

HEALTH POVERTY INDEX (HPI) Workbook



12/01/2009

This workbook is designed to take you through some of the features of the HPI Tool and demonstrate how it can be used to provide a single visual summary of an area's "health poverty". As we go through this workbook, we will introduce the different areas and comparator groups available for analysis and the variety of different ways you can visualise the data in this powerful and flexible web-based application.

THE HPI WEBSITE

>>> The HPI website is publicly available at www.hpi.org.uk. To access the site, please open an internet browser, such as Internet Explorer or Google Chrome and enter **www.hpi.org.uk** in the URL bar.

The screenshot shows the Health Poverty Index website in a Microsoft Internet Explorer browser window. The address bar displays 'http://www.hpi.org.uk/'. The website layout includes the NHS logo and 'The Information Centre for health and social care' branding, along with contact information: '0845 300 6016' and 'enquiries@ic.nhs.uk'. A navigation menu at the top offers links to 'Welcome', 'About the HPI', 'Indicators', 'Demo', 'Background Docs', and 'The HPI tool'. The main content area features a 'Further Information' section, a 'Welcome to the Health Poverty Index (HPI) visualisation tool' section, and a 'Selection of front page images' box. The footer contains 'Terms and conditions', 'CSS', 'HTML', 'Contact us', 'Sitemap', 'Re-use of data', 'Copyright', and 'Credits'. The system tray at the bottom shows the time as 08:55.

The main page gives a brief welcome and introduction to the project and offers a number of links to various options both in the text and in a menu across the top of the page. The menu is the main means of navigating the site. The available links are:

About the HPI - provides a more detailed background to the project, such as its conceptual structure and design. This is really important section to read in order to understand how the HPI differs from other analytical tools.

Indicators – offers a list of the twenty-five indicators used on the HPI Tool and provides detailed metadata of how the indicators were derived.

Demo – this offers a brief step by step run through of how to use the HPI Tool. We will cover much of this and more throughout this demonstration.

Background Docs –supplies useful additional resources.

Please feel free to browse these options at your leisure, but the remainder of this demonstration will mainly be concerned with using the **HPI Tool**.

>>> Please click on **The HPI Tool** link and familiarise yourself with the options.

The HPI Tool page is the main page from which to query the HPI data. The query options are presented in a number of pull down menus allowing you to select an area of interest, a comparative area, the years you are interested in and ethnicity.

At present, comparisons are available at three time points, 2001, 2003 and 2005.

Finally, the user also has an option to select whether to scale or rank the indicators. These options are located towards the bottom of the page. Further information on scaling and ranking the HPI data will follow.

