Educational Disadvantage and Fair Admissions at the University of Bristol: a reassessment of the evidence base

1. Context/Background

In 2013/14 the University commissioned a report from its Widening Participation Research Cluster (WPRC) into the current justification for each of the full suite of possible widening participation (WP) markers now available for providing evidence for 'educational disadvantage', and hence for a 'contextual data' response to the University's fair admissions practices. Nothing of the sort had been undertaken since the initial WPRC's research, which underpinned the establishment of that 'contextual' policy, some years ago. Subsequent annual quality-checks on this policy have focussed solely on the WP marker that the University chose to prioritise at that time – based on students from so-defined 'Low Performing Schools' (LPS). The more widely cast evaluation reported here augments this series of tightly-bounded annual checks, by putting the LPS metric into a broader, comparative, context, to check on its continuing justification as part of the University's WP policy. This review can be further justified both by recent significant changes that have occurred in the nation's secondary educational landscape, which may impact on the changing relative salience of some WP markers over the intervening time, including LPS, and also as some new potentially-informative variables, not incorporated in the WPRC's earlier work, have since become available or otherwise of interest to researchers.

2. Data sets

Data were extracted from University of Bristol's SITS resource, categorised in the way the University has been following for some time in its on-going analysis of WP. Three years (2010-11, 2011-12 and 2012-13) of graduating undergraduate cohorts have been used in the analyses, comprising 7027 students in total, distributed evenly across the three years (2408 in 2010-11, 2336 in 2011-12 and 2283 in 2012-13). Degree programmes from all Schools and Faculties are included, with the majority of students graduate on three (4657 [66%]) or four year programmes (2324 [33%]) and only very small numbers on five year programmes (46 [< 1%]). The data show only those graduates who completed in normal time (*ie.* no suspensions or repeat years), have an award code, have a final year exit assessment and a tariff point entry score. All must have taken A Levels as their final secondary school exam, and the overwhelming majority were UK resident at the time of their UCAS applications.

Individual measures of WP were classified using a binary coding such that, for example, a student's final year attainment was classified as either *at least equal to,* ***or*** *below, their cohort's final year median mark*, and their school type as either *independent* or *state*. The overall numbers of students in each WP category, along with the binary classifications applied, are detailed in Appendix 1. Those recorded as 'blanks' on any row have no relevant WP data in their record; some WP categories only apply to UK-based, and sometimes just England-based, students, while others are dependent on non-compulsory questions on the UCAS forms.

3. Methodology

The logic behind the University's 'contextual data' approach to its fair admissions process is that the likelihood of getting a high final year attainment may be a function of two individual student characteristics, first their attainment on entry (better students on entry are likely to be better students on exit) and, second certain 'widening participation' (WP) student characteristics. These may deflate some students' apparent final degree potential as 'read off' from their entry grades by admissions officers. So where such students have experienced some 'educational disadvantage' in their pre-university background, which then wholly or partially evaporates during their undergraduate career, their unadjusted-for-context entry attainment could underestimate their degree potential, and so risk those who otherwise deserve a Bristol place on their true academic potential being denied one.

To evaluate the evidence base for this approach to the University's admissions practices we identify and test the performance of each of ten separate WP characteristics, against two measures of a 'good' degree. The first, the attainment of an upper second class degree or better, is the commonplace such measure in both the national HE research literature and related public discourse, while the second, the attainment of an average final year mark at or above the median ('AAM' hereafter) for a student's graduating Bristol cohort (in practice, a mid-60's mark over the period we are concerned with) is one the WPRC has adopted in similar previous research on contextual data. Its justification stems from the reality that the great majority of Bristol undergraduates now attain a 'good' degree on the first criterion (87% in our datasets) so as to bring into question its value in distinguishing between students of higher and lower degree-level ability, particularly where the accompanying statistical analysis here benefits from there being sizeable numbers in both these categories. The 'degree class' criterion is also vulnerable to variations in practice among final examination boards in their preparedness to award upper second class degrees to students averaging below 60%.

In practice, therefore, we continue to prioritise the second (AAM) method in the main report here, though provide the equivalent 'degree class' results in Appendix 2 and also comment on them where the two methods are substantially different in their outcomes. Throughout all these analyses there is just one measure of high grade attainment on entry, that of attaining the equivalent of three AAA grades in a candidate's best three A Levels, with low grade entry being any other 'best three' A Level combination (the candidates in the entry cohorts analysed predated the award of the A* grade, and the clear majority of Bristol undergraduates in our analysis (61%) attained AAA, making it the nearest entry-grade equivalent to the exit median mark we adopt.

Using these definitions, we then hypothesise that the attainment of a good final degree can be a function of either or both of their entry attainment and educational disadvantage as reflected in their WP status. We allow for these to interact, such that, for instance, the capacity of WP status to predict exit attainment might be greater for those entering on lower grades than those who attain AAA at A Levels.

More formally, we specify:

Exit Attainment = Entry Tariff + WP Category + (Entry Tariff x WP Category)

with four categories/types of student for each WP category/good degree combination tested (*Low Tariff on Entry* [<360 points], *High Tariff on Entry* [360 and above), *WP-Category-WP*, *WP-Category-non-WP*); this form of equation, with an interaction between entry tariff and WP category, allows for this effect of WP to be differentiated at low and high tariffs. The model generates the probability of getting a good degree for each of these four categories, irrespective of department (*ie.* in the *typical* UoB department).

Some of the WP categories here relate to individual student characteristics (three of them), some to family-centred ones (again, three), two to the candidate's wider local community/neighbourhood and two more to her/his education. We use this typology to organise the results, and use the first case to illustrate the detailed form these take.

To complement these modelling results we also calculate Odds Ratios (OR), derived from the median.pred values generated by the statistical analyses above, using the following equation:

OR = ((median.pred [HiTar-WP measure])/ (median.pred [HiTar-non-WP measure])) x (100/1)

and

OR = ((median.pred [LoTar-WP measure])/ (median.pred [LoTar-non-WP measure])) x (100/1)

Odds Ratios here provide a measure of the odds of a specified outcome (*eg.* an AAM mark) from a specified initial state (*eg.* a WP student) against the alternative entry state (a non-WP student), when controlling for entry attainment. This is a more robust and reliable way of evaluating the probability of the degree outcomes of different WP measures separately for the High and Low entry Tariffs. The way we have specified these ORs is such that 100 indicates that the two odds being compared are the same, values above 100 indicate that the specified outcome is *more* probable for WP than non-WP students and values below 100 that it is *less* probable. The greater the divergence of the OR from 100 in either direction, the greater is the difference in the odds of the specified outcome from the two different WP and non-WP states.

The MLwiN statistical package, developed within the University, was used to analyse our data in these ways (see Rashbash *et al.* 2005, 2012a, b).

4. Results

4.1 Individual circumstances

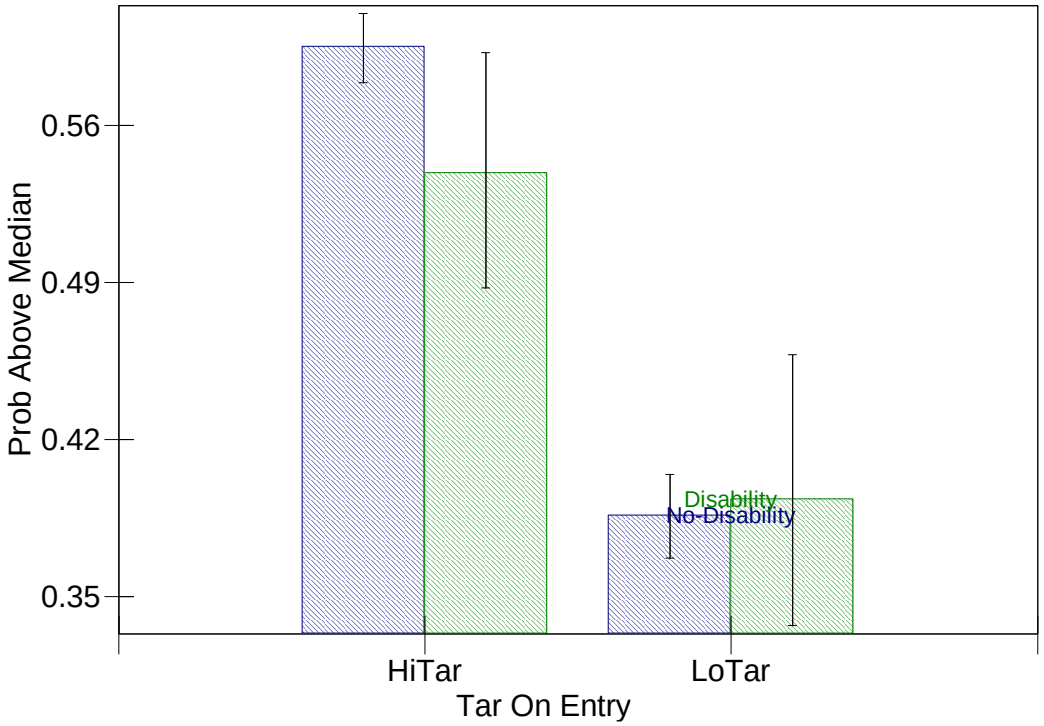
4.1.1 *Disabled students (categories: Disability/No-Disability)*

This first set of results shows there is a 39% likelihood of getting an AAM mark for a Low Tariff non-disabled student and a 59% likelihood of the same from such a student with a High Tariff entry, while a Disabled student from a Low Tariff has again a 39% likelihood of such a mark but only one of 54% if with High Tariff entry grades. The corresponding diagram (where and later, for ease of comparison we show the 'WP' category on the right of each pair of columns) shows the same graphically, and also the 'error bands' which represent the upper and lower predictions of the true value for each entry tariff/WP type of student at a 95% confidence level. These correspond respectively to the 'median high' and 'median low' predictions shown in the corresponding table.

