

# Benchmarks and A level subject information

## PISG 12/01

### Issue

1. In March 2011 the Performance Indicators Steering Group discussed recent criticisms of the Performance Indicators and their benchmarks, and whether or not the current benchmarks took sufficient account of institutions' admissions requirements. At that time the group requested that the Performance Indicators Technical Group undertake work to provide evidence regarding the impact and technical considerations of including A level subject information in the PI benchmarks.

### Recommendation

2. That A level subject area should not be included as a factor within the PI benchmark calculations.
3. That the PISG consider how any decision might be presented publically.

### Discussion

4. The PISG acknowledged at their March 2011 meeting that the perception of the PIs by others is important given the current profile of the indicators, and that criticism and questioning of robustness may pose a reputational risk for the PIs. In particular, at that time, information for students regarding A level and subject choices was topical and inclusion of this information in the PI benchmarks had been called for.

5. Members recognised that their response to these issues needed to be informed by an evidence base. They requested that the PITG undertake work to explore these issues further and provide them with the required evidence base.

6. The PITG have considered a range of factors in relation to these issues: potential methods to take A level subject into account in benchmark calculations; the impact of implementing such methods on the benchmarks calculated for institutions; and advantages and disadvantages of doing this. On the basis of these considerations they have prepared the evidence and advice that follows.

#### Potential methods

7. The PITG have considered a range of methods that could potentially be used to include A level subject information in the PI benchmarks.
  - a. Identifying the most frequent A level subject combinations (based on the three best A level grades) held by entrants to different HE subject areas at highly selective institutions: method referred to as '**Highly selective combination**'.
  - b. Identifying the most frequent single A level subject held by entrants to different HE subject areas at all institutions: method referred to as '**Sector A level**'.
  - c. Identifying the most frequent single A level subject held by entrants to different HE subject areas at highly selective institutions: method referred to as '**Highly selective A level**'.
  - d. Identifying the most frequent single A level subject at grade 'A' held by entrants to different HE subject areas at all institutions: method referred to as '**Sector A grade A level**'.

e. Identifying the most frequent single A level subject at grade 'A' held by entrants to different HE subject areas at highly selective institutions: method referred to as '**Highly selective A grade A level**'.

8. Members of the PITG have agreed that the range of methods they have now considered exhaust reasonable approaches to the inclusion of A level subject information within the PI benchmark calculations<sup>1</sup>. The group have considered the issues in respect to both the widening participation (WP) and retention indicators, as well as other types of qualifications within the tariff. They feel that they have undertaken sufficient and thorough analysis to make an informed, robust recommendation to the PISG.

#### The impact of implementing such methods on the benchmarks calculated for institutions

9. The indicative analyses that the PITG considered showed that each of the methods had a low impact: on individual institutions and on interpretation of the indicators.

10. For example, for each of the components of the WP indicators the PITG considered the numeric changes when calculating the benchmarks using each of different methods. In particular benchmarks when calculated on the basis of the existing, location-adjusted method were compared to benchmarks calculated on the basis of incorporating one of the methods a. to e. described at paragraph 8 above.

11. This comparison showed that, incorporating any one of the methods a. to e. in respect to the state schools indicator, at least 58 per cent of institutions would see their benchmark remain within +/- 0.25 of the existing location-adjusted benchmark. A maximum of 14 per cent of institutions would see movement of +/- 0.5 or more.

12. By contrast, the existing location-adjusted benchmark is within +/- 0.25 of the existing non-location-adjusted benchmark for only 9 per cent of the sector in respect of the state schools indicator. It is +/- 0.5 or more for 81 per cent of institutions.

13. It follows that the PITG have been able to conclude that in terms of numeric changes to benchmarks, none of the methods a. to e. have a material impact for individual institutions.

14. The group also considered changes in significance when different benchmarking methods were used. Tables 5b, 6b and 7b from PITG paper 11/06 are given below to demonstrate the lack of material impact of any of the methods a. to e. being incorporated within the benchmarking calculations. They consider the WP indicators in respect of the state schools, NS-SEC<sup>2</sup> groups 4-7, and low participation neighbourhoods (LPN) components respectively. For context and to demonstrate a benchmarking method that does give an impact for individual institutions, within these tables we compare significance markers arising from the existing non-location-adjusted benchmarking method to those arising from the existing location-adjusted benchmarking method.

15. Cells shaded in grey highlight the numbers of institutions for whom there is no change to their significance markers.

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<sup>1</sup> Note that, in an addition to methods a. to e. described above, the PITG have also considered the method that identified the most frequent A level subject combinations (based on the three best A level grades) held by entrants to different HE subject areas at all institutions. The results of this method are not reported within this paper, but have been found to be consistent with those provided here in relation to methods a. to e.

