An ecological fallacy in higher education policy: the use, overuse and misuse of 'low participation neighbourhoods'

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Abstract: One form of ecological fallacy is found in the dictum that 'you are where you live' – otherwise expressed in the idea that you can infer significant information about an individual or their family from the prevailing conditions around their home. One expression of this within higher education in the UK has been the use (and, arguably, overuse and misuse) of 'low participation neighbourhoods' (LPNs) over the last 15 years. These are areas that have been defined, from historic official data, to have a lower-than-average propensity to send their young people onto university.

These LPNs have increasingly become used within the widening participation and social mobility agendas as a proxy for young people from disadvantaged backgrounds who have the potential to benefit from higher education, but who would not attend without encouragement support and/or incentives. In this paper, we explore the various uses to which LPNs have been put by policymakers, universities and practitioners, including the targeting of outreach activities, the allocation of funding and the monitoring of the social mix within higher education.

We use a range of official data to demonstrate that LPNs have a questionable diagnostic value, with more disadvantaged families living outside them than within them, while they contain a higher-than-expected proportion of relatively advantaged families. We also use content analysis of university policy documents to demonstrate that universities have adopted some questionable practices with regard to LPNs, although some of these are now being actively discouraged.

Introduction

Despite the 2010 change of government, social mobility through higher education remains a policy priority in the United Kingdom (e.g. Cable 2010; Cabinet Office 2011, 2012). While the emphasis has shifted from a social justice approach of widening participation among under-represented groups to one driven more by meritocracy and maximising national competitiveness, encouraging academically-talented young people from disadvantaged backgrounds to apply to university[1] continues to prompt significant discourse and occupy large commitments from the public purse.

One of the key concepts to emerge over the last fifteen years in this regard is that of the 'low participation neighbourhood' or LPN. These are geographically defined areas that are calculated to have a lower-than-average propensity to send young people into higher education, based on historic official data. These LPNs have grown in policy importance in recent years and have come to dominate many aspects of targeting, monitoring and funding (both personal and institutional).

In this paper, we will begin by looking at how LPNs are defined, using official data to illuminate who lives in them and assess their diagnostic validity in identifying educational disadvantage. We will then use content analysis of university strategy documents to show that the use of LPNs has grown in recent years and that some emerging practices are showing evidence of overuse and misuse.

We will argue that LPNs remain poorly understood by some policymakers and practitioners and that their use has accelerated beyond their validity as a tool in understanding participation and that their use by universities and government is in danger of becoming pathological; creating new inequalities, distorting practice and undermining the very policy objectives that they are intended to support. As such, it forms a classic case of the ecological fallacy that ‘you are where you live’.

The paper will focus specifically on English higher education as each of the four nations of the UK have different systems and space precludes an exploration of each. Nevertheless, many of the themes developed in this paper apply to differing degrees across the UK - and to other countries using a similar area-based approach to higher education admissions.

A brief history of LPNs

The first incarnation of LPNs arrived, publicly at least, in 1997. This coincided both with the publication of a major review of higher education provision and the return of a Labour government that quickly made the expansion of higher education a policy priority. The Dearing Report (National Committee of Inquiry into Higher Education 1997) highlighted the sharp differences in participation rate between different social groups, and increasing demand from these groups became a key part of the government's target to see 50 percent of young people experiencing higher education by the age of 30. This agenda, which became known as 'widening participation', therefore combined the objectives of improving national economic competitiveness, while also addressing an important issue of social justice. LPNs were given life in this crucible of policy innovation and political ambition.

These early LPNs were labelled as 'Super Profiles' and were employed officially with two purposes. Firstly, they were used as a means of monitoring the admissions profiles of individual universities and the sector as a whole via the performance indicators compiled and published first by the Higher Education Funding Council for England (HEFCE) and latterly by the Higher Education Statistics Agency (HESA). Secondly, they were used by HEFCE to allocate additional funds to universities for each student recruited from an LPN. This became colloquially known as the 'postcode premium' (e.g. Times Higher Education Supplement 2001); a name that has stuck for many stakeholders and which critically continues to colour and distort understanding of LPNs. Both these functions of LPNs persist to the present day and will be explored in detail shortly.

