Evaluation of Supported Progression (SP) schemes offered by Durham University

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**Introduction**

Durham University's Supported Progression (SP) programme aims to help increase the socioeconomic diversity of Durham's undergraduate population. SP is a combination of interventions for widening access initiatives providing young people from disadvantaged backgrounds with an alternative means of demonstrating their ability to succeed at the university, and offering financial support to those subsequently admitted to the university under the SP scheme.

The SP programme has been running for a number of years now, and in its OFFA Access Agreement the University has recently committed to significantly expanding the number of participants on the programme. There has been some internal assessment of the extent to which the programme succeeds in achieving its aims, and the University has reason to believe that the programme is being effective. But the programme has yet to be fully evaluated. OFFA is increasingly calling for widening participation interventions to be evaluated more robustly in order to test and improve their effectiveness. OFFA has recently published a guidance document on evaluation of widening participation and outreach activities which sets out three levels of evaluation practice (Crawford et al. 2017). At the second level OFFA recommends HE institutions use existing student records to investigate the university outcomes of students involved in outreach activities or widening access initiatives. A level two evaluation is generally less robust than a large scale randomised control trial. However, it is cost-effective in using secondary official datasets, and provides baseline information as a pilot evaluation of widening access initiatives. This is what this paper reports for Durham University.

**Background**

In England annual spending on increasing HE participation from disadvantaged groups is £842 million (HEFCE 2017). There *is* a long-term historical trend towards widened participation for under-represented groups in HE, linked primarily to increased student numbers (Gorard et al. 2007). But there is as yet no robust evidence showing that specific activities to promote WP have been successful (Younger et al 2018).

Existing examples of evaluation include Excellence in Cities and Aim Higher - nationally funded programmes launched in 2001 following recommendations which highlighted that low-aspirations of disadvantaged students at Key Stage 4 are related to their under representation in HE. A survey was conducted with a sample of post-16 students who had attended these programmes in their schools (Morris and Rutt 2005). The programmes were open for all students to attend and participation was voluntary. There was no clear target group of students or suitable comparator for assessment of the outcomes. Less than a third of those who participated in the programme also participated in the survey (29%). No information was given on the outcomes of those who refused to attend the programme, those who agreed but later dropped out of the programme and those who participated in the programme but did not take part in the surveys. Information on all of these groups could provide a fuller picture on the impact of this programme (no impact, negative impact or positive impact). Evaluations are a way forward for the widening access policy and interventions but any evaluation need to be of high quality based on robust research designs.

Universities and other HE institutions give bursaries as support income to students who come from disadvantaged backgrounds, of the kind under-represented in HE. Universities and HE institutions charging maximum tuition fees are required to have non-repayable bursary support schemes for disadvantaged groups. The aim is to aid the disadvantaged group during their studies financially and reduce dropout before completion of the degree qualification. All institutions have their own criteria to select disadvantaged students for bursaries or supported progression schemes. The criteria commonly used are type of school attended, first generation in family to enter HE, residential address in POLAR quintiles 3 category or below (postcode deprivation), and identified by school staff members as disadvantaged and with the potential for HE qualification. There is weak but promising evidence that SP schemes involving financial incentives are effective in achieving widening access aims (Younger et al. 2018). The evaluations conducted so far have selected target groups using various contextual indicators, which do not have high reliability of identifying disadvantage (West et al. 2009). Moreover, existing evaluation evidence on bursaries has not used comparison groups to report if bursary students have met the aims against those who did not receive the bursaries (as in West et al. 2009, Hatt et al. 2005). There is a lot of data available on students' experiences in applying for and receiving bursaries and how they perceived it to be beneficial during their university life (Pennell et al. 2005). However, these interview-based studies cannot be seen as robust evaluations of bursary initiatives.

**The new study**

Prior attainment at Key Stage 5 is the main selection criterion for admission at Durham University, and there is strong and consistent evidence that such prior attainment is linked to students' attainment at Key Stage 4 (GCSE performance) and to family socioeconomic status. Insistence on ever higher grades reduces the admission chances of students from disadvantaged backgrounds as they are somewhat less likely to meet these grades, and this is an increasing problem for the top 30 universities, mostly Russell group institutions. Widening participation is a challenge for these institutions as they are given targets and special grants to ensure fair access through institutional policy, interventions and outreach programmes. Under the university agreement with the Office for Access in Admissions these institutions like Durham must declare their strategy for fair access, and set widening participation targets and activities.