It is clear that these error bands are very different as between the Low and High tariff cases for either of the WP categories (*ie.* the Disabled and non-disabled cases considered separately), with no overlap between them. On the other hand, for any one entry tariff case, whether High or Low, there is clear overlap between the error bands when comparing the Disabled and non-Disabled cases. We conclude that there is a statistically significant difference (at the 95% confidence level) in the power of the entry tariff to predict AAM outcomes, either for Disabled or non-Disabled students, whereas knowing whether a student is Disabled or not does not produce statistically different predictions.

The equivalent ORs show that the WP (disabled) students have 10% *less* chance of an AAM outcome compared to their non-disabled peers when both have high entry grades (*ie.* the OR is about 90%) but have a modest (2%) greater probability when both these groups of students enter on low grades.

Tar On Entry.pred	DISABILITY.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Disability	0.5387969	0.48744965	0.59247488	90.53
HiTar	No-Disability	0.59516162	0.57886755	0.60991716	
LoTar	Disability	0.39343733	0.33692807	0.45780686	101.87
LoTar	No-Disability	0.38623345	0.3671068	0.40431517	

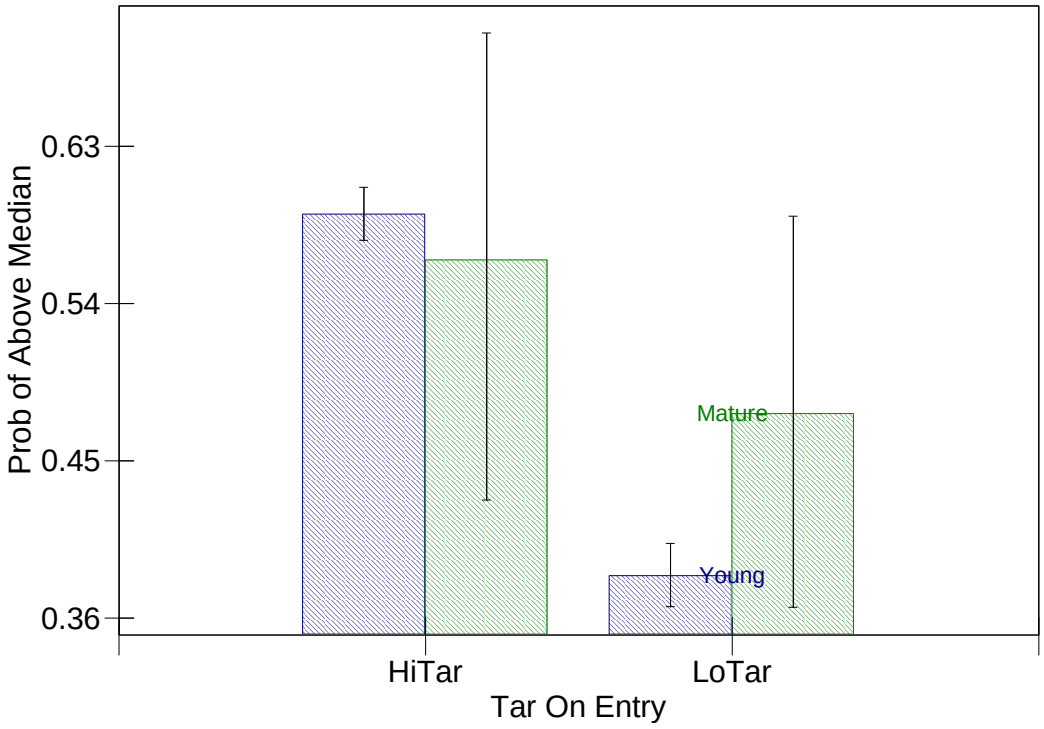


Conclusion

The results here, taken together, show that while entry tariff is an important control of degree outcome this WP status category is much less so, and only for low tariff entrants. Overall, there is no evidence of any 'catching up' from prior educational disadvantage by the Disabled students in their final degree performance over their non-disabled peers, once controlling for entry tariff, rather the reverse for high tariff entrants. At the same time we have substantial evidence that entry tariff by itself is a major control on degree outcomes. (Bear in mind the relatively small numbers of disabled students (see Appendix 1), and their internal heterogeneity as a category in interpreting these results.)

4.1.2 *Age on entry (categories: Young – under 21 on entry/Mature - aged 21 and above on entry)*

Tar On Entry.pred	AGE_ON_ENTRY (Hefce).pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Mature	0.56483203	0.42784095	0.69492906	95.56
HiTar	Young	0.59109777	0.57619351	0.60673445	
LoTar	Mature	0.47687647	0.36638659	0.59011155	124.10
LoTar	Young	0.38426596	0.36663464	0.40278545	



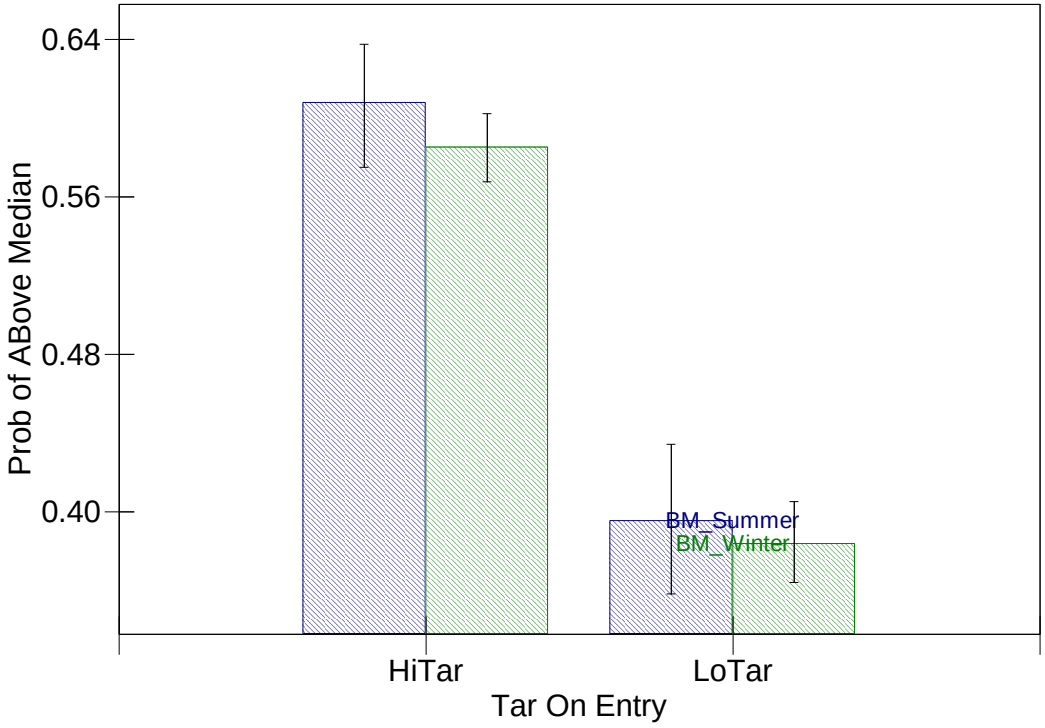
Conclusion

The differences here are substantial both between entry tariffs, between WP and non-WP students and also between the two exit measures. While young students (the great majority of Bristol undergraduates, of course) with high entry tariffs clearly outperform those with low entry grades, for mature students there is no such a relationship (the confidence interval bands are very wide both for entry and exit, reflecting very small numbers). Indeed, in the 'degree class' case (Appendix 2) the prediction of an upper second or better is marginally *higher* for mature students with low entry tariffs than those with the higher tariff. For a proportion of mature students their entry tariff may reflect exams taken some time ago, but whether so or not it appears that we can conclude next to nothing about their degree potential from how well they have performed academically prior to entering the University. When compared to their younger peers, the higher-tariff mature students are falling short of what might be seen as their academic potential, especially when measured by degree class, by some 13% on the OR basis, though only marginally so through the AAM OR. In contrast, on the AAM basis the low-entry matures are nearly 25% *more* likely to gain a high exit

score. Another current WPRC project is exploring the lived experiences at the University of mature students that lie behind these maverick and impersonal statistics in more detail, a study which these results suggest is timely.

