

Predictors of postgraduate student experience and engagement: a multilevel analysis of postgraduate survey data. (0266)

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1. Background

Higher education systems globally are increasingly moving from a reliance on measures of process quality towards outcome measures from student satisfaction surveys. In the UK, a range of student surveys are used, the most well-known being the National Student Survey (NSS) of undergraduate students, administered by Ipsos MORI on behalf of the UK funding councils and designed for accountability and public information. However, alongside this compulsory, widely reported survey the Higher Education Academy also conducts a number of other student surveys with national reach, aimed at supporting quality enhancement:

- The United Kingdom Engagement Survey (UKES);
- The Postgraduate Taught Experience Survey (PTES); and
- Postgraduate Research Experience Survey (PRES).

These surveys run from February-March until May-June. Alongside data on students' experiences and engagement, the surveys also collect data on a range of student (e.g. gender, subject of study, domicile) and institutional characteristics (e.g. institution size, type). All three surveys collect sufficient data to present a rich picture of students' experiences and engagement. In their last administrations PRES had around 50,000 responses from 122 institutions, PTES had 67,000 responses from 100 institutions, and UKES had 25,000 responses from 32 institutions.

Currently the HEA publishes annual reports for each of the surveys, which contain relatively simple statistical analyses. In addition, institutions receive their own confidential benchmarking reports. While useful to the sector and individual institutions for quality control purposes, these basic analyses are limited in terms of the information they can convey about the key predictors of student experience and engagement, such as whether university attended, rather than discipline or individual student characteristics predict outcomes, and what combination of student and organisational characteristics are related to such outcomes. Such information is important both theoretically and practically, as it answers key questions on the existence (or not) of 'university effects' akin to school effects found in the longstanding 'educational effectiveness' research tradition (Reynolds et al, 2014) and their possible strength, and can start to provide us with data on what factors relate to student satisfaction and engagement which can inform university policies and practise.

In this study, funded by the HEA, we therefore undertook a more sophisticated statistical analysis of the two latest UKES, PTES and PRES surveys (2014 and 2015 for PTES and UKES, 2013 and 2015 for PRES) in order to look at the following research questions:

1. What proportion of the variance in experience and engagement is explained by student and institutional characteristics?
2. Can the survey reliably distinguish between institutions, and between courses?

3. What student and organisational characteristics are related to student experience and engagement?

2. Methods

The methodology for this secondary data analysis study contains two main phases. In the data preparation phase latent trait analyses will be used to test the factor structure of the range of student responses relating to experience and engagement. To do this, we will initially test the validity of existing hypothesised factor structures as currently employed in the HEA reports. Where these do not fit, alternative structures will be tested, where necessary employing exploratory factor analyses to develop new scales.

The data analysis phase will then proceed to answer the research questions above, using multilevel modelling to account for the hierarchical nature of the datasets, in which students are nested within subjects, and programmes within universities.

Multilevel modelling is an adaptation of the general linear model for hierarchical datasets, which partitions the variance in the dependent variable across the relevant levels (here students, subjects and universities). This solves the problem of attenuation of standard errors in standard linear regression models, which results from hierarchical samples such as this where individuals within a subject or university may be more similar to one another than they would be to the population of students as a whole. Multilevel modelling also allows us to more accurately model the data by taking its structure into account, and provides answers to important substantive questions such as the research questions above.

Models will be run separately for each year of the analysis (2013, 2014 and 2015), as the use of time series approaches is inappropriate due to the fact that the outcome data is not obtained from the same students each year.

The models will be run in three phases. In phase 1 we will run an empty model, with only a constant as predictor as a baseline model which will furnish us with answers relating to research questions 1 and 2, by providing us with a partition of the variance in the outcomes to be explained to each of the three levels. In the second phase, the student characteristics (e.g. gender) will be added to the model to test their relationship to outcomes, while in the third phase organisational characteristics will be added to the models.

3. Results

HEA will provide us with the datasets for 2013 (PRES) 2014 (PTES and UKES) by end of June 2015, and with the 2015 datasets for PRES, PTES and UKES by mid-July 2015. Data analysis will be completed by end of August 2015. Reporting will follow best practises outlined by Dedrick et al (2009).

4. Implications

While previous examples of such work with large-scale student surveys exist (e.g. Marsh and Cheng 2008, Cheng and Marsh 2010), they only relate to NSS data. This will therefore be the first time that

multilevel modelling has been undertaken on these student surveys. The intention is to understand the impact of student and institutional variables on the experiences and engagement of PGR, PGT and UG students; to inform the sector about key issues; and to support institutions in making sense of their own data.

References

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