Durham University generally receives around 30,000 applications for admission each year. Only 15% of these applicants obtain a final offer. According to a Sutton Trust report, Durham University is in the list of top 30 universities in the UK which have high selection criteria for admission, and has fewer than 10% of places attainable for pupils with 200 UCAS tariff points (equivalent to two D grades and a C grade at A-level) or less. This level of academic selection is linked to considerable stratification of the student intake, in terms of class, ethnicity and type of school attended. Durham University is in the north east of England which has the lowest HE participation of 29% young people gaining admissions to the university as compared to the national average which is 34%. All of these issues and more provide a challenge for widening participation.

This new evaluation report is based on data analysis of existing student records in compliance with the level 2 standard for evaluation practice. The analysis has used records of student applications, admission and degree completion for the 2011 and 2013 undergraduate cohorts. It addresses the following research questions:

1. What are the characteristics of applicants for SP and how do they differ from those selected for SP?
2. Do the admission and degree completion outcomes differ for these two groups?
3. Are SP measures of selection successfully targeting disadvantaged groups?
4. Which of the contextual indicators used by the SP scheme were effective in predicting degree completion and degree outcomes?
5. What is the academic performance of students selected for SP?

6. Which indicators predict university dropout for SP scheme and in general?

**Datasets**

The datasets used for level 2 standard of evaluation are mainly the administrative records of the student applicants. For university admissions these records are extracted from the UK admissions service UCAS. UCAS data is based on records that are largely self-reported by student applicants when they apply for university admissions. The application process asks or has asked students to provide various sets of information including parental education and occupation, family socioeconomic classification, and student disability, ethnicity and region of residence. It is not compulsory for applicants to provide this information, and therefore missing data is the biggest threat to the quality of the UCAS datasets. Perhaps the second biggest is that this most of this data is completely un-validated.

Universities can also collect information from individual applicants independent of UCAS. This data collection process is common for outreach programmes and supported progression schemes where applicants apply directly to university calls for admissions via outreach networks. Widening participation activities follow a targeted approach. Individual household income or teacher reported student Free School Meal status are extra contextual indicators which are not or no longer available through UCAS or HESA.

The dataset used for this evaluation is combined information extracted from UCAS and application records for the supported progression scheme. All students who applied for bursaries or other financial aid including supported progression also declared their family annual income which means there are two comparable groups of students in the data set – those who applied for, and those selected for SP. A third group is all other students, for whom no household income information is available.

We received the datasets for two cohorts for which three years of undergraduate degree completion records were available. These two cohorts included students on the supported progression schemes which provided a progression route for a targeted group of the most able, but least likely to apply, students from the regions of Northeast, Cumbria and West Yorkshire. The dataset provided does not include actual geographical region as an indicator of disadvantage. However, there are other useful measures to assess the outcomes of supported progression schemes which existing studies have identified as important indicators of socio-economic disadvantage and have been used in widening participation initiatives. Household income has been found highly relevant in indicating family socioeconomic status (Talyor 2018, Iniesta-Martinez et al. 2012, Hobbs and Vignoles 2010). Disability, ethnicity (Gorard et al 2017), HE regional participation and neighbourhood deprivation (McCraig 2015, Boliver et al. 2015) have been discussed as important indicators of disadvantage.

The data included information on two full-cohorts of students who applied for admission in in the years 2011 and 2013. The data for both cohorts was combined. The combined data includes 43,368 students of which 18% met and accepted the Durham University offer and continued to their undergraduate degree (Table 1). The ones who finally accepted the offer (7,669) provide the main sample for this study because they have complete information available such as their subject category, first year performance, degree completion status and degree classification.

Table 1 – Number of students in two cohorts entering Durham University 2011 and 2013

| Year of entry | Applied | Entered | SP students |
|---|---|---|---|
| 2011 | 25,326 | 3,743 | 31 |
| 2013 | 25,711 | 3,926 | 61 |
| Total | 43,368 | 7,669 | 92 |

A lot cases are missing data for one or more variables. There is no clear flag variable for those who applied or were considered for SP. The situation is therefore far from ideal for a robust analysis.

**Descriptive findings**

Around 34% of all successful applicants to Durham University also applied for some kind of financial assistance or bursary including SP – a sub-group of 2,595, of whom 92 were accepted for SP (Table 2). This figure of 92 is really too small to conduct complex or sub-group analyses, or to reach robust conclusions regarding the impact of the supported progression scheme. This must be borne in mind in all that follows. As might be expected, applicants for assistance and acceptances for SP were higher among state-school students, and about equal by sex and identified disability. The proportion applying from ethnic minorities was small, and there is no clear reason for this.