4.1.3 Birth Month (categories: summer births (July, July, August)/remainder of the year ['Winter'])

Tar On Entry.pred	BIRTH_MONTH.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	BM_Summer	0.60765928	0.57497263	0.63758504	103.87
HiTar	BM_Winter	0.58501118	0.56747764	0.60233033	
LoTar	BM_Summer	0.39536804	0.35818928	0.43415391	103.05
LoTar	BM_Winter	0.38365158	0.36423925	0.40517557	



Conclusion

This is a new variable for this type of HE analysis, not just in Bristol but, to the best of our knowledge, in the wider WP/HE research literature as well. There is, though, considerable and consistent independent evidence that summer-birth pupils perform less well than their school peers at both the primary and secondary level (even though the reasons are less clear). Our results show, interestingly, that, while the difference is not statistically significant, there is still some overall tendency for summer births to do better at the University, once controlling for entry grades. Low and high entry summer birth students are 3-4% more likely to gain an AAM mark than those born in the other nine months. This is consistent with the thesis that the earlier disadvantages they experience at both primary and secondary school are less important by the time students reach university. The implication is that their degree-level potential might be somewhat undervalued by

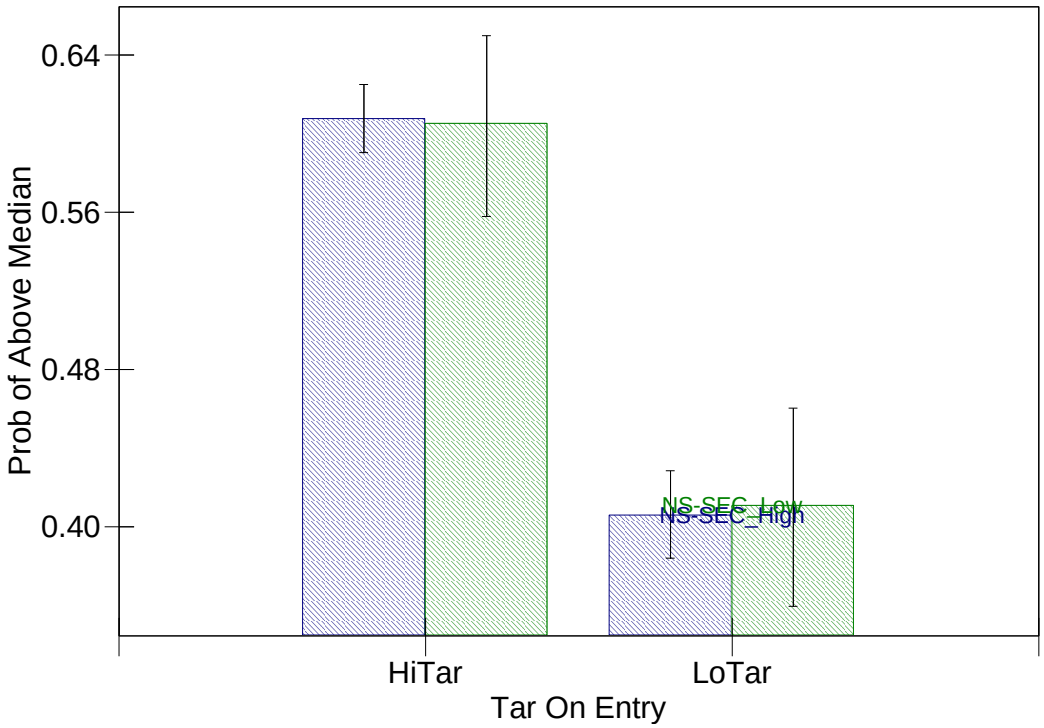
their A Level, and indeed AS and GCSE level, performances on which entry to Bristol, as to other similarly competitive universities, is heavily dependent, of course.

4.2 Family characteristics

4.2.1 Socio-Economic Class (categories Low [NS-SEC codes 3 – 8]/High , NS-SEC HIGH [Socio-Economic Codes 1 and 2]; 9 is unclassified and has been excluded)

(NB Given the highly skewed social class composition of Bristol students, this project deviates from the standard division of NS-SEC 4-8 and 1-3 for Low and High class definitions respectively, to produce two more evenly-sized sub-groups of undergraduates for the purpose of analysis.)

Tar On Entry.pred	SOCIO_ECONOMIC_CODE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	NS-SEC_Low	0.60510987	0.55800116	0.64983428	99.57
HiTar	NS-SEC_High	0.60769856	0.59052241	0.62497991	
LoTar	NS-SEC_Low	0.4110086	0.35981888	0.46055833	101.24
LoTar	NS-SEC_High	0.40598491	0.38428941	0.42875341	



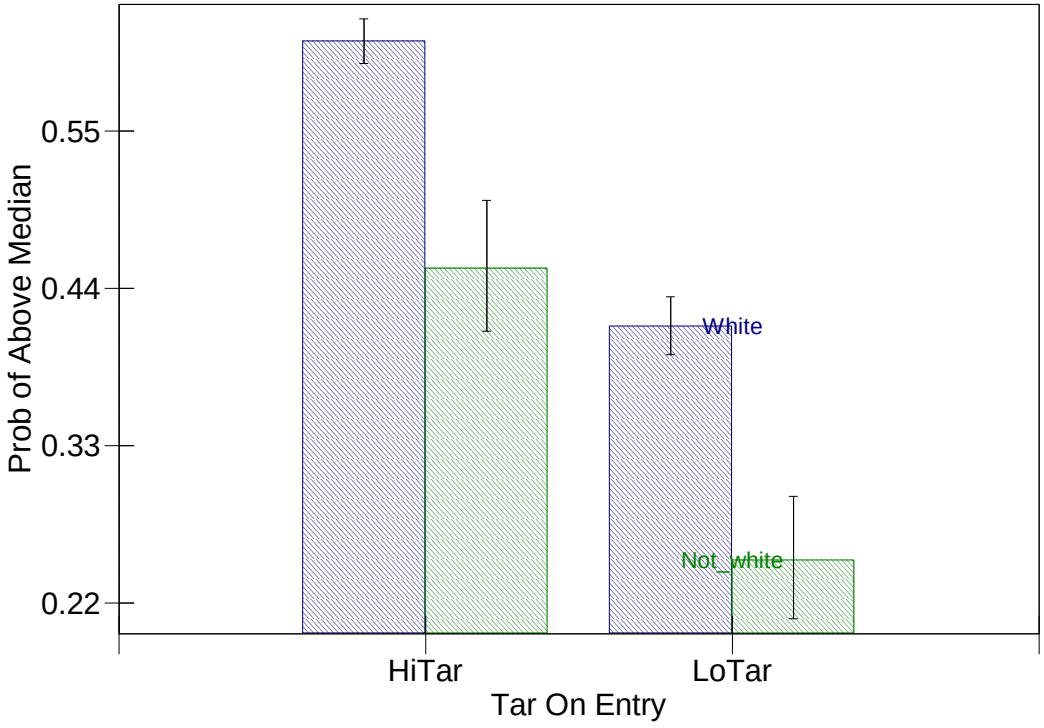
Conclusion

As with most previous WP categories, while the differences by entry tariff are substantial as degree attainment predictors for both social class groups considered separately, those when comparing them and controlling for entry tariff are not. So knowing WP status in this way adds nothing further to entry grades in our ability to predict exit attainment on either of our two such measures. There is

certainly no evidence any 'catching up' from previous educational disadvantage by the lower social class students against their peers, consistent with the Hoare and Johnston (2011) for the Bristol case. (A general caveat surrounds these data: the class categorisation is based on a non-compulsory question on the UCAS application form and some researchers have cast doubts on the reliability of the ways in which these free-format responses are converted by UCAS into NS-SEC categories.)

4.2.2 Ethnicity (categories: white/non-white)

Tar On Entry.pred	ETHNICITY.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Not_white	0.45417774	0.41042322	0.5017916	74.10
HiTar	White	0.61293566	0.59745908	0.62860155	
LoTar	Not_white	0.24989229	0.2091095	0.29458171	60.45
LoTar	White	0.41338071	0.39393961	0.43424734	

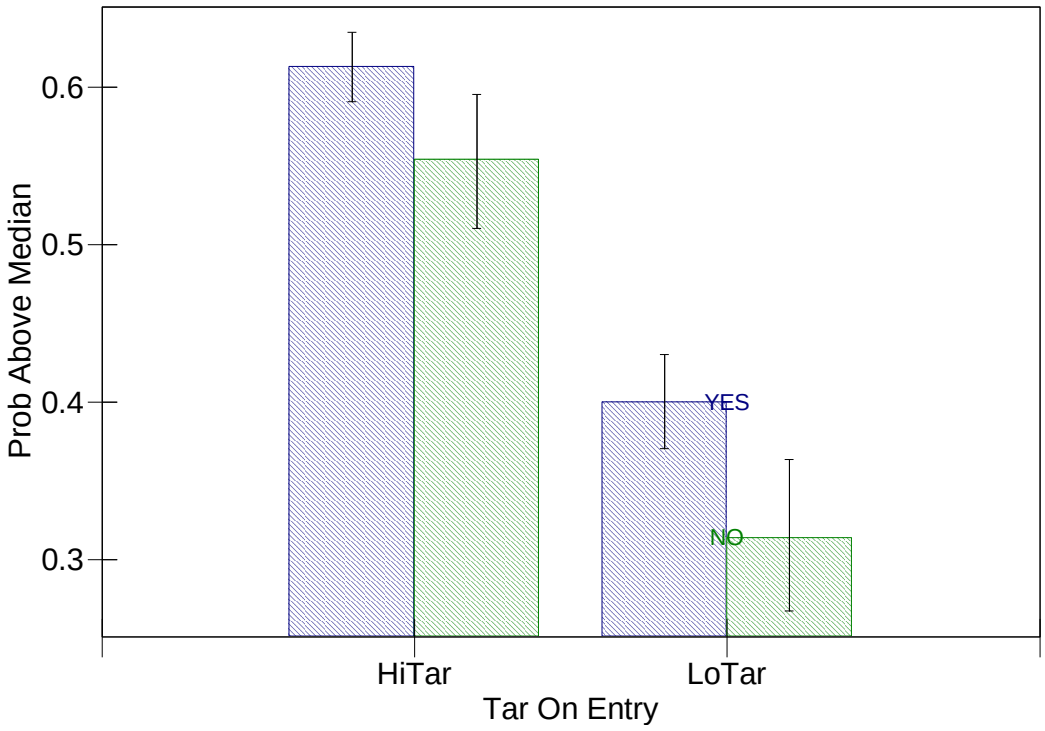


Conclusion

This outcome is more shocking than surprising: a similar result emerged from the initial WPRC analysis of potential WP markers for a contextual data approach to admissions, and is consistent with independent research evidence. Our results showed clear and statistically significant differences in exit attainment when controlling both for entry tariff and also for ethnicity, such that white students outperform their non-white peers, irrespective of entry tariff. The OR results are the most divergent from 100 of all the WP measures we examined, and on both the output measurements. In the low tariff/AAM case white students out-perform their non-white peers by a massive 40%. Yet nationally, non-white students are *over*-represented in Higher Education. It is interesting to speculate the reasons for this dramatically accelerated progress of their white peers, both across the HE sector and specifically at Bristol.