<sup>2</sup> National Statistics Socio-economic Classification

**Table 5b Change in significance for the state schools indicator when different benchmarks are used**

| Location-adjusted benchmark significance<br>(State school indicator) | New significance state  | Existing non-location adjusted benchmarks | Benchmarking method incorporating... |                |                          |                        |                                  |
|--|-------------------------|---|--------------------------------------|----------------|--------------------------|------------------------|----------------------------------|
|  |                         |   | Highly selective combination         | Sector A level | Highly selective A level | Sector A grade A level | Highly selective A grade A level |
| Below  | Remain below            | 24  | 22                                   | 22             | 21                       | 23                     | 23                               |
| Below  | Move to non-significant | 1   | 3                                    | 3              | 4                        | 2                      | 2                                |
| Below  | Move to above           | 0   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Non-significant  | Move to below           | 1   | 1                                    | 0              | 0                        | 1                      | 1                                |
| Non-significant  | Remain non-significant  | 80  | 100                                  | 101            | 100                      | 100                    | 100                              |
| Non-significant  | Move to above           | 20  | 0                                    | 0              | 1                        | 0                      | 0                                |
| Above  | Move to below           | 0   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Above  | Move to non-significant | 15  | 1                                    | 2              | 5                        | 0                      | 0                                |
| Above  | Remain above            | 14  | 28                                   | 27             | 24                       | 29                     | 29                               |

**Table 6b Change in significance for the NS-SEC groups 4-7 indicator when different benchmarks are used**

| Location-adjusted benchmark significance<br>(NS-SEC groups 4-7 indicator) | New significance state  | Existing non-location adjusted benchmarks | Benchmarking method incorporating... |                |                          |                        |                                  |
|---|-------------------------|---|--------------------------------------|----------------|--------------------------|------------------------|----------------------------------|
|   |                         |   | Highly selective combination         | Sector A level | Highly selective A level | Sector A grade A level | Highly selective A grade A level |
| Below   | Remain below            | 15  | 17                                   | 17             | 15                       | 18                     | 18                               |
| Below   | Move to non-significant | 4   | 2                                    | 2              | 4                        | 1                      | 1                                |
| Below   | Move to above           | 0   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Non-significant   | Move to below           | 9   | 1                                    | 0              | 0                        | 1                      | 2                                |
| Non-significant   | Remain non-significant  | 94  | 111                                  | 113            | 112                      | 112                    | 111                              |
| Non-significant   | Move to above           | 10  | 1                                    | 0              | 1                        | 0                      | 0                                |
| Above   | Move to below           | 0   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Above   | Move to non-significant | 3   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Above   | Remain above            | 20  | 23                                   | 23             | 23                       | 23                     | 23                               |

**Table 7b Change in significance for the LPN indicator when different benchmarks are used**

| Location-adjusted benchmark significance (LPN indicator) | New significance state  | Existing non-location adjusted benchmarks | Benchmarking method incorporating... |                |                          |                        |                                  |
|--|-------------------------|---|--------------------------------------|----------------|--------------------------|------------------------|----------------------------------|
|  |                         |   | Highly selective combination         | Sector A level | Highly selective A level | Sector A grade A level | Highly selective A grade A level |
| Below  | Remain below            | 2   | 3                                    | 2              | 3                        | 3                      | 3                                |
| Below  | Move to non-significant | 1   | 0                                    | 1              | 0                        | 0                      | 0                                |
| Below  | Move to above           | 0   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Non-significant  | Move to below           | 22  | 0                                    | 1              | 1                        | 0                      | 0                                |
| Non-significant  | Remain non-significant  | 83  | 120                                  | 119            | 119                      | 120                    | 120                              |
| Non-significant  | Move to above           | 15  | 0                                    | 0              | 0                        | 0                      | 0                                |
| Above  | Move to below           | 0   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Above  | Move to non-significant | 3   | 0                                    | 0              | 0                        | 0                      | 0                                |
| Above  | Remain above            | 11  | 14                                   | 14             | 14                       | 14                     | 14                               |

16. Tables 5b, 6b and 7b show that the significance markers remain unchanged for a majority of institutions both across all three components of the WP indicators and across all of the methods a. to e. being incorporated within the benchmarking calculations. At the very most ten institutions in the sector would change significance should any of the methods be adopted. Only one institution (at most) would see their significance move to be higher than that shown by the existing location-adjusted benchmarking method.

17. It follows that the PITG have been able to conclude that in terms of changes to significance, none of the methods a. to e. have a material impact for individual institutions or in relation to the interpretation of the indicators.

18. Indeed, the PITG have agreed that the only material effect of any of the methods considered would be to dilute the information provided by the benchmarks. Increasing the number of benchmarking groups by incorporating one of the methods above will lead to benchmarking groups that are smaller in size and this has the potential to dilute the information provided by the benchmarks.

19. For example, if the number of benchmarking groups was increased to the extreme, there would be the same number of benchmarking categorisations<sup>3</sup> as individual students, with each categorisation containing one student. A feature of the benchmarking approach is that where differences exist between the indicator and the benchmark, this may be due to the institution's performance, or due to some other factor which is not included in the benchmark. If each benchmarking categorisation contained only one student, the benchmark would then be the same as the indicator in all cases: all variation would have been explained and the notion that differences may be due to the institution's performance would be lost.

