

National Student Survey Summary Report: Institutional variation and change over time

Background

1. This summary report draws on analysis from section 5 of 'The National Student Survey 2005-2007: Findings and Trends'¹. The full report analysing the National Student Survey (NSS) uses statistical modelling techniques known as multi-level models. This summary report describes some of the results from these models at the institutional level. The technique used offers additional benefits in understanding change in terms of information about the institutional level. This additional information takes two forms: first, for each institution a measure of the performance of the institution² relative to the other institutions in the survey; second, how much of the variation in NSS scores is between individuals and how much occurs between institutions. This summary report is primarily concerned with the patterns of institutional change over time across the sector as a whole, that is the extent of stability or change at the institutional level.

Institutional stability

2. Institutional performance is measured relative to the scores we would expect an institution to receive based on its student, course and institutional characteristics. For any model the majority of the institutions are performing according to expectations based on their student profile. Summarised below are the institutional performances based on full-time students³.

Table 1: Summary of institutional performance

	3/3 negative	3/3 positive	3/3 as expected
Teaching and Learning	8	9	65
Assessment and Feedback	7	9	55
Academic Support	11	9	64
Organisation and Management	11	9	51
Learning Resources	19	15	49
Personal Development	7	10	85
Overall Satisfaction	10	11	66

¹ The full report is available on the HEFCE web-site, www.hefce.ac.uk, under Publications/Research & evaluation.

² Throughout this summary 'institutional performance' is used to refer to the institutional residuals from multi-level models. Where performance is referred to as 'as expected' this means the institutional residual was not statistically significant.

³ Full details of these models are available in the full report and Annexes.

3. As Table 1 clearly shows, the largest group are those institutions which performed as expected in all three years. This figure is smallest for the Learning Resources scale where there is greater differentiation among institutions, and largest on the Personal Development scale which has the least differences among institutions. It should be stressed that the institutions with three negative (or three positive) results vary across the different scales. Thus, while there are nine institutions who performed better than expected on the Teaching and Learning, Assessment and Feedback, Academic Support and Organisation and Management scales in each of the three years these were *not* the same institutions in each case.

4. Table 1 also suggests that there is a good deal of stability in the performance of institutions over time with over half of institutions having the same outcome in all three years on each scale. These measures may provide a useful supplement to on-the-ground knowledge for those institutions performing less well than expected in two or more years. However, when looking for examples of best practice or areas which may require attention it must be kept in mind that there is variation across the scales and an institution which is performing better than expected in one area measured by the NSS may not be performing well in another.

Institutional variation

5. In the remainder of this section the focus shifts from the performance over time of individual institutions to the distribution of institutional differences. We begin by considering how much of the variation in scores lies at the institutional level rather than between individual students. Table 2 below looks at how much of the variation, which is not explained by variables in the model, is attributable to institutional differences.

Table 2 Proportion of variation at the institutional level, full-time students

	Teaching and Learning	Assessment and Feedback	Academic Support	Organisation and Management	Learning Resources	Personal Development	Overall Satisfaction
2005	2.24	2.98	2.64	3.97	8.31	1.26	2.23
2006	2.38	3.33	3.28	4.02	6.54	1.08	2.51
2007	2.53	3.13	3.19	3.72	4.98	1.37	2.57

6. Table 2 shows the percentage of the variation that is attributable to differences between institutions. The figures are the proportion of variation attributable to the institutional level after the student, course and institutional characteristics have been taken into account; in other words the amount of variation among institutions after taking into account differences in student profiles.

7. In 2005 the Learning Resources scale clearly had the greatest variation among institutions. However, this has reduced substantially over the period of the surveys. Personal Development has the lowest proportion of variation at the institutional level; perhaps reflecting that this is a more individualised component of the student experience. Both the Teaching and Learning scale and Overall Satisfaction show

small increases in the variation at institutional level over time, however these are relatively small increases on scales where the proportion of variation at the institutional level was already quite small. Across all the scales, the levels of variation at the institutional level are relatively small, but show stability over time. This suggests that once student profiles (in particular subject profiles) are taken into account the student experience is reasonably similar, though not uniform, across institutions.

8. Tables 1 and 2 show how individual institutions performed over the three years of the survey and how much of the variation in scores on each scale lies at the institutional level. However, another way of utilising the institutional performance is to look at their spread in each of the years. This allows an assessment of whether, across the sector as a whole, institutions are becoming more similar over time or if those that are performing better or worse than expected are moving further away from the remaining institutions.