4.2.3 *Prior parental experience of Higher Education (categories: at least one parent with HE experience/neither parent with HE experience)*

Tar On Entry.pred	PARENT_IN_HE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	NO	0.55392462	0.51021677	0.59537083	90.40
HiTar	YES	0.61272484	0.59053367	0.63474524	
LoTar	NO	0.31370181	0.26722074	0.36355773	78.42
LoTar	YES	0.40002152	0.37026018	0.42991894	



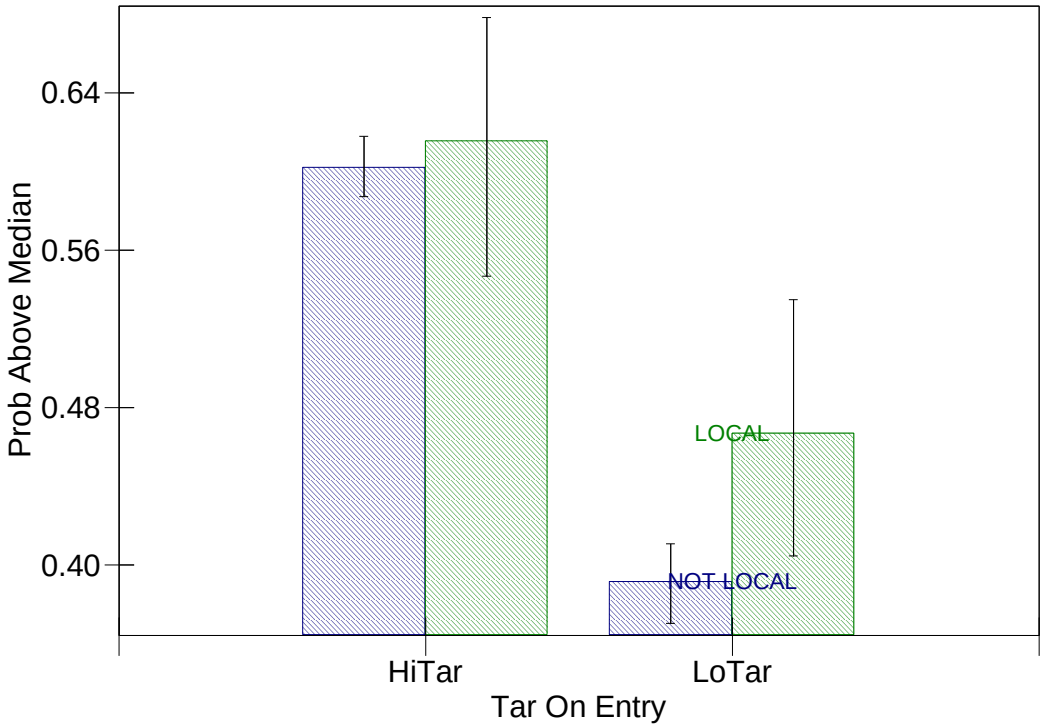
Conclusion

This is a particularly interesting variable since, like birth month, it has not to our knowledge previously been explored by the academic research literature. Our results suggest that, rather depressingly for the cause of social mobility, those students with one or both parents having HE experience gain some clear additional advantage in their university studies and degree attainment from this, when controlling for entry tariffs, but especially for those with low prior attainment. Here the difference *is* statistically significant and students with 'no HE' parents are over 20% less likely to gain an AAM mark. . Speculating about the reasons behind these results is tempting, but takes us beyond our present remit, of course. Finally, while Bristol apparently admits comparatively few 'no parental HE experience' applicants, these data are derived from a non-compulsory UCAS question with a very high non-response rate, the usefulness of which has also been questioned by some commentators as potentially open to 'game playing' by applicants.

4.3 Neighbourhood characteristics

4.3.1 *Locally resident prior to University (categories: BA or BA postcode/remainder)*

Tar On Entry.pred	LOCAL.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	LOCAL	0.61534673	0.54676497	0.678339	102.22
HiTar	NOT LOCAL	0.60196525	0.5872283	0.61797929	
LoTar	LOCAL	0.46679389	0.40461257	0.53489965	119.21
LoTar	NOT LOCAL	0.39156353	0.37023136	0.41075429	

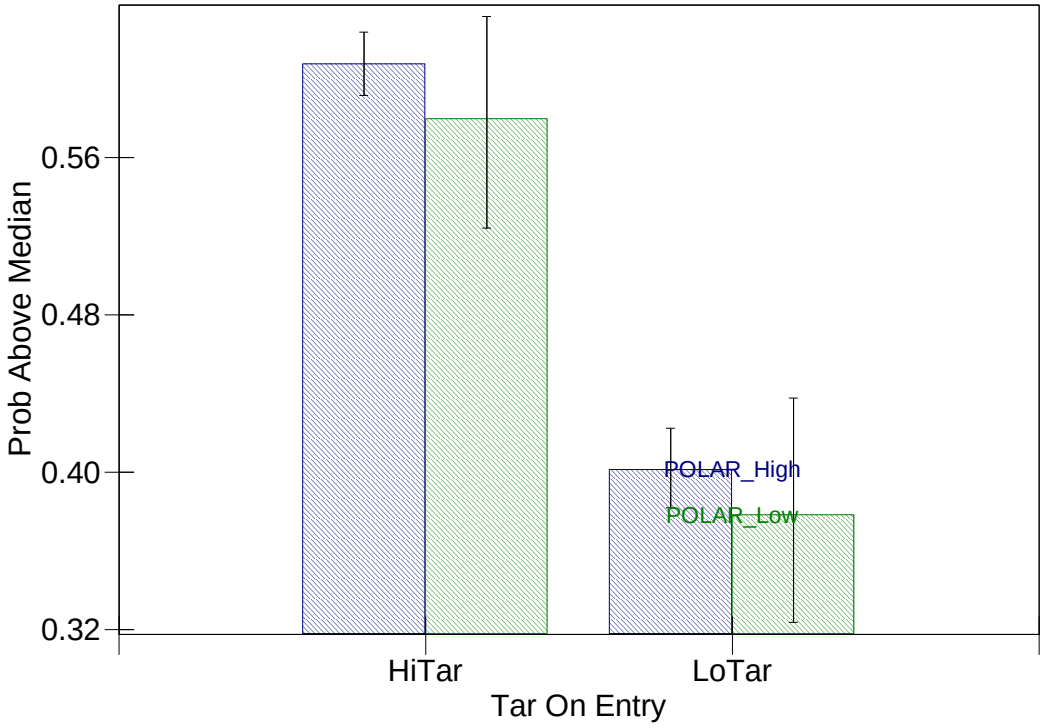


Conclusion

Some of the students with local home postcodes will continue to live at home while studying as undergraduates , though by no means all, particularly since the University relaxed the accommodation rules which had previously excluded them from applying to Halls of Residence in their Year 1. The small number of local (BA and BS home postcode) students at the University again accounts for the wide error bands on their parts of the graphs, but, even so, local students on low entry grades almost reach the 95% significance criterion for their greater likelihood (of nearly 20%) of gaining an AAM mark compared to their non-local peers. They have a much smaller advantage at higher entry grades. However, this is also the most inconsistent of our results in that those based on degree class are in the opposite direction. One possible implication of this is that those local students who do slip below the median mark, particularly those with high entry grades, do so by some way and so are disproportionately likely to attain a lower second class (or worse) degree.

4.3.2 *Home Residence in low HE participation neighbourhood (categories: Low [POLAR quintiles 1 and 2]/High [POLAR quintiles 3-5])*

Tar On Entry.pred	POLAR_2_QUINTILE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	POLAR_Low	0.57964951	0.52414829	0.63181382	95.43
HiTar	POLAR_High	0.60742152	0.59146792	0.623864	
LoTar	POLAR_Low	0.37832847	0.32355577	0.43783292	94.31
LoTar	POLAR_High	0.40116897	0.38177502	0.42243847	



