi/review.htm>

<http://www.hbosplc.com/economy/HousingResearch.asp>

Joseph Rowntree Association – Distribution of income and wealth

<http://www.jrf.org.uk/bookshop/publications.asp?category=The+distribution+of+income+and+wealth>

Experiments on Telepathy/Psychic abilities

The following websites give the statistical analysis of the results of some experiments involving telepathy. A knowledge of significance tests is needed to fully understand the findings.

<http://www.sheldrake.org/Articles&Papers/papers/>

<http://www.boundary.org/experimental.htm>

Note

When choosing which resource(s) to use, you need to make sure that your selection will allow you to discuss a variety of statistical measures and diagrams and comments or conclusions based on them.



Teacher Notes

Unit Advanced Level, Using and applying statistics

Notes

This resource is intended to help learners to provide the evidence for section 2 of the coursework portfolio requirements (reproduced below from the specification for this unit).

What you need to produce	You must:
<p>2 A report in which you have analysed critically the statistical work of others. This should consider whether you as reader of the work should accept or reject any reported findings based on the information available to you</p>	

This portfolio requirement should be discussed with learners before they start their report. As a rough guide the specification suggests that candidates will need to 'allow about two hours to write a report of their analysis of the work of someone else'.

Ideally your students should study the use of statistics relating to their other studies or interests but sometimes it is difficult to find appropriate material. If this is the case, you could try some of the weblinks given on Pages 2 and 3. The brief descriptions should help you to decide whether they are likely to be of interest to your students. Note that the reports that are available from these websites vary widely in the amount of statistical and other knowledge that they assume from their readers. Some reports are long and complex whereas others are much more superficial and easier to understand. It is recommended that you have a look at each website, select material that you think is most suitable for your learners, then edit the list of weblinks in the Word version of this assignment to show only those resources that you think are appropriate. You can advise learners to analyse just one report (in some cases, just one section) or to compare and contrast the way in which two people or organisations use statistics to report findings. Students could also be encouraged to look for and use relevant reports from other websites, newspapers, magazines or books. They could also use an investigative television programme if they wish.

Note

Links to websites with information about Global Warming are given in the Nuffield resource 'Global Warming'. This can be downloaded from <http://www.fsmq.org/resources/using-and-applying-statistics,80,MO,AS.html>