Table 2 – Percentages of students with specified characteristics applying for SP

| Characteristics | Applied for assistance % | SP as a subset of these % | Total number of students |
|---|---|---|---|
| *School type* | | | |
| State | 52 | 4 | 3,874 |
| Independent | 18 | 0.2 | 2,699 |
| School N/A | 9 | 9 | 1,096 |
| *Sex* | | | |
| Male | 33 | 3 | 3,568 |
| Female | 34 | 4 | 4,101 |
| *Disability* | | | |
| Identified disabled | 34 | 4 | 822 |
| *Ethnicity* | | | |
| White | 38 | 3 | 6,125 |
| Not white | 19 | 1 | 1,544 |
| Total | 2,595 | 92 | 7,669 |

SP applicants are asked to declare their parental income. In the latest university OFFA agreement the threshold parental income to apply for such a bursary is below £25,000 (https://www.offa.org.uk/agreements/University%20of%20Durham%201718.pdf). However, this threshold income would be slightly lower for the 2011 and 2013 cohorts. Even so, for those who declared household income, the average of applicants for assistance was well above £25,000 (Table 3). And this applies even to those selected for SP. This casts some doubt on whether the right students are being targeted.

Table 3 – Mean income and tariff scores for SP applicants

| | Household annual income | Tariff score |
|---|---|---|
| Selected for SP | £29,948.40 | 446.04 |
| Applied for assistance | £45,611.33 | 486.85 |

23 SP students are missing household income

Students applying for financial assistance have higher average prior attainment than those not applying (Table 4). They are more likely to be first generation HE, and to live in areas of greater deprivation and lower participation. Those selected for SP have even higher levels of disadvantage in terms of these indicators – which is to be expected. They also have lower average prior attainment. This is presumably because, even among this selected and self-selected group, attainment is still linked to disadvantage. However, those selected for SP but who did not declare their income have lower levels of disadvantage that those who did, and even lower prior attainment than non-applicants. Again this is an indication that not all selected for SP might be the best choices. Previous work shows that non-response to household income questions is usually linked to other indicators of disadvantage (Siddiqui et al. 2018). Non-response is generally biased and not random.

Table 4 - Characteristics of SP applicants and others

| | Not applied assistance | Applied not SP | SP income declared | SP income not declared |
|---|---|---|---|---|
| Prior attainment (tariff points) | 474 | 511 | 450 | 435 |
| Parent no post-16 education (%) | 29 | 46 | 71 | 48 |
| ACORN>= 4 (%) | 7 | 25 | 41 | 22 |
| POLAR <=3 (%) | 14 | 38 | 75 | 61 |
| Year 1 progress | 61 | 62 | 58 | 58 |
| Completion of degree (%) | 90 | 92 | 91 | 87 |
| First class degree outcome (%) | 25 | 30 | 13 | 17 |
| Total | 5,074 | 2,503 | 69 | 23 |

Those who applied for assistance make about the same progress in their first year as those who did not, and are at least as likely to complete their degree, and more likely to obtain a first class degree. They are presumably motivated and talented students. However, those who are selected for SP make slightly less progress in the first year, and are substantially less likely to gain a first class degree. Again this is likely to be due to the link between posterior and prior attainment, and prior attainment and disadvantage. However, it also suggests that there is still room for improvement, both in selecting suitable students for SP and in supporting them in other ways once selected.

**Logistic regression analyses**

OFFA guidelines suggest developing regression models with outcomes of interest such as university retention and degree outcomes. For level 2 evaluation this is the most appropriate analysis, which indicates effect sizes in the form of association between the outcomes and explanatory variables. Here, we use logistic regression, because many of the explanatory variables are categorical in nature. Constructing any model of prediction depends on the nature of data and number of cases. We have very small number of cases and the percentage of those who applied for assistance or received SP and those who not receive is not balanced. In this analysis, degree completion is the primary outcome and the distribution of cases is not balanced between 'Pass' (91%) and 'Fail' or 'Withdrawn' (9%).

We present two binary logistic regression models separately predicting degree completion and first class degree achievement. We have included all cases in both the models (7,669) and added all known variables explaining the degree completion of SP students once all the other known characteristics are controlled for in the model.

In the first regression model degree completion as the dependent variable (main outcome). We added information about students' personal characteristics, family background, school level information and neighbourhood indicators. After controlling for these variables, we added students' SP status in the end. The base model was 91:9 since 90.8% of all students completed their degree. Adding these predictors did not increase the accuracy of the model much (because it was already so skewed in outcome). The background variables only increased the model accuracy to 91.4%, and SP status adding nothing further. Nevertheless, the coefficients in Table 5 can be seen as a tentative 'effect' size for each known characteristic. The results suggest that once all known variables are controlled for, the recipients of SP are slightly more likely to complete the degree as compared with those who have not received SP (odds of 1.15).