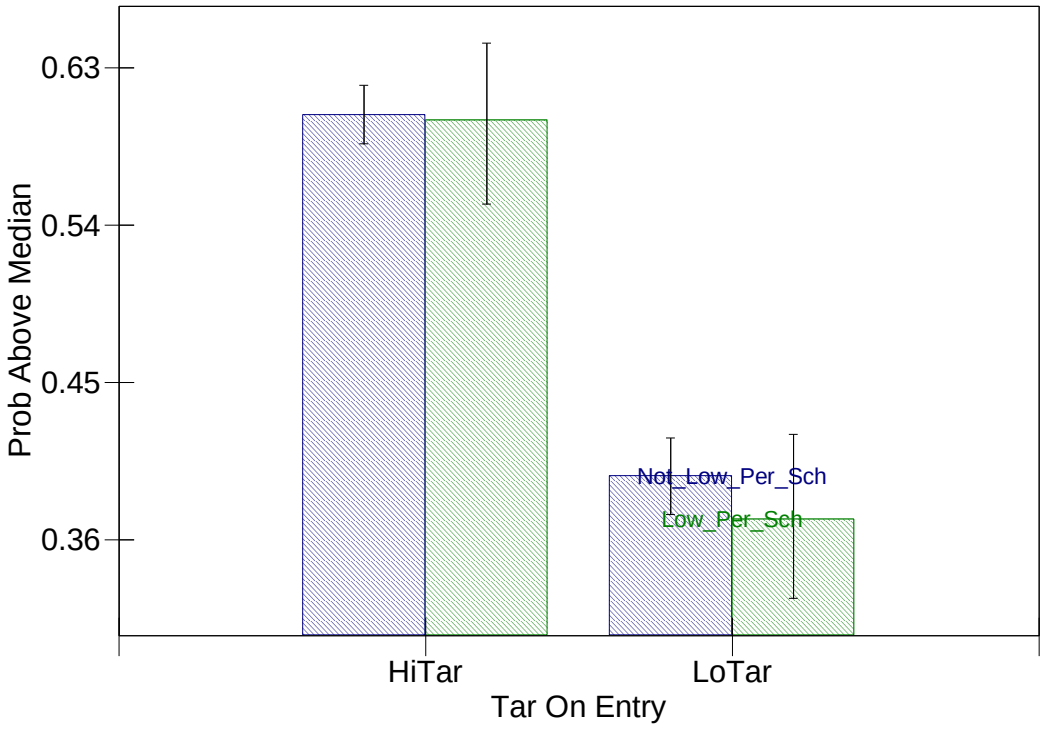
Conclusion

As with a number of other variables, the differences for each WP category separately by entry tariff are clear and entirely expected, with high entry tariff students performing better in their degrees. Those comparing these categories and controlling for entry tariff are less emphatic, but, as with social class and parental HE experience , these is also no evidence of any catching up by the WP category, rather, the reverse. So whether entering with low or high tariffs the comparatively small number of Bristol undergraduates from low participation neighbourhoods (POLAR 1 and 2) are, overall, less likely to attain an AAM exit mark than their peers from more affluent, more university-oriented, neighbourhoods by about 5% on the ORs. Any interest in the University in using this as an additional criterion in the University's contextual data practices needs to be mindful that Bristol continues to have no supporting evidence for educational disadvantage in this regard. Again, this is consistent with both the Hoare and Johnston's (2011) analysis for Bristol and the more recent national-scale re-examination by HEFCE (2014) of relative attainment of individual students at school and then university.

4.4 Educational characteristics

4.4.1 *Low performing schools (categories; Low performing schools/High performing schools)*

Tar On Entry.pred	IS_LOW_PERFORMING_SCHOOL.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Low_Per_Sch	0.60010386	0.55206192	0.64412636	99.46
HiTar	Not_Low_Per_Sch	0.60338753	0.58682919	0.62001187	
LoTar	Low_Per_Sch	0.37186417	0.3268297	0.42062744	93.78
LoTar	Not_Low_Per_Sch	0.39654192	0.37474063	0.41851234	

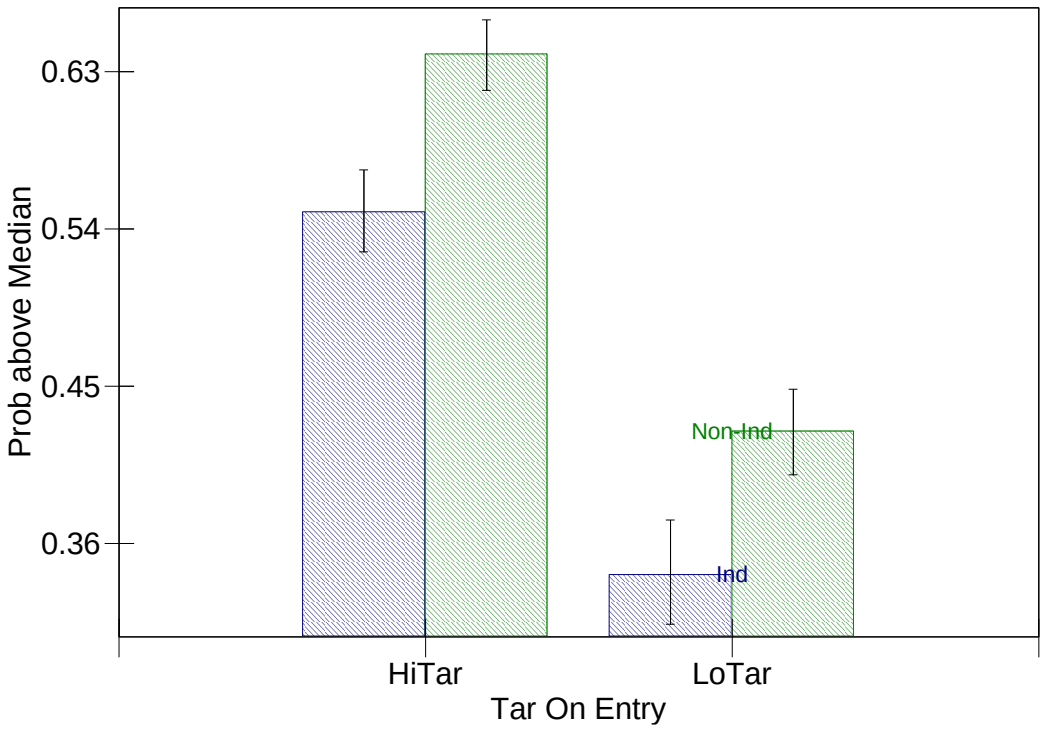


Conclusion

Of course, this is a particularly critical WP variable for the University's current approach to widening participation through our use of contextual data in the assessment of applications. However, our results suggest there is no clear supporting evidence for its continued use. Unsurprisingly, high tariff entry pupils outperform their low tariff peers from both low and high performing schools examined separately, but there is no evidence of any catching up of the latter by the former. Indeed, on balance, although the results do not reach statistical significance, low performing school pupils are *less* likely to attain a high AAM mark, than those from high performing ones, albeit only marginally so for those with high entry grades, but by 6% for those with low entry attainment. For whatever the reasons, this seeming erosion of its justification as a marker of 'educational disadvantage' since we began our 'contextual' admissions policy calls into question the University's continued use of LPS as the basis for its contextual data approach to admissions.

4.4.2 School Type (categories: Independent schools/ State schools)

Tar On Entry.pred	SCHOOL_TYPE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Non-Ind	0.64017576	0.61951619	0.65965623	116.48
HiTar	Ind	0.54959214	0.5271306	0.57381326	
LoTar	Non-Ind	0.42410561	0.39941835	0.44821143	124.00
LoTar	Ind	0.34202006	0.31398973	0.37354583	



Conclusion

Again, consistent with Hoare and Johnston (2011), we find not only a significant difference in degree attainment depending on entry tariff for both State and Independent school students separately, but also by school type, when controlling for entry tariff. The 'degree class' results in Appendix 2 show this as marginal for high entry but clear for low entry students but those for the AAM measure show the State-Independent difference applies to both these entry-attainment categories. It is statistically significant (none of the error bands intersect) and represents an impressive difference between State and Independent pupils in the prediction of high exit outcomes, of 16% and 24% for high and low entry students respectively. This is second only to the earlier 'ethnicity' outcome in the scale of these differences between WP and non-WP students.

5 **Overall Conclusions**

More could be done to extend this work to inform the University's fair admissions approach to contextual data, such as the identification of equi-potential groups for any WP measures that do produce *prima-facie* evidence for educational disadvantage as defined above, by applying a more

detailed breakdown of entry and exit grades, and by the disaggregation of the aggregated results here by academic cohort and faculty or department (but with the risk of reducing the numbers below the point usefulness for analysis). Equally, given the obvious ways in which many of the WP categories treated separately here are inter-related, we could apply some multivariate approach to our analysis (another of our current WPRC projects is already doing this).

However, our first reassessment of a range of WP markers against potential evidence for educational disadvantage has produced some valuable findings. First, overall, entry attainment emerges as a more powerful control on predicting final degree outcomes than WP status, being statistically significant in most of the exercises we have run. So the University's justification of placing considerable stress on prior attainment in its admissions process is robustly supported. Second, our results are generally consistent as between the two different measures of final attainment we use, although the minority of exceptions serve as a useful reminder of how results can sometimes be sensitive to what may seem minor changes in research design. Third, on the main issue for the University – the relative justification of different measures of widening participation in a contextual approach to admissions – our ten WP categories fall into three camps.

First, are those where there is no statistically significant evidence for educational disadvantage, to justify any contextual data consideration being given to 'WP' students,– namely *those who were previously locally resident, resident in low participation neighbourhoods, are from low social class families , attended low performing schools, have parents lacking any HE experience, are mature applicants or disabled applicants.* None of these offers any evidence of 'catching up' on their non-WP peers while at University. For *those born in the three summer months* there is some evidence of 'catch up' from the 'WP' category, although it falls some way short of conventional statistical significance thresholds.

Second, one WP measure where there is currently strong statistically significant evidence for educational disadvantage of WP against non-WP students, but the relevant data are unavailable to admissions tutors at the point of application – namely *ethnicity.* Here, were UCAS to make the relevant data available at the point of application (as it did for one year some time ago), we would have evidence to support some contextual component offer-making - in favour of white applicants.

One final measure where there is statistically significant evidence for educational disadvantage of WP over Non-WP students, *and* the relevant data are available to admissions tutors – namely *school type.* Here there is continued evidence in Bristol to support some contextual favouring of state school applicants over those from the private sector, consistent with all such previous studies we are aware of, in Bristol and beyond.

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September, 2014

Acknowledgements

We are grateful to Amy Butterworth (Student Recruitment, Access and Admissions) for the supply and discussion of the underlying datasets, to Professor Kelvyn Jones (Geographical Sciences) for assistance with the statistical modelling and use of the MLwiN computer package, and the Graduate School of Education for provision of IT facilities and work space.