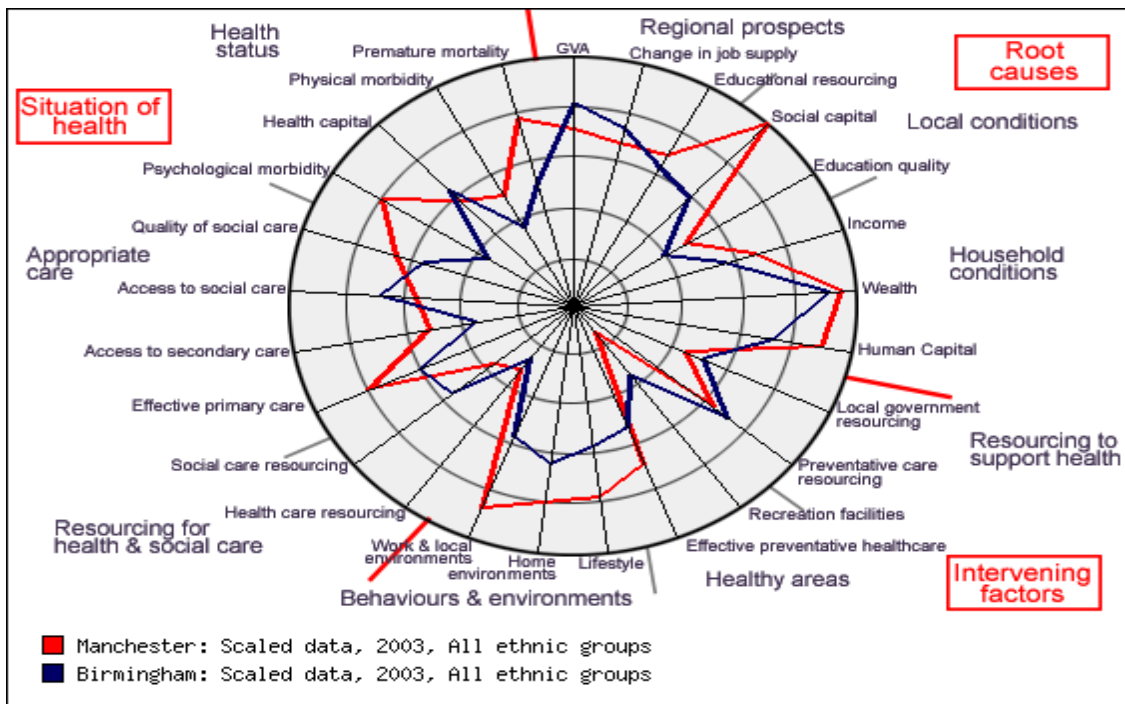
COMPARING HEALTH POVERTY IN LOCAL AUTHORITY DISTRICTS

The main building blocks used in the HPI Tool are Local Authority Districts (LADs). As you work through this handout, it would be beneficial to use LADs with which you are personally familiar so that you can apply your knowledge of the areas to results you receive from the HPI. For simple demonstration purposes, we have used Manchester and Birmingham LADs as examples.

>>> using the ‘...Compare 2 areas at the same point in time »’ tab select two different Local Authorities for your choice from the drop down menus for the **Main Group** and the **Comparison Group**. Select 2003 for timepoint menus. Check that the scaled/ranked option is as **scaled information** and when you are ready press the **View HPI Data!** button at the bottom of the page.

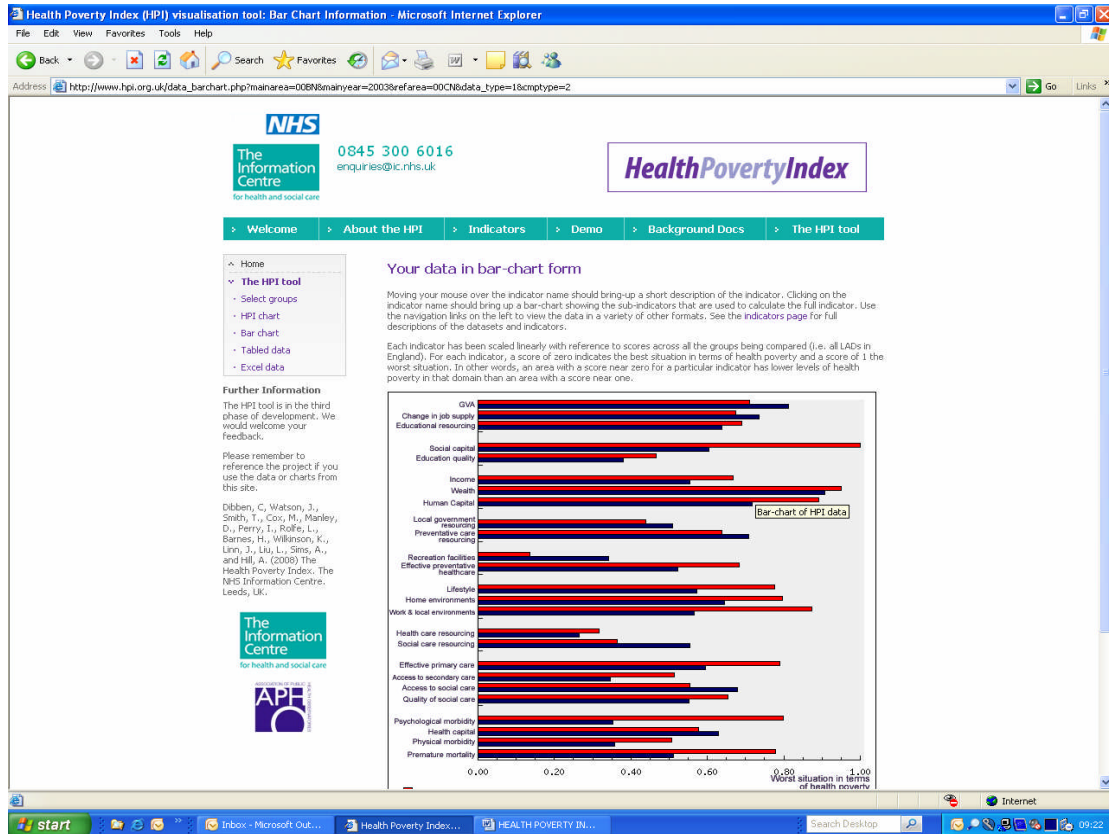


The result should be a spider graph similar to the one shown below which provides an overview of all the scaled HPI indicators for your chosen areas. All the indicators are scaled between **0** and **1**. Nearest the centre of the graph represents the best possible situation (or the least “health poverty”). Towards the outside edge of the graph represents the worst possible situation (or the most “health poverty”).



The data in the spider graph can also be viewed as a bar chart or as a table...

>>> Try browsing your results as a bar chart and as a data table by clicking on **Bar chart** or the **Tabled data** link in the navigation menu on the left hand side of the page. You can return to the spider graph at any time by clicking on the **HPI chart**.



You can also look at the scaled scores of the sub-indicators which make up each indicator, by clicking on the name of the indicator from any of the data viewing options.