9. Table 3 summarises measures designed to look at the distribution of institutional performances overtime. First, we assess the range of the distribution. The range simply tells us whether the top and bottom institutions are further apart in one year than the next (after controlling for student profile). We also look at scores for the top five and bottom five institutions. This allows us to assess whether the ends of the distribution are moving further away from the centre: if these mean scores increase (in absolute terms) then these groups of institutions have moved farther from the centre, though it is possible that this may also represent a clustering of the bottom institutions where previously one or more institutions were laying further from the bottom than the rest of the bottom five institutions. These measures are especially useful where there are changes in the performance range as they enable us to assess if this is at the top or bottom of the distribution or if it is driven by a single outlier.

10. In each case institutional performance is a measure of how far an institution lies from the grand mean for all institutions; therefore it is possible that there may be no changes at all in the distribution of performances, despite an improvement in the mean scores for the sector. In such a case this would be interpreted as an improvement which occurred equally across the sector.

Table 3: Analysis of institutional performance, full-time students only

	Teaching and Learning	Assessment and Feedback	Academic Support	Organisation and Management	Learning Resources	Personal Development	Overall Satisfaction
Performance range							
Range							
2005	0.60	0.94	0.88	1.16	1.67	0.45	0.74
2006	0.51	0.98	0.92	1.04	1.27	0.43	0.89
2007	0.49	0.96	0.89	1.06	0.95	0.48	0.76
Performances							
Mean top 5							
2005	0.26	0.35	0.37	0.36	0.50	0.19	0.36
2006	0.29	0.37	0.39	0.36	0.43	0.21	0.36
2007	0.26	0.37	0.34	0.35	0.43	0.21	0.34
Mean bottom 5							
2005	-0.16	-0.31	-0.29	-0.42	-0.70	-0.17	-0.27
2006	-0.17	-0.37	-0.38	-0.44	-0.50	-0.17	-0.28
2007	-0.19	-0.32	-0.37	-0.48	-0.38	-0.19	-0.32

11. Table 2 suggested that there had been greatest change in the variation at institutional level in the Learning Resources scale; by considering the data in Table 3 it is clear that this reduction in variation has resulted in a substantial reduction in the performance range on this scale, moreover by looking at the patterns of the performance mean we can see that this has occurred primarily at the bottom of the performance range. In simple terms, the institutions at the bottom of the distribution for this scale have moved closer to the rest of the institutions over time.

12. Again, taking tables 2 and 3 together allows a fuller understanding of changes on other scales. Both the Teaching and Learning scale and Overall Satisfaction showed a small increase in the proportion of variation at the institutional level. Table 3 shows that there was no increase in the performance range overtime on these scales. There was, however, an increase in the average (negative) performance for the bottom five institutions in each case. This suggests that while the top and bottom of the distribution are not getting further apart over time there may be an increase in the negative performances for the very bottom of the distribution, this is most likely to represent a tendency for greater clustering among the bottom five institutions, rather than one or two outlying institutions being further from the rest.

13. While the Organisation and Management scale did not show a reduction in variation at the institutional level over time (see Table 2), Table 3 suggests that there was some narrowing of the performance range over time.

14. Taken as a whole the figures in Tables 2 and 3 do not suggest that on most scales there has been a shift to institutions becoming more similar in their NSS scores over time, once student, course and institutional characteristics have been taken into account. However, the one scale where there is a clear move in this direction is the Learning Resources scale. This may be an encouraging sign of responsiveness to NSS results as

it is an area where we might expect institutions to be able to effect changes more rapidly than for example changes in Assessment and Feedback procedures. It is also worth noting that in each case in 2007 the proportion of variance that is at the level of the institution is small; this reinforces the picture in Table 1. For a large proportion of the higher education institutions in the NSS there are no significant differences between them, in terms of NSS scores, once student, course and institutional characteristics have been taken into account.

Summary

15. Whilst there have been year on year improvements in the overall performance of the sector in terms of NSS scores, the figures in Table 2 and 3 suggest that this has broadly affected the majority of institutions in the same way and there is little evidence that the differences between institutions have become smaller (or larger) over time.

16. Table 2 shows that, although there is significant variation at the institutional level, this is relatively small suggesting that across the vast majority of institutions students express their experiences in the same way.

17. A notable exception to the broad pattern is the Learning Resources scale, which has seen a substantial reduction in the differences between institutions over time. This may suggest a positive impact of the NSS in this area, as this may be an area where institutions were able to effect change more rapidly than in other areas.