The history of LPNs took a major step forwards in 2005 with the publication of the first POLAR^2 (Participation Of Local AReas) dataset (HEFCE 2005). This, for the first time, provided public data about the historic participation rates at a range of geographic scales, ranging from the region to local government electoral wards; it would be the latter that gained most currency. The development of POLAR was a major achievement in the marshalling of large quantities of data and fitting this into recognised geographical boundaries. It was a massive boon for practitioners and researchers and its value in this respect should not be seen as being questioned by this paper. Stakeholders were able to see graphically which areas of the country were disproportionately less likely to see their young people progress, meaning that outreach and support activities could be more efficiently targeted to meet social justice objectives.

While HEFCE were clear that POLAR data was not synonymous with educational disadvantage, there was an implication that it was capturing something not only about the people living in an area, but also of the prevailing wider social factors operating therein (e.g. quality of schooling, labour market opportunities or young people's aspirations). As such, it provided a strong steer about where activities to widen participation in higher education might most usefully be focused, although the underpinning assumptions were not explicit or tested.

The POLAR methodology allocated each ward into one of five ordinal quintiles based on the proportion of the resident population of young people entering higher education at the age of 18 or 19. The quintiles were designed to include equal numbers of young people, with Quintile 1 representing participation rates of less than 16 percent and Quintile 5 rates of over 43 percent. In other words, young people living in wards in the latter group were more than two-and-a-half times as likely to attend university than those in the former. Coloured maps were published to pinpoint the location of LPNs (generally taken to be Quintiles 1 and 2) in the POLAR1 data – a tradition that has continued through to POLAR3 (HEFCE 2012a). As a result of the equal sizing of the quintiles, LPNs comprise roughly 40 percent of the population.

POLAR quickly replaced Super Profiles as the LPN methodology of choice, both for monitoring and additional funding of student places. Another iteration with newer data followed quickly and became canonical for the next five years (HEFCE 2007a). This POLAR2 dataset also assumed another key role. A downloadable dataset was provided on the HEFCE website mapping individual postcodes against the POLAR quintiles, providing an easy-to-use means of matching individual applicants to the participation rates of their neighbourhood.

This dataset was intended, in particular, to add value to the work of Aimhigher (the government's national widening participation initiative: HEFCE 2004, 2008) and other outreach practitioners. With a list of postcodes, it was assumed it would make it easier for them to target their activities and interventions to maximise their likelihood of finding the 'right' young people – those with the ability to attend higher education, but who would not apply without various forms of support and encouragement.

However, the existence of a list of postcodes appears to have cemented in the minds of many practitioners the misconception that POLAR was able to identify low participation to a much greater degree of granularity than was actually the case. The reality of this widely-distributed dataset was that it simply assigned the same quintile number to all postcodes contained within that ward – sometimes thousands of them. This, as we shall see, is a vital form of category error.

The role of LPNs in directing outreach activity was reinforced with the publication of official guidance to practitioners which required that "resources should be targeted at learners with the potential to benefit from higher education who come from under-represented communities [...] who live in areas of relative deprivation *where participation in HE is low*" (HEFCE 2007, 8, emphasis added). Specifically, this guidance promoted the use of LPNs alongside the Index of Multiple Deprivation (DCLG 2007) to identify areas in which individuals from lower socio-economic groups might most commonly be found, although it did not evidence the assumptions surrounding the efficacy of these geodemographic markers. However, it also stressed the need for local knowledge to be used to target schools and communities and the need for targeting at an individual level within these areas, recommending that "the boundaries of the areas targeted should not be drawn too widely, or too tightly" (HEFCE 2007, 10). Providing a degree of mixed message, it simultaneously advocated a pragmatic approach while also issuing prescriptive formulae and 'criteria for success'.

Thus LPNs became, from 2007 onwards, one of the principal means by which outreach activities were targeted. For example, one typical contemporary response used the proportion of pupils from LPNs to select schools for interventions (Aimhigher West 2008), such that those from disadvantaged socio-economic groups in other schools were effectively excluded. Indeed, the ease of use of the POLAR postcodes saw LPNs become ubiquitous among practitioners.

Late 2012 saw the publication of the third instalment of POLAR data (HEFCE 2012a), although little has changed substantively from the previous iterations, beyond an updating of the data. Meanwhile, the latest guidance on targeting continues to advocate the use of LPNs, albeit as part of a wider pool of area-base and individual indicators of disadvantage (HEFCE 2012b).