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Appendix 1

OVERALL NUMBERS AND WP BINARY CLASSIFICATIONS

	Non WP Category	WP Category	n	Comments
Disabled	**No Disability** 6451 (92%)	**Disability** 576 (8%)	7027	
Age on Entry	***Young (≤ 21)*** 6901 (98%)	***Mature (> 21)*** 126 (2%)	7027	
Birth Month	***Winter*** 5316 (76%)	***Summer (Jun, Jul, Aug)*** 1711 (24%)	7027	
Socio-economic code	***High*** 4967 (71%)	***Low*** 832 (12%)	5799	1288 (18%) 'unclassified'
Ethnicity	***White*** 5947 (85%)	***Non-white*** 856 (12%)	6805	222 (6%) 'blank'
Parental HE	***Yes*** 3125 (44%)	***No*** 908 (13%)	4033	2994 (43%) 'unknown'
Local	***Not Local (Not BS or BA)*** 5922 (84%)	***Local (BS, BA)*** 448 (6%)	6370	657 (9%) 'blank'
POLAR	***High (3 - 8)*** 5653 (80%)	***Low (1 -2)*** 619 (9%)	6272	755 (11%) 'blank'
Low-performing School	***Not LPS*** 5201 (74%)	***LPS*** 807 (11%)	6008	1019 (16%) 'blank'
School Type	***Independent*** 2740 (39%)	***State*** 3863 (55%)	6603	424 (6%) 'not applicable'

Appendix 2

1. DATA ANALYSIS FOR DEGREE CLASS (2:1 AND ABOVE, 2:2 AND BELOW)

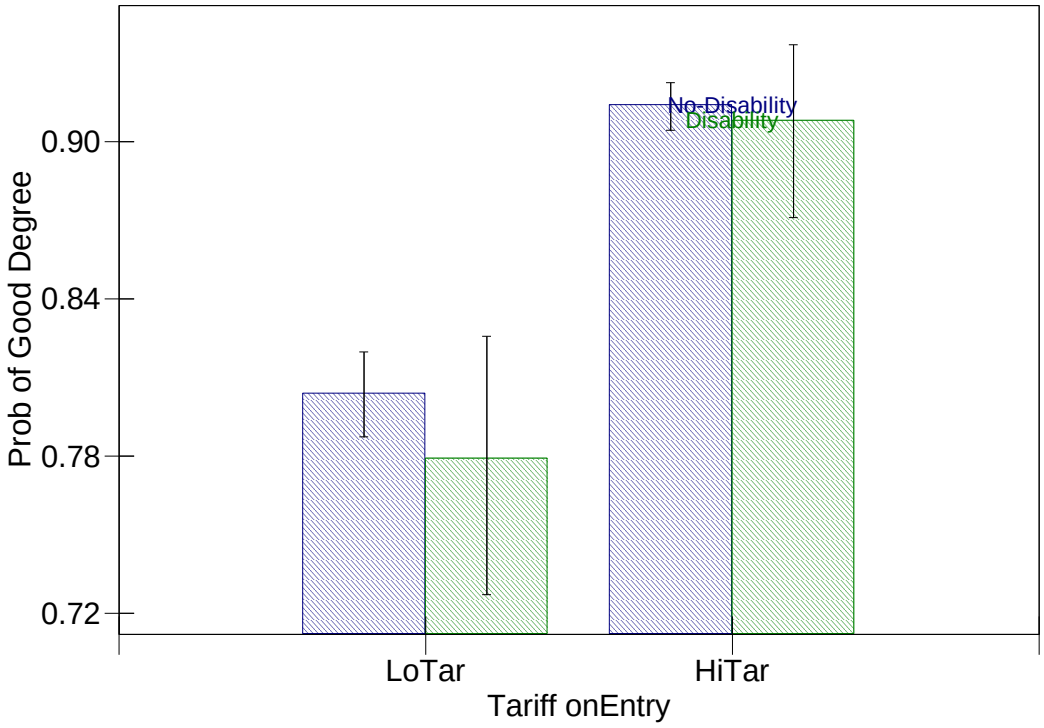
Of 7027 students competing in the allotted time over three graduating years (2010-11, 2011-12, 2012-13) from all departments/degree course lengths (3, 4 and 5 years) 6,114 (87%) obtained a *good* degree (2:1 and above) and only 913 (13%) a degree of 2:2 of below. Despite this sharp imbalance, taking a *good* degree is widely adopted measure of exit attainment in this sort of HE sector.

2. Results

2.1 Individual circumstances

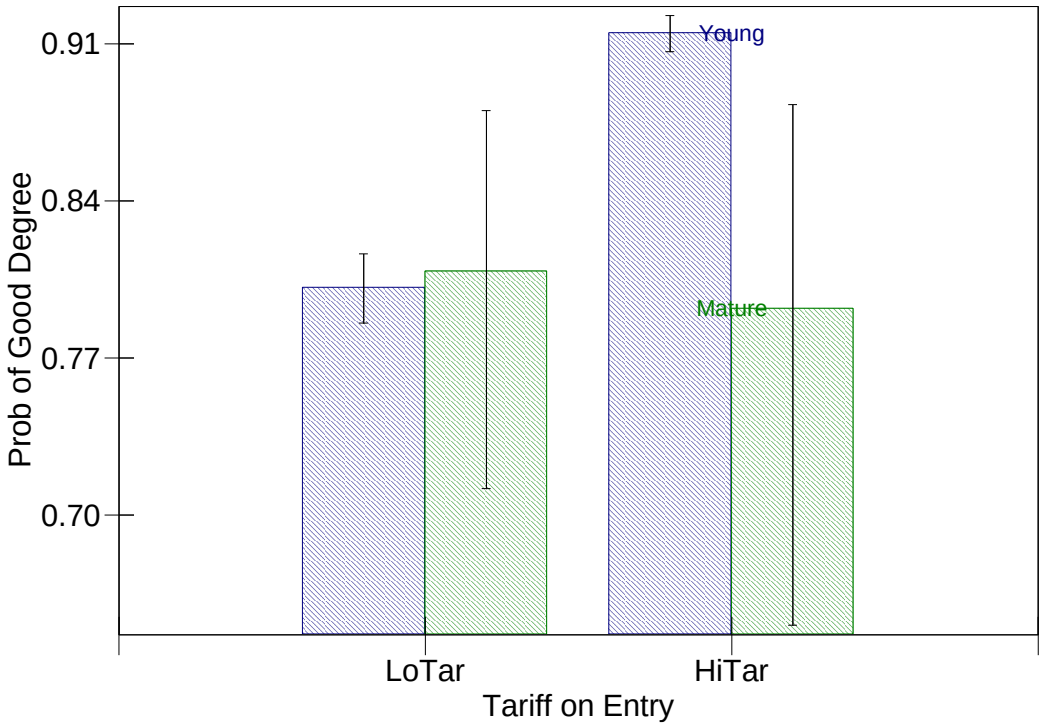
2.1.1 Disabled students (categories: Disability/No-Disability)

TARIFF CODE.pred	Disab.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Disability	0.90941155	0.86997581	0.93573987	99.50
HiTar	No-Disability	0.91401017	0.90485388	0.92178988	
LoTar	Disability	0.77933818	0.72869748	0.82533175	96.98
LoTar	No-Disability	0.80362934	0.78781521	0.81969315	



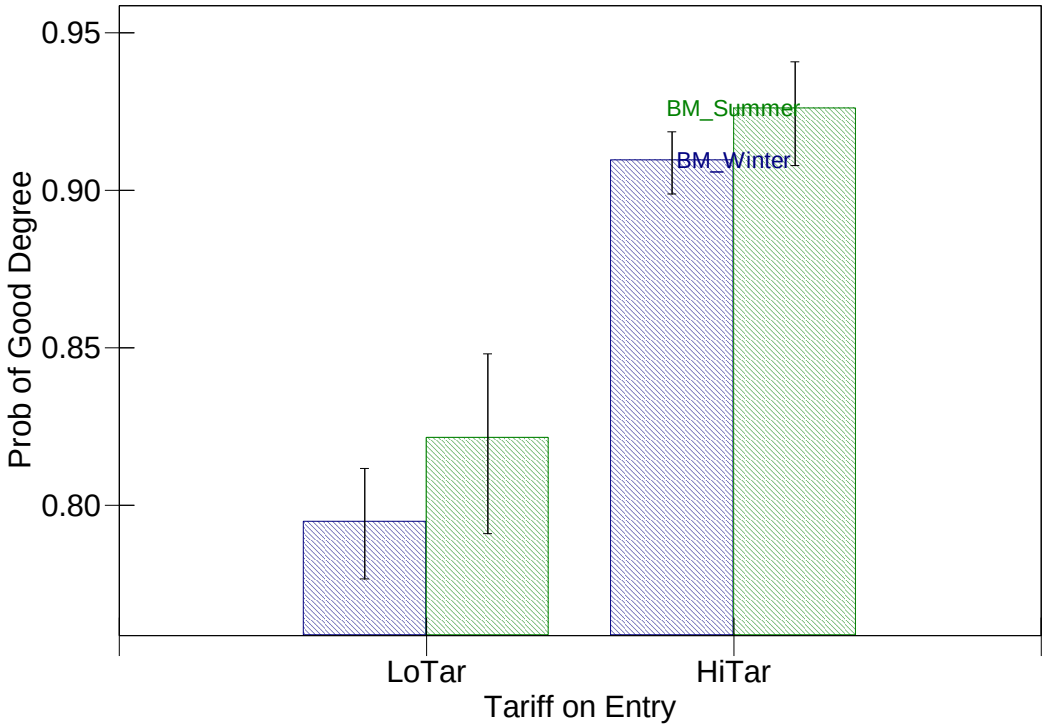
2.1.2 Age on entry (categories: Young – under 21 on entry/Mature - aged 21 and above on entry)