>>> Whichever view of the data (spider graph, bar chart or tabled view) you are currently looking at, click on **Work & local environments** name tag.

This will return a webpage with a list of the six indicators which make up the Work & local environment indicator and a bar chart comparing the scaled sub-indicators scores for your main and comparator LADs. Detailed metadata regarding the data sources and how the sub-indicators are calculated are available from the **Indicators** page of the HPI website.

INTERPRETING HPI DATA

>>> When interpreting your data (be it in a spider graph, bar chart or tabled form), we suggest the following questions as useful starting points:

1. Which indicators are the obvious outliers (very high or very low)? Are they what you would expect? Do you understand the reasons for them?
2. Look in general at the **Root causes, Intervening factors** and those describing the **Situation of health**. Are they the same end of the scale? Are high inputs aligned with poor outcomes or vice versa?
3. Do **GVA** and **Job Supply** align with **Wealth** and **Income**?
4. Is good resourcing in one area offset by poor resourcing in another?
5. Do your LADs have good outcomes despite poor resourcing?
6. There are some obvious partners of inputs and outcomes in education and a social care:

Education resourcing - Education quality and Human capital;
Social care resourcing - Access to social care and Quality of social care.

Are the inputs and the outcomes comparable?

7. Look at all the indicators of the wider determinants of health as well as the health resourcing indicators and think about their impact is on the health of the community.

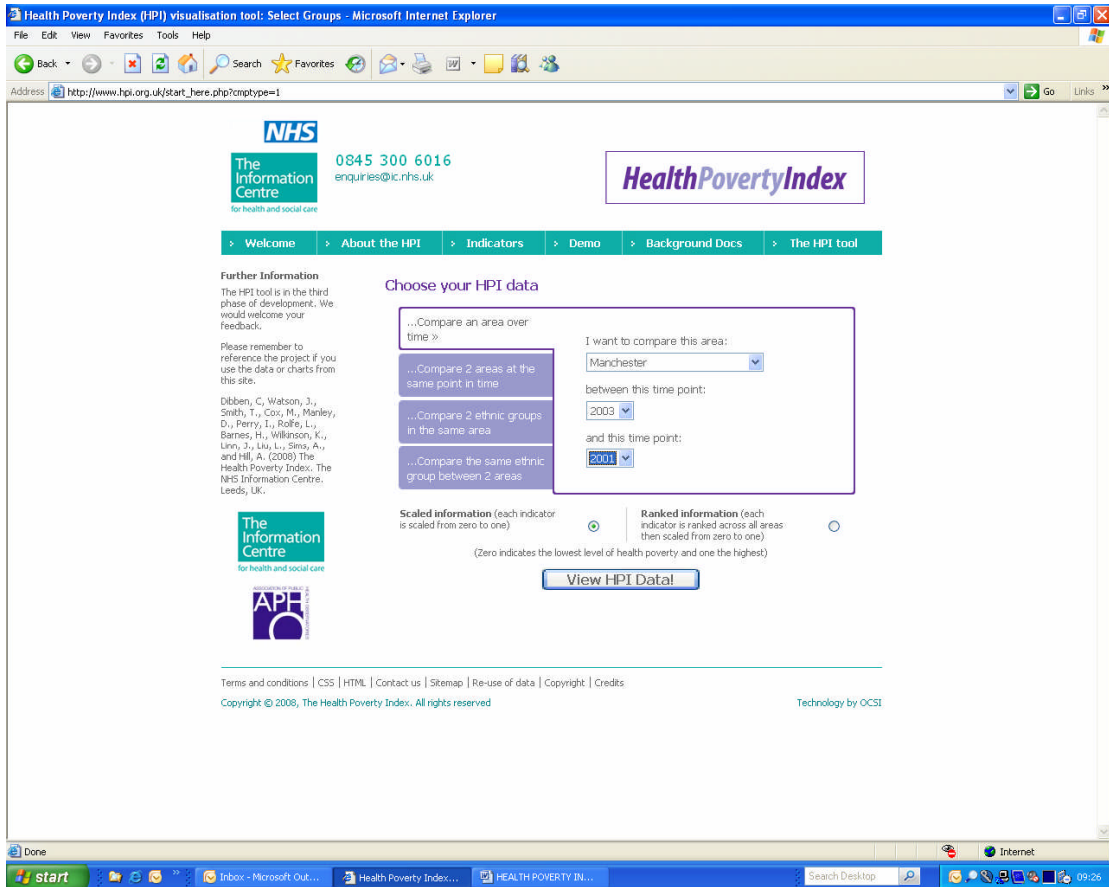
In our example, Manchester has worse indicator scores than Birmingham for the **Behaviours and environment** and **Health Status** sectors of the spider graph, despite having better scores in the Regional prospects indicators.