What exactly are LPNs and who lives in them?

As mentioned above, LPNs are currently formed around the geography of local government electoral wards and specifically what are known as 'census area statistics' (CAS) wards. Using official data drawn from the Nomis website (www.nomisweb.co.uk), at the 2001 Census[3] there were 7,969 CAS wards in England, containing a mean of 6,166 people in each, with an average of 76 being aged 17; the CAS ward definitions amalgamate eighteen tiny wards into larger ones to provide an appropriate scale for statistical purposes.

However, there is wide variation in the size of wards. In 2001, the smallest in England was Bishopsgate ward (City of London), containing just 112 people, while Small Heath ward (Birmingham) was very much larger with 35,106. As a rule of thumb, wards are less populous in rural areas, but cover a significantly wider geographical area. The largest by area was Upper North Tyne ward (Northumberland), which covers a massive area of 46,274 hectares, or 179 square miles. Not only is there no standardised size of ward across the country, there is often no standardisation within local authority areas. Some have attempted to adapt the boundaries to equalise populations while others maintain wards of very different sizes. Even within the former, population migration can quickly lead to disparities.

The ward boundaries are therefore a relatively arbitrary set of lines on a map enclosing areas of arbitrary size. While local authorities and the Boundary Commission seek to create wards that are meaningful in terms of real communities (to meet their main purpose - i.e. the democratic representation of coherent loci of population with some sense of shared experiences), they are necessarily built on pragmatic compromises, shaped to a degree by political considerations that have no obvious articulation with higher education policy. As explored in Harrison and Hatt (2009), ward boundaries can often fail to respect on-the-ground communities. This can happen, for example, where a coherent community is too small to form a ward by itself, so it is paired with a strongly contrasting neighbouring one. Alternative, practical considerations can cleave communities into two wards; main roads are often preferred ward boundaries, even though communities may span them. In rural areas, population density is such that several whole villages and hamlets are artificially joined.

So, LPNs are not really neighbourhoods in any meaningful sense. Generally they are far too big (in population and/or area terms) to meet any reasonable definition of a neighbourhood, while there is limited articulation between the LPN boundaries and what the people living in them might consider to be their neighbourhood in the sense of 'people like us'. All in all, one could easily redraw the whole corpus of ward boundaries and create a system with at least as much coherence as the current one. Different streets, villages and potentially whole towns could move in or out of LPNs depending on the boundaries drawn.

But, LPNs are also not postcodes – and they have never been officially described as such. As mentioned above, this widely-believed fallacy seems to have been driven by two developments in widening participation policy: the creation of the Widening Participation Allocation (known informally as the 'postcode premium') and the publication of tables mapping postcodes to POLAR quintiles. Both of these have had the effect of convincing many stakeholders that LPNs are built around postcodes. However, this is fallacious. While it is obviously possible to determine which postcodes fall within a ward, the postcode data published simply assigns all postcodes within a ward to the same POLAR quintile; there is no postcode-level granularity to LPN data. Postcodes themselves contain around 20 homes and are far too small to constitute a meaningful unit for analysis. In fact, postcodes only map poorly to electoral wards and geographical approximations are used.

The danger resulting from this postcode fallacy is that LPNs are then assumed to have a far greater level of granularity than is actually the case, being viewed as a scientific means of finding the 'right' young people with high levels of personal educational disadvantage. In fact, large swathes of most major cities are LPNs, with little precision in identifying specific areas lacking a tradition of higher education. They include many affluent areas that have been paired with next-door areas whose participation rate is sufficient to see the whole ward being designated as an LPN. This issue is discussed with examples in HEFCE (2005), although it concludes that this is not a widespread problem, although it does not look in detail at instances where this might be most likely to occur (e.g. rural areas, very large urban wards and neighbourhoods in the process of being ‘gentrified’). Conversely, many areas with low participation are located outside of LPNs as they are subsumed within more affluent ones (Grove 2012a).

More widely, Harrison and Hatt (2010a) demonstrate that young people from disadvantaged households are actually to be found across a very wide mix of neighbourhoods. While LPNs are not designed to measure deprivation *per se*, the relationship between this and participation is less deterministic than might be imagined. This can be examined further using more recent data from UCAS, the 2011 Census and the POLAR2 and POLAR3 datasets, covering both young people as a whole and university applicants in particular.

