

RESEARCH AND ANALYSIS

Equalities analysis

Evidence on the link between change in the demographic make-up of centres and results

ofqual

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Introduction

Ofqual has an ongoing programme of work to evaluate the equalities impact of the standardisation approach used to award grades in summer 2020. As part of this programme of work, Ofqual explored the impact of a change in the demographic make-up of a centre from one year to the next on the grade awarded to the centre. More specifically, we wanted to understand what sort of change in the demographic make-up would lead to a substantial impact on results.

To address the above question, we carried out a statistical analysis of the relationship between:

- the variability in centre-level outcomes between 2018 and 2019
- the change in demographic make-up of a centre between 2018 and 2019

We have looked at the demographic make-up of centres with respect to a wide range of demographic and socio-economic characteristics of the pupils in each centre, as follows:

- gender
- SEN (Special Education Needs) status
- EAL (English as Additional Language) status
- ethnicity
- socio-economic background measured by FSM (Free School Meals) eligibility
- IDACI score (Income Deprivation Affecting Children Index)

For each centre, the prior attainment of the students taking each subject and the number of students entered where also available.

From this, we were able to look at the correlation between a change in the demographic make-up of a centre and the variability in centre-level outcomes. However, given that educational achievements are known to depend on a number of factors, the simple correlation between changes in demographic make-up and variability in outcomes could be misleading. Therefore, we also carried out a regression analysis. This gives us a measure of association between each demographic/socio-economic characteristic and the variability in centre-level outcomes, once other factors, including prior attainment¹, are controlled for.

We looked at a sample of GCSE and A level subjects to ensure breadth of coverage in terms of entry size and nature of the material taught. In total we considered more than 100 combinations of subjects and demographic factors.

Our analysis shows that changes in the demographic make-up of a centre is associated with only very small differences in centres' results. Among the demographic and socio-economic characteristics considered, gender and socio-economic background were those found having the relatively stronger impact, though still small in size. Examples of the largest impacts found in our analysis are shown below.

¹ Prior attainment, although not a demographic variable, was included as it is known to be the strongest predictor of achievement.

GCSE English language

The analysis showed that if a centre increased the share of female pupils from 50% to 60%, the centre is expected to see an increase of 0.2 percentage points in the proportion of students achieving grade 7 or above and 0.6 percentage points at grade 4 or above. These impacts are very small. To put this in context, in order to have at least one more student achieving grade 4 or above, the number of students entered for GCSE English language would need to be at least 150, when, in fact, the national average entry size is around 75. To see an impact at grade 7 the number of students entered in a centre would have to be even larger.

Impacts would be slightly larger if the shift in the share of female pupils was greater. For example, if the proportion of females in a centre changed from 50% to 70%, the size of the impact would be double that above. However, such a change is unusual. Our analysis shows that only a handful of centres experienced such changes in the share of female pupils from 2018 to 2019. As in the previous case, centres would need to be quite large to have even just one student's grade affected.

GCSE maths

Among all the subjects considered, the strongest impact of a change in demographic make-up was found for GCSE maths. In this case it was the proportion of highly socio-economically deprived students, as measured by the IDACI score, which had the strongest impact on results. A 10 percentage point increase in the share of highly deprived pupils was associated with a 0.3 percentage point decrease in the proportion of students achieving grade 7 or above, and a 0.7 percentage point decrease in the proportion of students achieving grade 4 or above. A larger change in the share of highly deprived pupils clearly would lead to a larger impact on results, but the data shows that larger changes in the share of highly deprived pupils is very rare.

Conclusion

Overall, it is possible to conclude that even a very large change in the demographic make-up of a centre has very little impact on a centre's results, so little that it would be rare for even just one student's grade to be affected. Furthermore, our analysis shows that centres very rarely experience a dramatic change in their demographic make-up.

While these results might seem surprising, it is worth noting that variability in centre-level outcomes are mostly explained by changes in the prior attainment profile of the students, which is also related to demographic characteristics. This means that if a centre sees an increase in, say, the share of female pupils, this will tend to lead to an increase in the prior attainment profile of that centre. Given that both the normal awarding process and the standardisation approach account for prior attainment, the remaining impact of changes in the demographic make-up is very little.



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