Manchester has better indicator scores in the **Resourcing to support health** and **Healthy areas** sectors in the spider graph which may reflect increased public funding to tackle poor health and other social issues. For both Manchester and Birmingham, good resourcing inputs are generally matched by good outcomes.

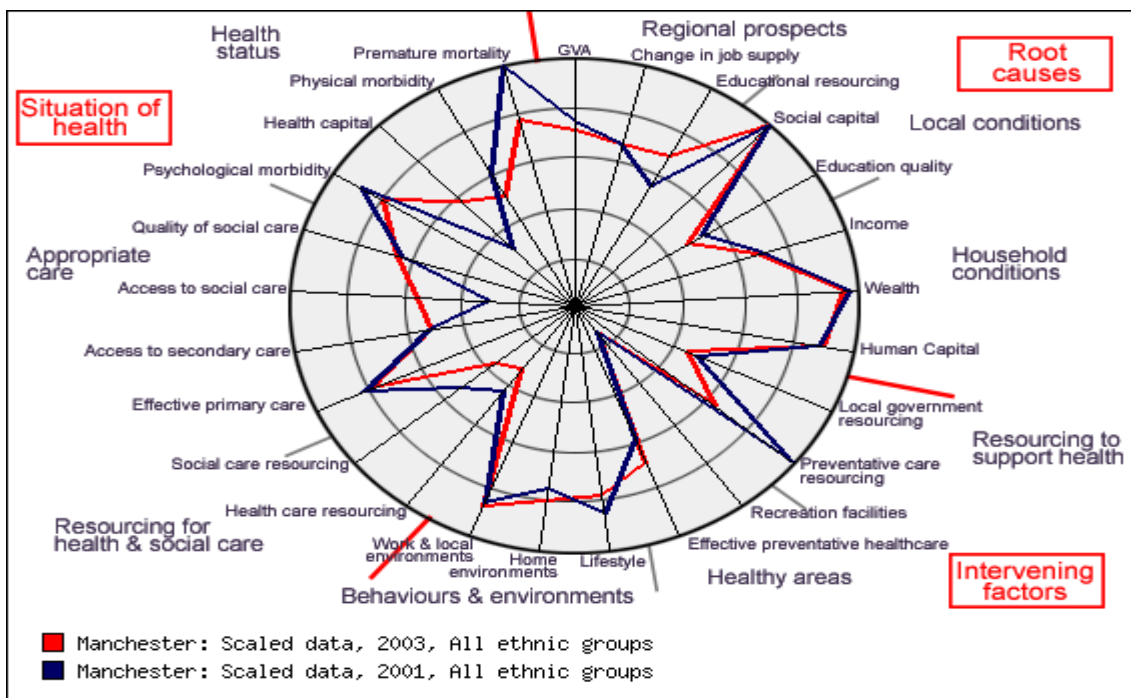
COMPARING HPI DATA THROUGH TIME

HPI data is currently available for three time points (2001, 2003 and 2005) and new time points will be added as and when the data becomes available. To take advantage of this the **HPI Tool** allows you to compare the HPI for the same LADs or groups at two of the time points.

>>> Return to the **HPI Tool** page (there is a link in the navigation menu across the top of the page) and select **Compare an area over time**. Select the desired LAD and select 2003 for the **Year at the first time point** and select 2001 for the **second time point**.



This query will return the HPI data in the usual spider graph form. Note that the indicator scores in the graph are directly comparable as they are scaled in reference to all HPI time points. Therefore in our example (below) it would seem that health and social resourcing in Manchester has increased and health outcomes have improved between 2001 and 2003.



COMPARING HEALTH POVERTY FOR OTHER GROUPS OF AREAS

Comparisons within the HPI Tool are not restricted to individual LADs. For instance you may be interested in how the scores for your LAD compare to the average for authorities in the same ONS classification and therefore with similar physical and socio-economic characteristics, (thereby allowing a like with like comparison), or to Spearhead LADs.