Table 1 uses data from applicants aged 18 or 19 for the 2008 admissions cycle, this being the final one for which National Statistics Socio-Economic Classification (NS-SEC: Office for National Statistics 2013) data were made available. The reduced NS-SEC system used by UCAS assigned applicants to one of seven groups based on the occupation of their highest-paid parent, where Group 1 comprises professionals and senior managers and Group 7 comprises routine manual workers. While this system was flawed (see Harrison and Hatt 2010b), it represents the best publicly-available individualised data on the socio-economic status of applicants and thereby the relative degree of embedded (dis)advantage within the family. The NS-SEC data are tabulated against the POLAR2 quintile of the ward in which the applicant lives.

The principal rationale for policy interest in LPNs is that this is where educational disadvantage is concentrated and therefore the appropriate target for additional resources and interventions to promote higher education participation. Table 1 does provide some support for this conjecture. For example, applicants assigned to NS-SEC Group 1 are heavily concentrated in POLAR2 Quintile 5, but relatively rare in Quintile 1; very advantaged applicants tend to live in areas with a high historical demand for university places.

Table 1: 2008 applicants by POLAR2 and NS-SEC groups (including unknowns)

NS-SEC groups	POLAR2 quintiles							LPN?	
	1	2	3	4	5	Unk	Total	Yes	No
Group 1	2,428	5,118	7,904	13,453	21,731	1,037	**51,671**	15%	85%
Group 2	5,777	9,522	12,584	16,936	21,971	1,482	**68,272**	23%	77%
Group 3	2,886	4,783	5,919	7,362	8,890	618	**30,458**	26%	74%
Group 4	2,097	2,993	3,580	3,923	4,476	394	**17,463**	30%	70%
Group 5	1,477	2,098	2,306	2,486	2,103	173	**10,643**	34%	66%
Group 6	5,236	6,373	6,799	6,558	6,394	494	**31,854**	37%	63%
Group 7	2,821	2,878	2,910	2,378	1,980	229	**13,196**	44%	56%
Unknown	6,887	9,576	11,094	11,772	13,071	1,307	**53,707**	31%	69%
Total	**29,609**	**43,341**	**53,096**	**64,868**	**80,616**	**5,734**	**277,264**	**27%**	**73%**
'Higher' (1 to 3)	49%	58%	63%	71%	78%	71%	**67%**		
'Lower' (4 to 7)	51%	42%	37%	29%	22%	29%	**33%**		

Source: Data provided by Universities and Colleges Admissions Service

However, there are also some readily-apparent problems with the conjecture. Looking at NS-SEC Group 7, which includes the generally poorest paid and lowest status occupations, we find that they are evenly spread across POLAR2 quintiles. The largest group is in Quintile 3, but even Quintile 5 has relatively high numbers. The largest numbers of NS-SEC Group 4 (mainly comprising small trade businesses) are actually to be found in POLAR2 Quintile 5 wards, not in those designated as LPNs. Similarly, wards in Quintile 1 contain applicants from a wide range of social backgrounds, the second largest being those from NS-SEC Group 2 (comprising junior professionals and managers).

This is brought into sharper focus in Table 2, which collapses the NS-SEC data into a 'higher' socio-economic group (NS-SEC Groups 1 to 3) and a 'lower' socio-economic group (NS-SEC Groups 4 to 7), in keeping with HEFCE (2007b). These are then cross-tabulated against LPNs (i.e. POLAR2 Quintiles 1 and 2). Two important findings present themselves:

1. There are more applicants from higher socio-economic groups in LPNs than there are those from lower groups: 54 percent compared to 46 percent. This is the result of differential application rates between the two groups.

2. More applicants from lower socio-economic groups are found outside LPNs rather than within them: 64 percent compared to 36 percent. Given that LPNs contain around 40 percent of the relevant population, this is not much more than would be expected by chance.

In other words, a small majority of applicants from LPNs are advantaged, while disadvantaged applicants are most likely to found outside LPNs.