20. Incorporating A level subject information in the PI benchmarking calculations using one of methods would lead to increasing the number of benchmarking categorisations from 5,532 to 8,867<sup>4</sup>. The distribution of student numbers across these benchmarking categorisations has been considered on the basis of implementing method c.<sup>5</sup> above. This has shown that there would be an increase from 9.6 per cent of benchmarking categorisations containing fewer than five students to 14.4 per cent of benchmarking categorisations: an increase of around 50 per cent.

21. On the basis that the PITG have identified a low impact in terms of numeric changes or changes to significance in benchmarks for individual institutions, they note that the increase in small numbers in benchmarking categorisations demonstrates an increased potential for the information provided by the benchmarks to be reduced unnecessarily. A second effect is that the

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<sup>3</sup> An example of an existing benchmarking categorisation would be one that includes young students from London whose HE subject area was Mathematics and who held four A grades achieved at A level as their highest qualifications on entry.

<sup>4</sup> An example of a benchmarking categorisation following the incorporation of A level subject information would be the one given at footnote 2 further specified to recognise that the student held within their qualifications on entry the A level subject identified as being the most frequently held by entrants to different HE subject areas at highly selective institutions.

<sup>5</sup> Method c. has been identified as the one to generate the biggest differences when methods a. to e. have been compared to the location-adjusted benchmarking method, though these differences are small.

proportion of an institution's benchmark that will be determined by itself is likely to increase. The group therefore conclude that incorporating one of methods a. to e. within the benchmarking calculations could only have a detrimental effect on the PI benchmarks.

22. The group noted that although equivalent analysis had not been undertaken that related precisely to Scottish Highers, these qualifications involved students studying a larger number of subject areas and were less constrained than A levels. As such PITG are confident that inclusion of subject area information would be even more complex and effects on benchmarks would be equally minimal.

#### Advantages and disadvantages of incorporating A level subject information within the PI benchmarks

23. The advantages of including A level subject information within the PI benchmarks include:

- i. Improved perception of the PIs.

That is, perception of the PIs may be improved on account of implementing a reaction to concerns of the sector and others that A level subject information was not included. The benchmarks may be seen to be more relevant.

24. The disadvantages of including A level subject information within the PI benchmarks include:

- ii. Benchmarks need to remain relevant yet true to their defining principles.

That is, factors accounted for in the benchmarks should possess all three of the key qualities: be associated with what is being measured; vary significantly from one institution to another; and not be in the institutions' control and so not be part of their performance. PITG analysis has shown that inclusion of A level subject information has no material impact on the benchmarks calculated for individual institutions, and as such does not show evidence of being associated with what is being measured by the indicators. Further, A level subject area could be argued to be a factor that was within the control of institutions and their admissions processes.

In terms of the relevance of the PI benchmarks, it has been felt likely that relationships between A level subject and A level grade, and between A level subject and HE subject, mean that the affect of A level subject is likely to be sufficiently accounted for by the factors currently accounted for in the benchmarks.

- iii. Detriment to the PI benchmarks.

PITG analysis has shown that inclusion of A level subject information has no material impact on the benchmarks calculated for individual institutions, and as such the increase that would result in the number of benchmarking groups would be unnecessary. Larger numbers of benchmarking groups leads to groups being smaller in size and increased potential for volatility within the PI benchmarks as a result.

Further, incorporation of A level subject information would lead to additional complexity in the benchmarking calculations and, when no material impact has been identified, potential for unnecessary detriment to users' understanding and interpretation of the PI benchmarks.

25. On balance, and considering the merits of the evidence they have prepared, the PITG have recommended that A level subject area should not be included as a factor within the PI benchmark calculations. The analysis in this paper demonstrates that the PISG have responded to the concerns of the sector and other users of the PIs by comprehensively exploring the issues relating to the inclusion of A level subject information in the PI benchmarks. The recommendation is based on ensuring that the PI benchmarks remain true to their defining principles, while also remaining relevant, stable and accessible.

**Recommendation: That A level subject area should not be included as a factor within the PI benchmark calculations.**

26. Given the public nature of the concerns raised about the omission of A level subject from the PI benchmarks the PISG may wish to consider how the current decision is communicated. In particular it is likely that commentators will continue to refer to assertions in the Browne review and elsewhere that the current benchmarks are deficient. Continued unchallenged, reference to these assertions could pose a reputational risk and undermine the credibility of the PIs.

**Recommendation: That the PISG consider how any decision might be presented publically.**

## **Further information**

27. For further information contact Mark Gittoes (Phone 0117 931 7052; email [m.gittoes@hefce.ac.uk](mailto:m.gittoes@hefce.ac.uk)) or Alison Brunt (Phone 0117 931 7166; email [a.brunt@hefce.ac.uk](mailto:a.brunt@hefce.ac.uk))