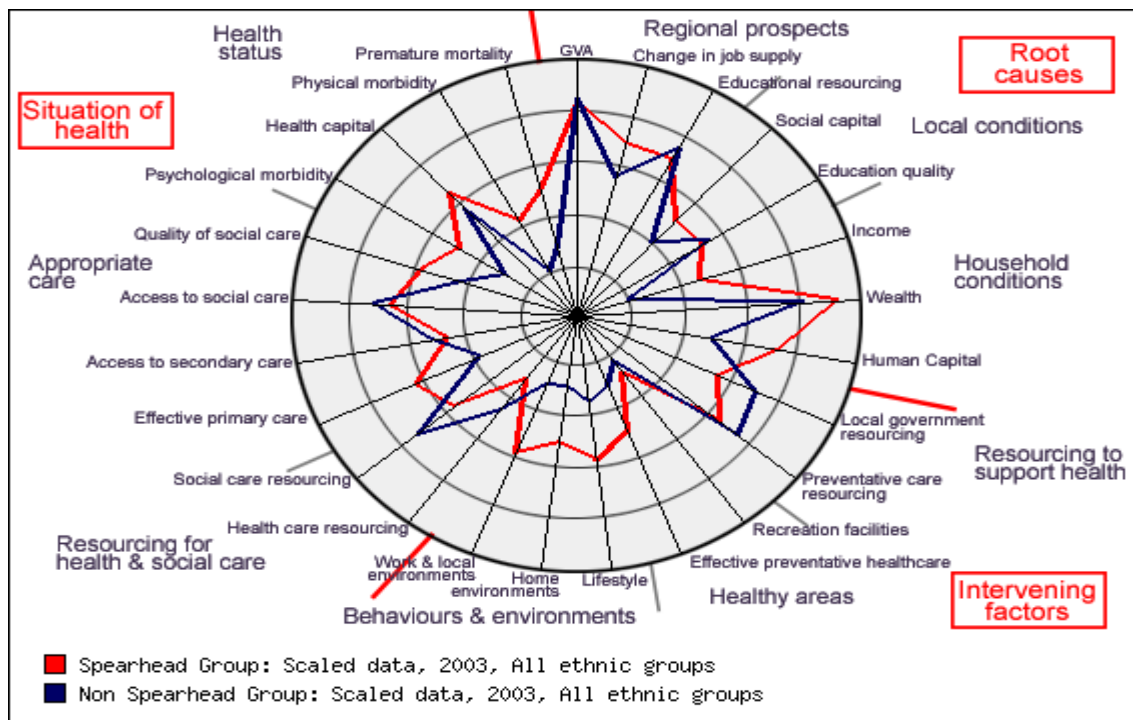
>>> Run a **HPI Tool** for “...Compare 2 areas at the same point in time »” query with your chosen LAD selected as the **Main Group**, but this time select ‘compare with ONS supergroup’ as the **area to compare**. Select 2003 as the **Year**.

Note the HPI Tool will know which ONS supergroup your LAD belongs to and automatically selects the correct supergroup for the graph. In the case of our example Manchester belongs to the ‘Cities and Services’ ONS supergroup and produces similar results to our comparison with Birmingham.

If you wish to compare your chosen LAD to areas which are even more similar, you can also run comparisons with the ONS group and sub-group. However, we are now going to compare your LAD to the Speargroup of LADs...

>>> Run the **HPI Tool** for your LAD, but this time make ‘Spearhead’ the **Comparison Group**.

Another option you might consider is to compare your LAD to the non-Spearhead LADs group. Alternatively, you can abandon the LAD you have been using up to now in the exercise and compare health poverty in Spearhead LADs and non- Spearhead LADs (as shown)



COMPARING INDICATORS OF HEALTH POVERTY BY ETHNICITY

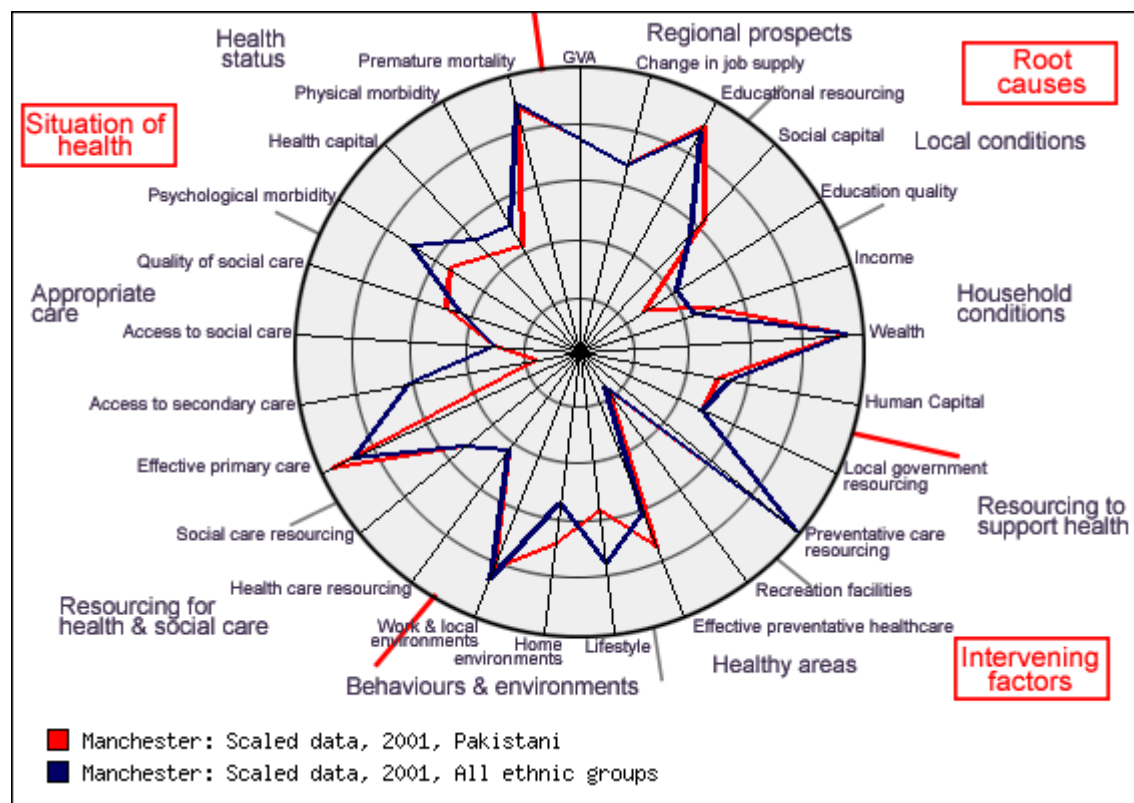
One of the unique features of the HPI Tool is the ability to compare levels of health poverty in an area with reference to specific ethnic groups.