Table 2: 2008 applicants by LPN and social class (only those with known NS-SEC and POLAR2)

NS-SEC groups	LPN?			LPN?	
	Yes	**No**	**Total**	**Yes**	**No**
'Higher' (1 to 3)	30,514	116,750	**147,264**	21%	79%
'Lower' (4 to 7)	25,973	45,893	**71,866**	36%	64%
Total	**56,487**	**16,2643**	**219,130**	**26%**	**74%**
'Higher' (1 to 3)	54%	72%	**67%**		
'Lower' (4 to 7)	46%	28%	**33%**		

Source: Data provided by Universities and Colleges Admissions Service

However, it is possible to argue that this observation is simply a measure of current patterns in participation, rather than a representation of the future potential demand. There may be many more disadvantaged young people living within LPNs that currently are not applying to higher education – a currently untapped demand that universities could access. We therefore extend this analysis beyond applicants to the population at large by combining ward-level 2001 Census data with the POLAR3 dataset. In constructing Table 3, the Household Reference Person was isolated for those aged 35 to 64, representing those households most likely to play host to 18 or 19 year olds. The data on the NS-SEC category for each of these was captured and cross-tabulated against the POLAR3 statistic for the ward.

Table 3: Proportion of households in each POLAR3 quintile by NS-SEC group, for households with a reference person aged 35 to 65

	POLAR3 quintiles				
NS-SEC groups	**1**	**2**	**3**	**4**	**5**
Group 1 to 3 ('Higher')	29%	37%	45%	51%	61%
Group 4 to 7 ('Lower')	51%	47%	42%	38%	30%
Group 8 and Unclassified	20%	15%	14%	11%	9%

Source: 2001 Census and POLAR3 dataset

Table 3 demonstrates that, once again, there is a good correlation between POLAR3 quintiles and socio-economic status of the families living in them, with more families from lower groups in POLAR quintiles 1 (51 percent) and 2 (47 percent). However, it also demonstrates that this relationship is not convincingly diagnostic for locating disadvantaged young people. For example, 30 percent of households in POLAR Quintile 5 were actually from NS-SEC groups 4 to 7, with a further 9 percent from group 8 (long-term unemployed) and an unclassified group (mainly those outside the labour market – e.g. by disability). Similarly 29 percent of households in POLAR Quintile 1 were from the higher NS-SEC grouping. In other words, there is roughly a one-in-three chance of a household in an LPN being from a higher socio-economic group, while approaching one third of households outside LPNs were from a lower socio-economic group

Taking this a step further, the number of 17 year olds in each ward was extracted from the 2001 Census data. As there is no data available on the implied NS-SEC grouping of children, this was estimated by dividing the number of 17 year olds by the proportion of families with children (of any age) within the three NS-SEC groupings used in Table 3. This provides a reasonable estimate of the social origins of the total pool of potential higher education entrants (in the broadest sense) on a ward basis given differential fertility rates between different social groups. Cross-tabulating these against the POLAR3 dataset provides an estimate of the number of 17 year olds living inside and outside LPNs, subdivided by NS-SEC grouping. This is presented in Table 4.

Table 4: Estimated number of 17 year olds in each POLAR3 quintile by NS-SEC group

	POLAR3 quintiles				
NS-SEC groups	**1**	**2**	**3**	**4**	**5**
Group 1 to 3 ('Higher')	28,345	36,965	44,798	52,285	65,961
Group 4 to 7 ('Lower')	68,077	65,374	62,185	56,698	50,741
Group 8 and Unclassified	20,046	15,041	14,758	11,302	9,279

Source: 2001 Census and POLAR3 dataset

Subdividing the 601,855 17 year olds from the 2001 Census in this way, we find that an estimated 133,451 from lower socio-economic groups were living in LPNs. However, 169,624 were living outside of LPNs. Similarly, 65,310 of 17 year olds living within LPNs were actually from higher socio-economic groups – about 28 percent of the total living in these wards. There are two key findings from this analysis, therefore:

1. That more 17 year olds from lower socio-economic groups live outside of LPNs than live within them: 56 percent compared to 44 percent. Again, this is only slightly different from the 60 percent expected by chance.
2. That, contrary to applicants, there are more 17 year olds from lower socio-economic groups in LPNs than those from higher groups, although the latter comprise over one-quarter of the total.

Pulling the data on young applicants and the general population of 17 year olds together and summarising, a clear picture emerges. In both instances, there are more young people/applicants from lower socio-economic groups living outside LPNs than living within LPNs; in the case of applicants, nearly twice as many. In other words, there is relatively little targeting power to be derived from using LPNs to 'find' such young people. For example, 39 percent of all 17 year olds live in LPNs, but 44 percent of those from lower socio-economic groups; they are more likely to be living in LPNs, but not by a very large margin.