TARIFF CODE.pred	AGE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Mature	0.79490054	0.64892852	0.88426292	86.88
HiTar	Young	0.91498351	0.90617692	0.92248255	
LoTar	Mature	0.80667788	0.71178675	0.87933886	100.69
LoTar	Young	0.80118608	0.78587198	0.81678694	



2.1.3 Birth Month (categories: summer births (July, July, August)/remainder of the year ['Winter'])

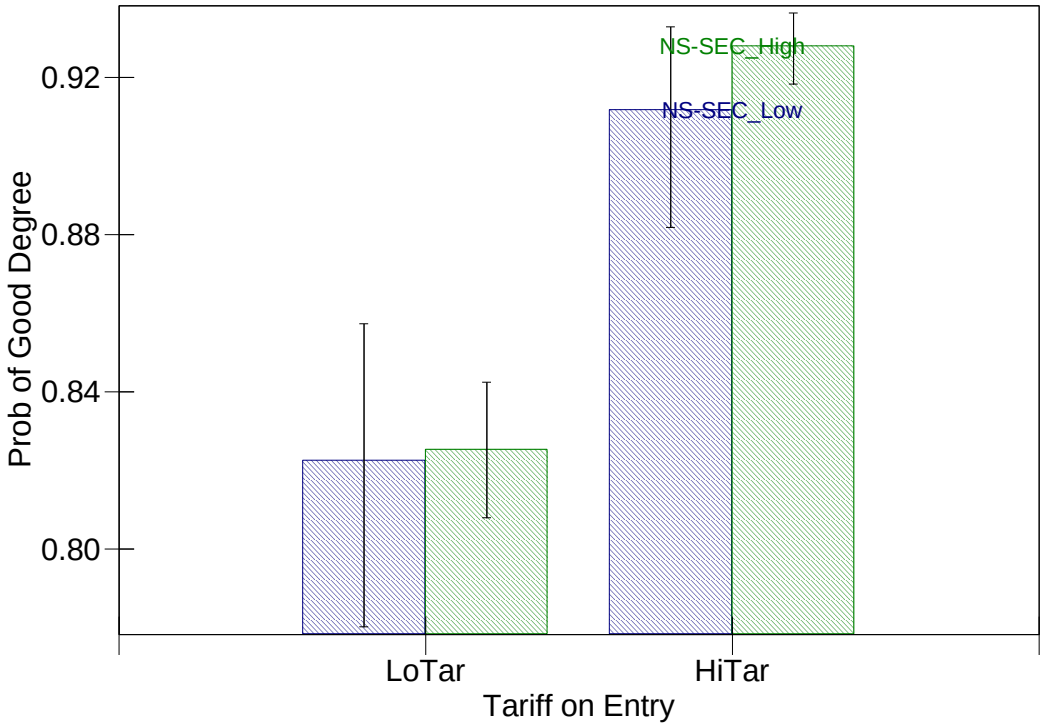
TARIFF CODE.pred	BIRTH_MONTH.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	BM_Summer	0.92641073	0.9077214	0.94041741	101.85
HiTar	BM_Winter	0.90959901	0.89898443	0.91898191	
LoTar	BM_Summer	0.82097459	0.7907728	0.84964913	103.29
LoTar	BM_Winter	0.7948575	0.77797407	0.81170571	



2.2 Family characteristics

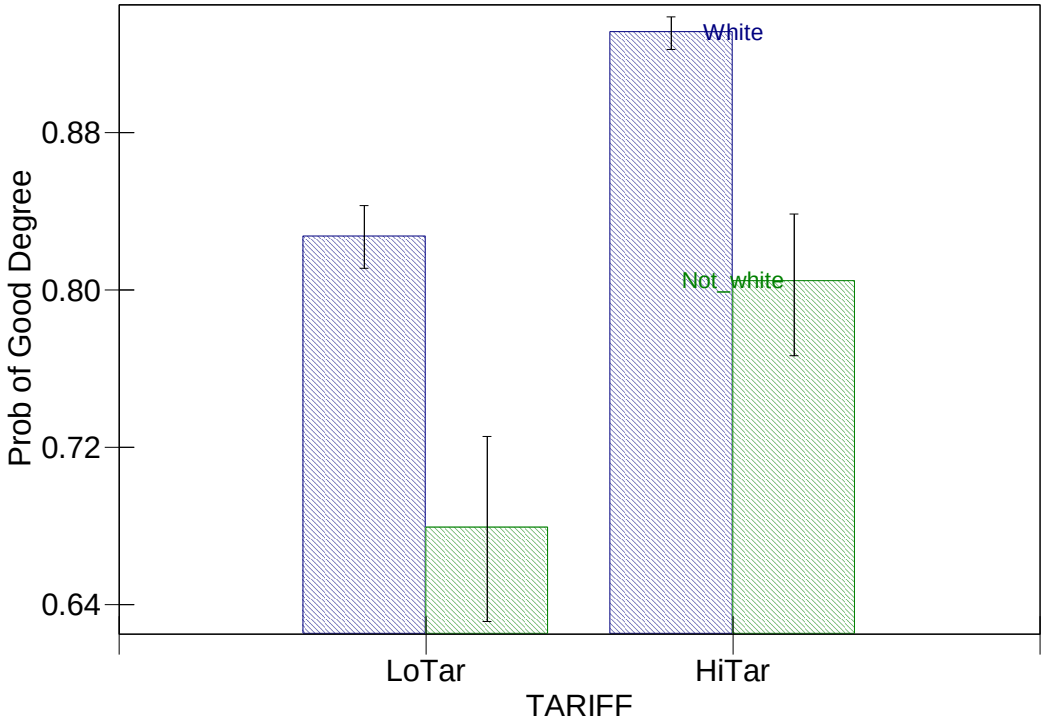
2.2.1 Socio-Economic Class (categories: Low [NS-SEC codes 3 – 8], High /NS-SEC HIGH [Socio-Economic Codes 1 and 2]; 9 is unclassified and has been excluded)

TARIFF CODE.pred	SOCIO_ECONOMIC _CODE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	NS-SEC_Low	0.91120589	0.88115585	0.93440783	98.19
HiTar	NS-SEC_High	0.92803639	0.91782224	0.93657398	
LoTar	NS-SEC_Low	0.82139343	0.77619904	0.86021984	99.56
LoTar	NS-SEC_High	0.82503939	0.80764204	0.84315473	



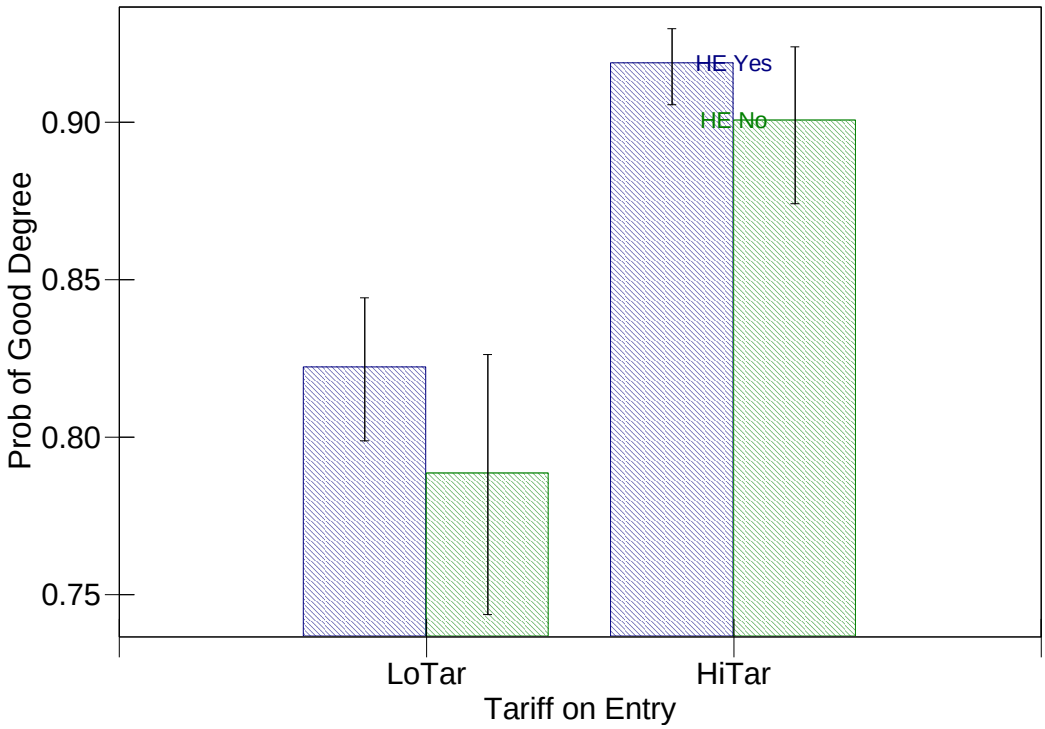
2.2.2 Ethnicity (categories: white/non-white)

TARIFF CODE.pred	ETHNICITY.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Not_white	0.80516982	0.76482534	0.8373403	86.46
HiTar	White	0.93126178	0.92259616	0.93849534	
LoTar	Not_white	0.68030542	0.63487887	0.72510022	82.20
LoTar	White	0.82762283	0.81182212	0.84349072	



2.2.3 Prior parental experience of Higher Education (categories: at least one parent with HE experience/neither parent with HE experience)