However, it is important at this point to note that not all the raw data used in the HPI was available broken down by ethnicity. In these instances, where possible, the sub-indicator scores for each ethnic group have been modelled and estimated (more information on estimation will follow this demonstration). Where modelling is not possible, each ethnic group is ascribed the same indicator score as the general population.

Unfortunately, at present, it has simply not been possible to update many of the 2003 or 2005 HPI indicators by ethnic group. Therefore, the only HPI data presented by ethnic group is for 2001.

>>> Return to the **HPI Tool** and using the “...Compare the same ethnic group between 2 areas >>” tab select your LAD as the **Area** for both the **Main Group** and the **Comparison Group**. Finally, select one of the minority ethnic groups and compare it to the White population.

Return to the **HPI Tool** and using the “...Compare 2 ethnic groups in the same area >>” tab select your desired LAD as the **Area** then select the two ethnic groups you wish to compare.



In the above example, we can see that the Pakistani population of Manchester LAD has poorer scores for **Social capital** and **Effective primary/secondary care**, whilst enjoying better **Lifestyle**, greater **Access to secondary care** and better scores in a range of morbidity and mortality measures.

SCALING AND RANKING OF HPI DATA

So far in this demonstration we have only used indicator scores in their scaled form. The scaling of each indicator score is calculated in reference to all the available LAD time points, (2001, 2003 and 2005) and, for the ethnic groups, all the groups (i.e. all ethnic groups) as well as LADs.

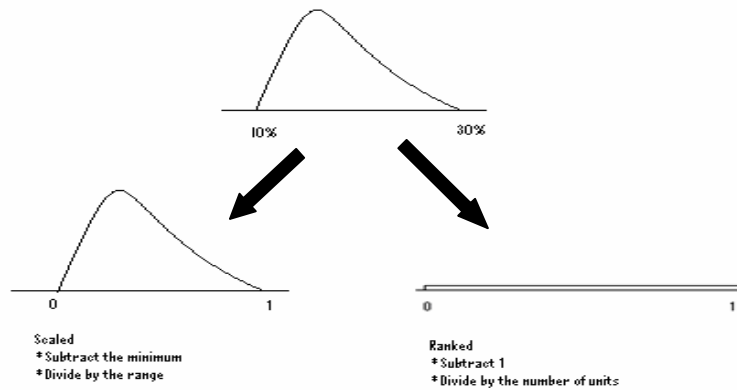
The algorithm for the scaling is very simple – the minimum score across all the groups and time points is subtracted from each individual score which is then divided by the range of scores.

The scaling serves a dual purpose:

1. It places all the indicators on the same scale between **0** and **1**. (**0** being the least health poverty and **1** being the most health poverty, in the HPI dataset).
2. It maintains the absolute positions of each score allowing the direct comparison of scores across different time points and groups, (i.e. if there is a large difference in the raw indicator score for the **Main Group** score and the **Comparison Group** score, this is similarly reflected by a difference of the same proportion between their scaled scores).

One problem in interpreting the scaled HPI scores is that the scaling process preserves the distribution of the original scores and therefore they are often clustered together. Similarly, if the underlying distribution is skewed, this can also tend to make the scaled indicator score for many groups look particularly high or low.

One way to address this is to rank the indicator scores (which can be selected in the blue box toward the bottom of the **HPI Tool** page). Ranking the data has the effect of evenly spreading the indicator scores and showing the ranked position, in relation to all other time points and groups.



The advantage of using ranked data is that they allow you to clearly see whether your area’s health poverty indicators are amongst the best, middle or worst when considered against all the other areas and time points. The disadvantage is that areas which may be ranked close together may have widely diverging scores for particular indicators and vice versa, as the absolute positions of the scores are lost.