It is important, at this point, to remember that there is a third row within Tables 3 and 4, comprising the unemployed and other unclassifiable households. These are likely to be at least as educationally deprived as the lower socio-economic group; by definition, they cannot be categorised, although it is notable that this group is correlated with POLAR3 and concentrated

within LPNs. This does, to an extent, impact on the analysis above as it almost certainly increases the number of deprived young people within LPNs. Notably these unclassifiable households are not included in the official statistics on participation (e.g. as published by HESA).

The analysis above demonstrates that there is considerable scope for 'leakage', where targeting of resources by LPN actually finds young people from higher socio-economic groups (Thomas 2001; Hatt, Baxter and Tate 2005). Among the general population, 17 year olds from lower socio-economic groups do predominate slightly, but among university applicants there are actually more drawn from higher groups in LPNs than lower groups. This represents a strong potential for misdirection, as will be discussed in more detail shortly. Indeed, guidance provided by HEFCE (2007b, 2008) was intended to counter this leakage and ensure a more cost-effective allocation of resources.

All in all, these findings must cast doubt on the use of LPNs as a means of targeting resources to combat low participation in higher education and the associated educational and economic disadvantage that underpins it. Indeed, it is useful to reflect on what value an historic measure of participation has for directing resources and policy if it is not very strong correlate with the inequalities that militate against progression to higher education.

The contemporary uses of LPNs

Since their inception, and especially since the creation of POLAR, LPNs have accumulated a number of uses within the higher education sector, some of which have been touched upon already and all of which deserve a critical examination.

1. Production of performance indicators. LPNs (comprising Quintile 1 only in this case) are one of the three key performance indicators published annually by HESA for each university and collectively across the sector (HESA 2013). They are published both in a raw form and in comparison to calculated benchmarks of what a university with that entrance requirements, subject mix and location should expect. In some ways, LPNs are the most reliable of the three in that it is simple to collect a student's postcode and to map this onto POLAR quintiles. The importance of the HESA performance indicators and benchmarks has

declined somewhat in recent years, but it remains the authoritative data source on the social profile of universities. For example, the 2010/11 data shows that the University of Sunderland recruits 26.9 percent of its young full-time degree students from LPNs, compared to just 2.5 percent at the University of Oxford. While there are no penalties for universities failing to make year-on-year progress on recruiting from LPNs, they are increasingly being used for target setting within universities.

2. Monitoring application trends. The HESA datasets take around 18 months to emerge, reliant on data being provided by universities and a period of processing and validation. The initial data on applications to higher education is provided through the data collected by UCAS as part of the admissions process. Until 2009, the primary data collected and reported related to the occupation of an applicant's parents through NS-SEC. However, due to on-going concerns about the reliability and validity of this data (DBIS 2011a), this has recently been dropped in favour of LPNs using the POLAR methodology (UCAS 2012). The ability to directly map postcodes (collected on the application form) to LPNs means that this more readily available data is currently preferred. In future, therefore, media coverage around the social profile of applicants will relate to LPNs.

3. Allocating student funding. The use of geographical areas to allocate discretionary funding to individual students dates back to the Opportunity Bursaries launched in 2001 (DFEE 2000). In this instance, it was whole local authority areas that were targeted, although not necessarily those with the highest need (Hatt, Baxter and Harrison 2003). Similar targeting continued with the introduction of the new wave of student bursaries in 2006 under the Higher Education Act 2004, with many universities offering additional funding to students in certain postcodes – either by 'localness' or perceived need (Harrison and Hatt 2012). This has now begun to articulate with the use of LPNs, with those living within these areas being offered bursaries preferentially those living outside them. The formative evaluation of the new National Scholarship Programme (NSP) award also found that LPN and other area-based data was used by over a third of universities to determine additional qualifying criteria for their allocation (Diamond et al 2012).