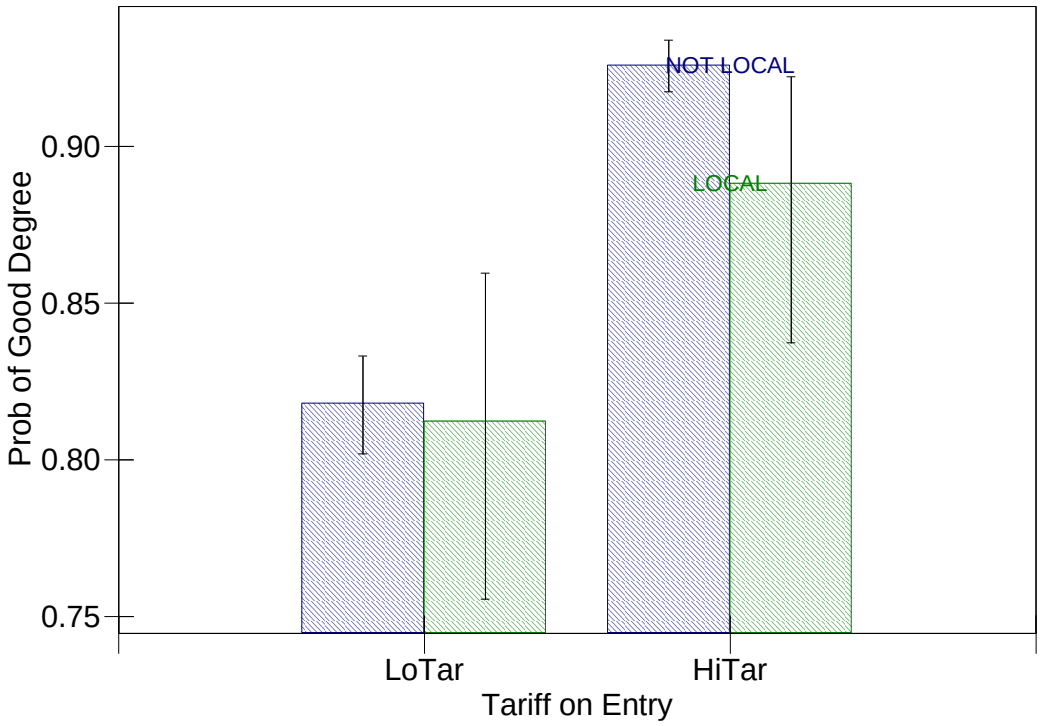
TARIFF CODE.pred	PARENT_IN_HE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	NO	0.90155989	0.87242758	0.92277378	98.14
HiTar	YES	0.9186058	0.90580964	0.92955989	
LoTar	NO	0.78915328	0.74539649	0.82617784	95.92
LoTar	YES	0.82271922	0.79983675	0.84516573	



2.3 Neighbourhood characteristics

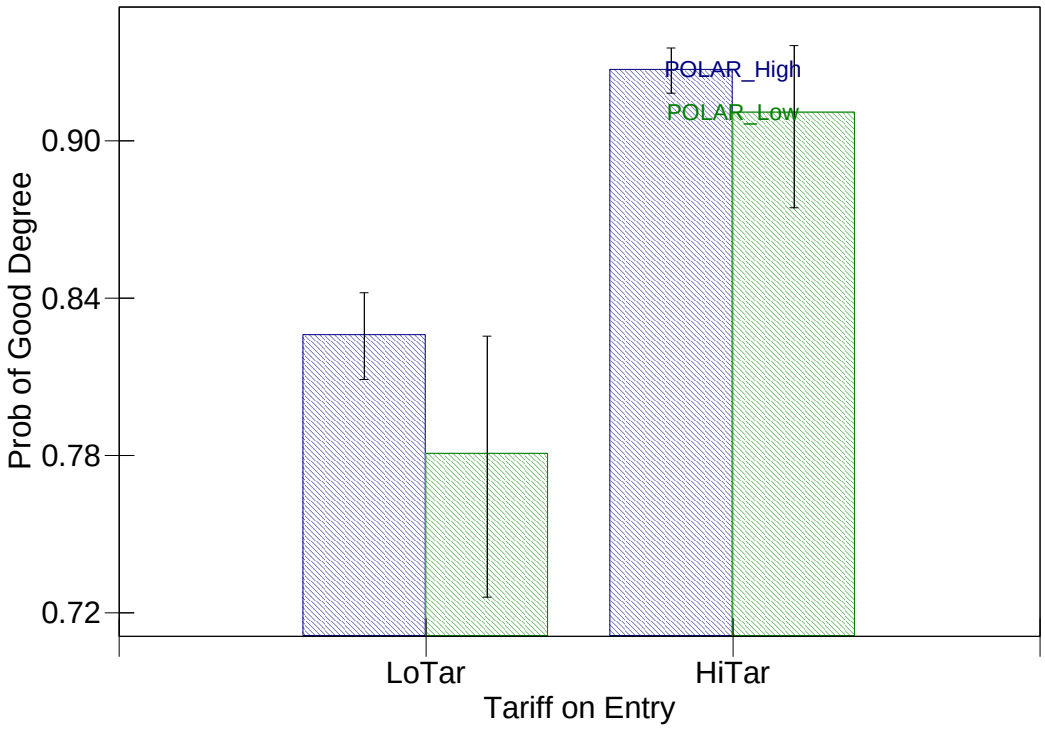
2.3.1 Locally resident prior to University (categories: BA or BA postcodes/remainder)

TARIFF CODE.pred	Home.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	LOCAL	0.8874898	0.84220195	0.92262393	95.84
HiTar	NOT LOCAL	0.92601526	0.91702461	0.933927	
LoTar	LOCAL	0.8130812	0.75708079	0.8587743	99.41
LoTar	NOT LOCAL	0.81792641	0.80207735	0.83398467	



2.3.2 Home Residence in low HE participation neighbourhood (categories: Low [POLAR quintiles 1 and 2]/High [POLAR quintiles 3-5])

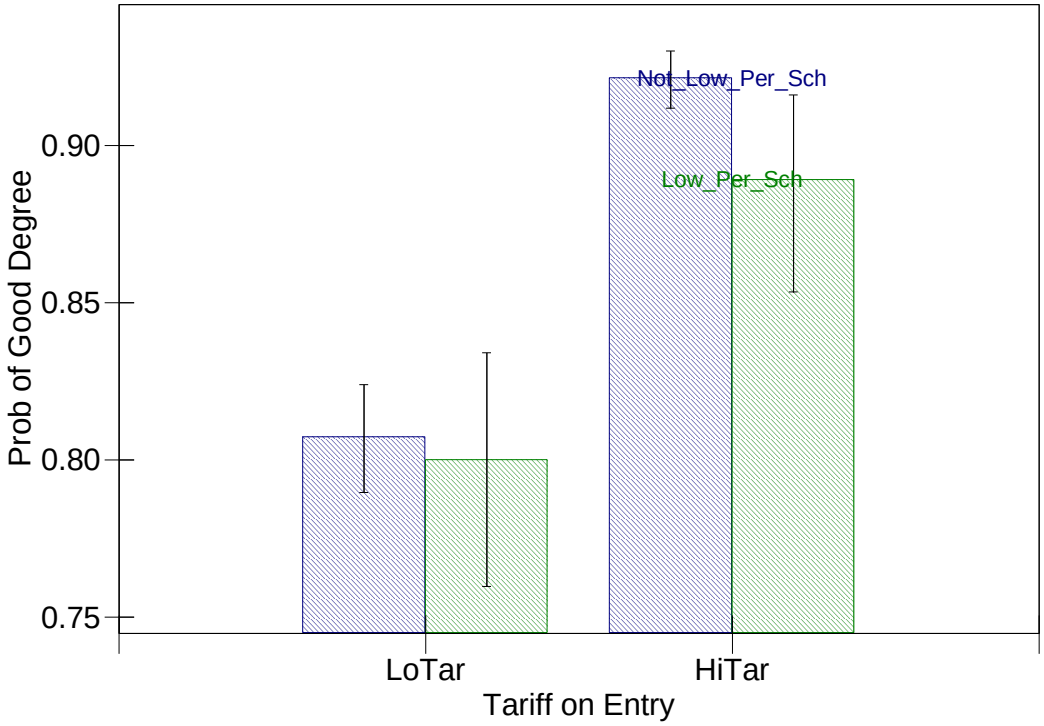
TARIFF CODE.pred	POLAR_2_QUINTILE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	POLAR_Low	0.91041785	0.8772462	0.93650585	98.17
HiTar	POLAR_High	0.92736417	0.91820759	0.93539071	
LoTar	POLAR_Low	0.78068012	0.72900426	0.82506013	94.49
LoTar	POLAR_High	0.8261807	0.81025779	0.84224069	



2.4 Educational characteristics

2.4.1 Low performing schools (categories: Low performing schools/High performing schools)

TARIFF CODE.pred	IS_LOW_PERFORMING _SCHOOL.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Low_Per_Sch	0.88886577	0.85670978	0.91582894	96.44
HiTar	Not_Low_Per_Sch	0.92163366	0.91191071	0.93017685	
LoTar	Low_Per_Sch	0.80030513	0.7585398	0.83656168	99.13
LoTar	Not_Low_Per_Sch	0.80729824	0.78957981	0.82520962	



2.4.2 School Type (categories: Independent schools/ State schools)

TARIFF CODE.pred	SCHOOL_TYPE.pred	median.pred	median.low.pred	median.high.pred	OR
HiTar	Non-Ind	0.92038643	0.90925854	0.9307878	100.79
HiTar	Ind	0.913167	0.89915818	0.9251312	
LoTar	Non-Ind	0.82229632	0.80289263	0.84025097	105.82
LoTar	Ind	0.77703595	0.75030452	0.80365402