Therefore, we believe ranked and scaled data to be complimentary and suggest that it is often beneficial to consider both when analysing HPI data

>>> Re-run one of your previous **HPI Tool** queries. However, this time select **ranked information** rather than **scaled information** from the bottom of the page.

Choose your HPI data

...Compare an area over time

I want to compare this area:

...Compare 2 areas at the same point in time »

...Compare 2 ethnic groups in the same area

to this area:

...Compare the same ethnic group between 2 areas

for this time point:

Scaled information (each indicator is scaled from zero to one)



Ranked information (each indicator is ranked across all areas then scaled from zero to one)

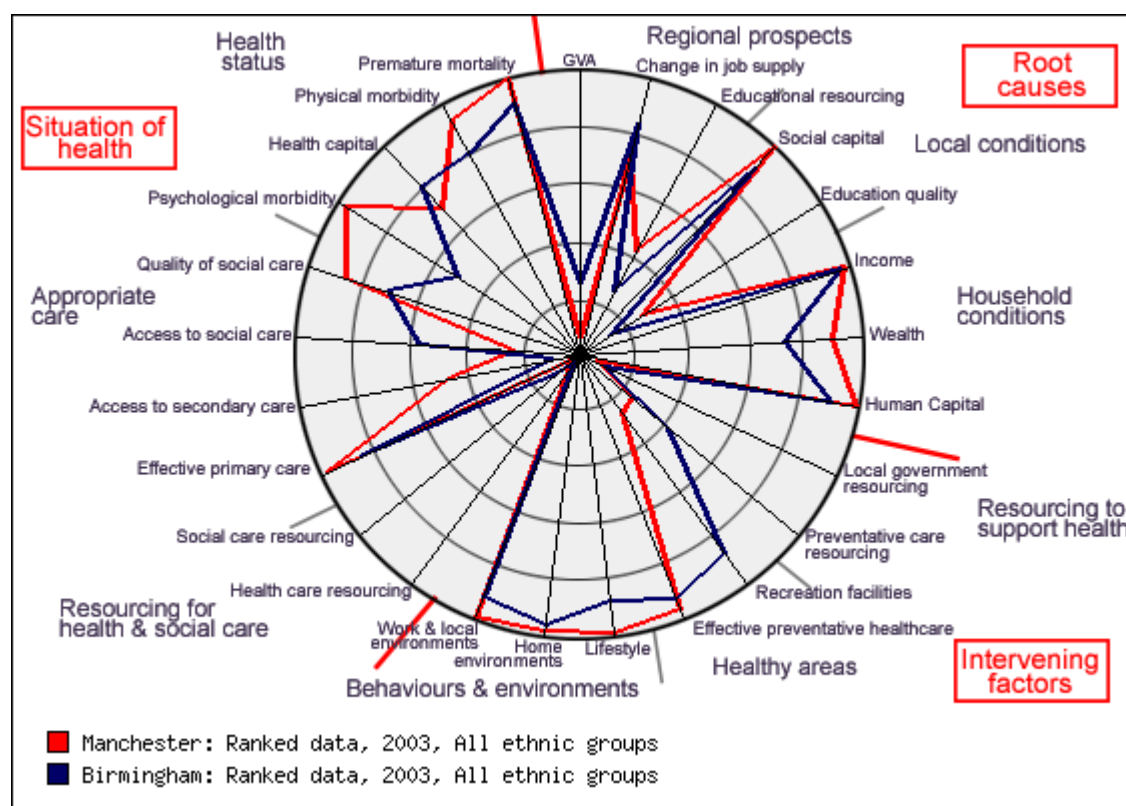


(Zero indicates the lowest level of health poverty and one the highest)

View HPI Data!

We have included a spider graph based on our earlier Manchester/ Birmingham comparison, but this time with ranked rather than scaled data (see below).