Table 5 - Regression coefficients-Degree completion

| Student characteristics | Coefficient values |
|---|---|
| Female | 1.33 |
| Not White | 0.79 |
| Not disabled | 2.20 |
| Parental Education (reference missing) | |
| Parents received education | 1.26 |
| Parent not received education | 1.14 |
| Household income | 1.00 |
| School type (reference state school) | |
| Independent school | 1.31 |
| School not applicable | 0.71 |
| Prior attainment | 1.00 |
| Acorn (reference Acorn 1 or 2) | |
| Acorn 3 or 4 | 0.04 |
| Acorn 5 or 6 | 0.03 |
| Acorn Missing | 0.02 |
| POLAR (reference Quintile 1) | |
| Quintile 2 | 17.92 |
| Quintile 3 | 26.40 |
| Quintile 4 | 29.14 |
| Quintile 5 | 25.61 |
| Missing | 25.13 |
| Recipient of Supported Progression | 1.15 |

In the second analysis, we constructed the model predicting first-class degree achievement as the main outcome. The base model was 73:26 since 26% of students achieved First class degree. Adding these predictors did not increase the accuracy of the model much (because it was already so skewed in outcome). The background variables only increased the model accuracy to 74%, and SP status adding nothing further. Nevertheless, the coefficients in Table 5 can be seen as a tentative 'effect' size for each known characteristic. The results suggest that once all known variables are controlled for, the recipients of SP are less likely to achieve a first-class degree as compared with those who have not received SP. This shows SP (bursary incentives) are good for degree completion but the recipients would still not be able to achieve a higher degree in classification.

Table 6 - Regression coefficients, First class degree

| Student characteristics | Coefficient values |
|---|---|
| Female | 1.13 |
| Not White | 1.45 |
| Not disabled | 0.68 |
| Parental Education (reference missing) | |
| Parents received education | 1.10 |
| Parent not received education | 0.92 |
| Household income | 1 |
| School type (reference state school) | |
| Independent school | 0.65 |
| School not applicable | 0.54 |
| Prior attainment | 1 |

| Acorn (reference Acorn 1 or 2) | |
|---|---|
| Acorn 3 or 4 | 0.43 |
| Acorn 5 or 6 | 0.38 |
| Acorn Missing | 0.36 |
| POLAR (reference Quintile 1) | |
| Quintile 2 | 3.37 |
| Quintile 3 | 2.88 |
| Quintile 4 | 3.34 |
| Quintile 5 | 3.25 |
| Missing | 3.28 |
| Recipient of Supported Progression | 0.44 |

We have conducted analysis of the linked HE and National Pupil Database and have found school-type the weakest indicator in identifying the disadvantaged students (Gorard et al. 2017). Area deprivation measure (Acorn) explains some variation in the model. However, 20% of the cases are missing this information. Students in the deprived region categories (Acorn 5 or 6) are less likely to achieve first and those missing Acorn are even less to achieve a pass. Geographical HE participation measure (POLAR) is also missing for 21% of the total number of cases. Other than a high level of missing data, these indicators do not identify deprivation at individual family level and there is existing evidence that challenges the validity of these indicators in identifying disadvantaged for the widening access initiatives (Harrison and McCraig 2015, Gorard et al. 2017).

**Conclusion**

Robust evaluation of a scheme like supported progression requires an active research design based on randomisation or regression discontinuity. Analysing existing data can be useful in studying patterns in HE populations. Unfortunately, the number of cases in one institution is generally so small (or the cell sizes for schemes and outcomes are so small) that such analyses may mislead. A national evaluation for all institutions and schemes would be far preferable. Here the analyses are, as usual, worsened by missing and unclear data. Records of who was considered for SP could be better maintained, and in future links to the National Pupil Database would permit use of indicators such as eligibility for free school meals and ethnic origin with far less missing data that parental education or self-reported income.

The results indicate some promise for SP schemes (bursary/ financial incentives) in terms of disadvantaged SP recipients' degree completion outcomes, but not for being awarded a first class degree. Prior attainment is a key predictor of both, and so is household income for those students reporting it. A minority of students received SP and their average household income is above the threshold of eligible minimum household income. It could be the case that the main indicator to target the disadvantaged students was school type (state schools) rather than the average household income. According to our analysis school-type or other area level indicators such as Acorn and POLAR are relevant but none have added any useful information in the regression models. Identifying the disadvantaged students based on these indicators is perhaps not the way forward for widening participation initiatives.

A minority of SP students are identified as ethnic minority and having identified disability and their outcomes of degree completion are not always positive. Raising the degree completion rate of the disadvantaged students is the main target of widening access initiatives. SP has promise for ethnic minority groups as they performed better than their counterparts in the achievement of first-class degree. Although these results are based on a small-scale data, these findings are relevant and need in-depth investigation involving interviews and observation of these disadvantaged groups. There is a potential

for evaluating targeted widening access initiatives, which involve supporting ethnic minorities and students with disability.

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