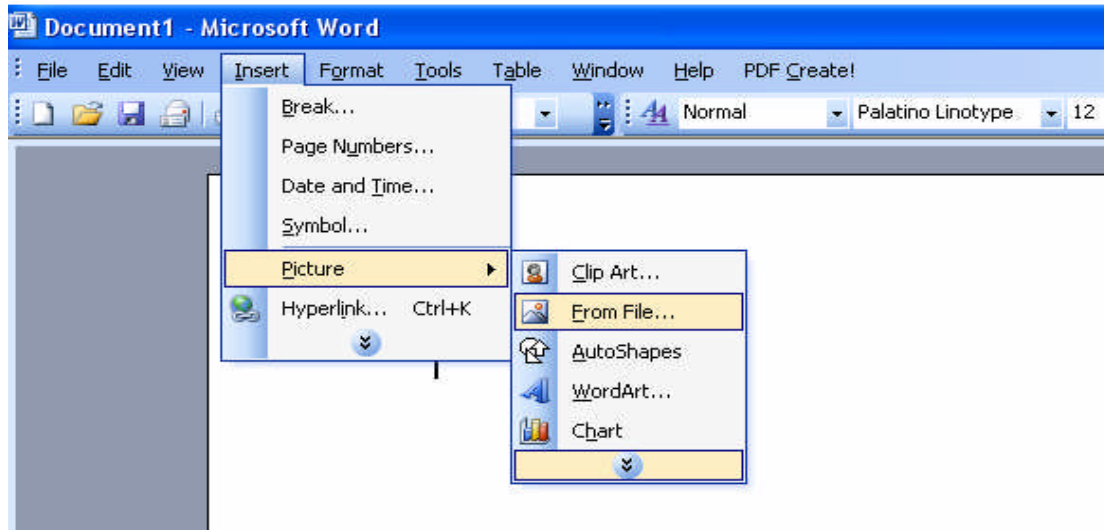
In this example, ranking has the effect of polarising the HPI data for these areas. Compared to ranking all the other groups in the HPI dataset, these LADs have some of the highest levels of resourcing, as well as some of the worst levels for various socio-economic, environmental, behavioural and health outcome indicators. This is not as clear from the results of the scaled data, as other groups have considerably better or worse scores than our LADs.



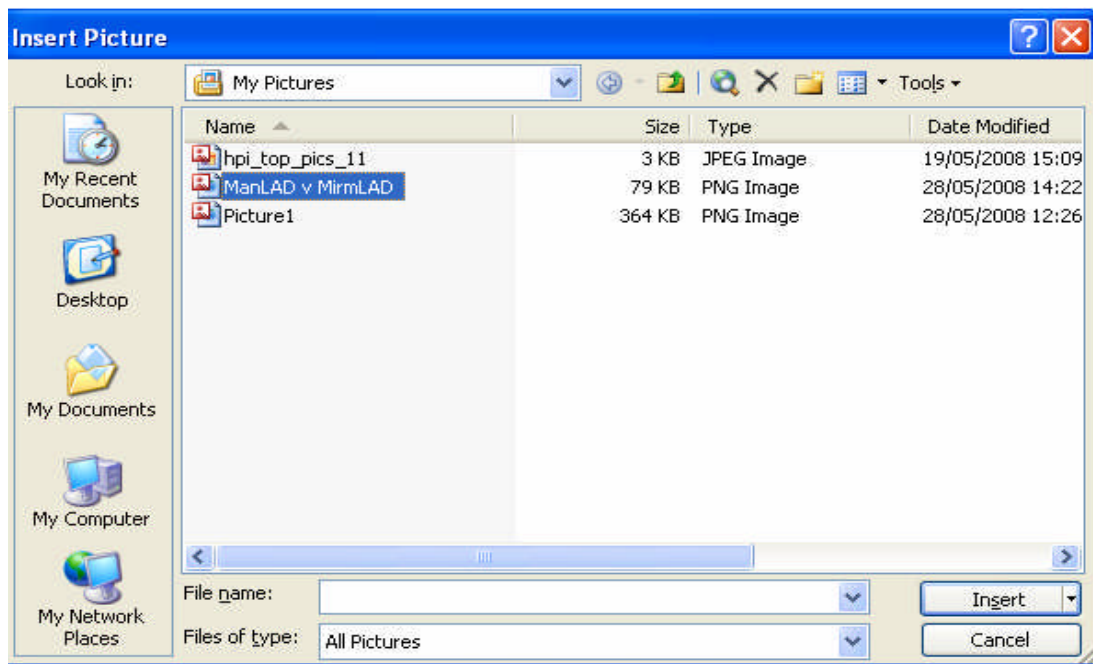
USING HPI DATA AND GRAPHS IN YOUR OWN DOCUMENTS

You are welcome to use any graphs and charts you generate via the HPI website within your own documents. This can be done relatively simply by placing your cursor over the graph, clicking the right mouse button and selecting the 'Save Picture As...' option. (Remember to save it somewhere memorable on your computer).

Most word processing and office software has the ability to insert these pictures into your documents. For instance, in Microsoft Word, this would be achieved via the **Insert** menu...



And then from the ensuing dialogue box select the HPI image you have saved...



If you wish to create your own tables and graphs for the data you have generated, the scaled/ranked indicator scores are also available to download as an Excel file. Once you have run your HPI query, simply click on the **Excel data** link in the left hand navigation menu.

We hope that you find the HPI useful and please feedback any comments you may have via the **Feedback** link on the main page of the HPI website.

Please remember to reference the project if you use data or charts from the HPI site: Dibben, C, Watson, J., Smith, T., Cox, M., Manley, D., Perry, I., Rolfe, L., Barnes, H., Wilkinson, K., Linn, J., Liu, L., Sims, A., and Hill, A. (2008) The Health Poverty Index. The NHS Information Centre. Leeds, UK.