4. Allocating university funding. As outlined above, universities have been financially rewarded (or compensated, depending on one's perspective) for recruiting students from

LPNs since the early 2000s. This funding stream has been reconfigured over time, renamed as *Widening Participation Funding* and using the POLAR methodology for allocation (for younger students, with mature students being allotted to similar ward-based quintiles). A total of £128m was ringfenced for this purpose in the 2012/13 academic year, amounting to an average of around £1m per university, although the figures clearly vary dramatically between universities, with many attracting £2m or more. This is justified as being to "recognise the extra costs associated with recruiting and supporting students from disadvantaged backgrounds who are currently under-represented in higher education" (HEFCE 2012c: 27). It is proposed that this should continue into 2013/14 and beyond, although rebranded as *Student Opportunity Funding*. As headline figures, universities are allotted an extra £356 for every full-time undergraduate recruited from POLAR Quintile 1 and £178 for every student recruited from POLAR Quintile 2, regardless of other variables describing disadvantage; there is a London uplift and different figures for part-time undergraduates. There is therefore a clear, if small, financial incentive for universities to recruit preferentially from LPNs, regardless of the actual disadvantage of the individual student.

5. Targeting outreach activities. As noted above, HEFCE (2007b) established the principle that LPNs should be used in the targeting of outreach activities, alongside other area-based indicators and local knowledge. This paradigm remains dominant (HEFCE 2012b) and has become strongly embedded in some universities, with resources being strongly directed at LPNs in order to meet participation targets laid out within Access Agreements. We will return to this in more detail shortly.

We therefore assert that LPNs have become deeply ingrained within the collective psyche of the higher education sector. They are used to monitor universities, allocate funds and target activities. They are used as a broad proxy for disadvantage, despite the foundations of this relationship being questionable. We will go on to argue that these roles collectively run the risk of undermining the principles of widening participation. However, we now move to document how LPNs have become strongly embedded in institutional widening participation strategies in recent years.

The uses (and misuses) of LPNs by universities

The implied pressure on universities to make use of LPN data has grown steadily, through its use in league tables, targeting guidance and funding mechanisms. The use of LPN data has also been galvanised by new initiatives, such as the NSP, that oblige universities to focus or target their resources ever more tightly (Department for Business, Innovation and Skills [DBIS] 2011c, HEFCE 2011). In response, HEFCE's guidance for the operation of the NSP in 2014/15 warns that POLAR data is "suitable for funding and policy purposes, but not suited to making decisions based upon individuals", although it goes on to say that this is because "students not living in low participation areas can be disadvantaged in other ways, and vice versa" (HEFCE 2013, 12) rather than being explicit about the shortcomings of LPNs in targeting the most disadvantaged.

Since 2006, English universities have been mandated to lodge an Access Agreement with the Office for Fair Access (OFFA) as a condition of setting tuition fees above a minimum point. In these Agreements universities state how they will use a proportion of the additional fee income to support access for applicants from under-represented groups who might otherwise have been deterred from applying. The OFFA guidelines for the production of new Access Agreements for 2012/13 (OFFA 2011; DBIS 2011c) also enhanced the status of, and reliance on, LPNs as tools for assessing progress on access, while the most recent guidelines for 2014/15 and beyond still highlight LPN as one under-represented group for identifying cohorts for measurable progress (OFFA 2013, 40) and particularly for the identification of outreach cohorts (OFFA/HEFCE 2013, 10).

Indeed, it is clear that universities have 'bought into' the use of LPN data. It is certainly more convenient a performance indicator data source for universities to use, compared to NS-SEC data which is known securely for only 81 percent of UK students, against over 99 percent for LPN data (HESA 2013). One Access Agreement noted that while outreach would be targeted at both those considered to be from lower socio-economic backgrounds and individuals from LPNs "only those from LPNs can be accurately identified at the pre-application stage (by postcode of domicile) in a way that exactly replicates how they are identified and measured for HESA's performance indicators" (Newcastle University 2012).

Analysis of OFFA of Access Agreement returns for 2010/11 (OFFA/HEFCE 2012) shows the extent of the use of LPN data by universities when setting their milestones and targets. Table 5 shows

the proportion of universities of different types operating in this way, with the post-1992 universities (i.e. those that achieved university status since 1992) being those with lowest status and having the strongest tradition in widening participation activity, while the pre-1992 group have higher status. Of the 95 universities with available data, 65 (68 percent) use LPN data, including 71 percent of post-1992 universities. However, the use of LPNs by the 63 percent of pre-1992 universities is perhaps more significant for two reasons: they tend to have more funds to distribute to students from under-represented groups (Callender and Jackson 2008; McCaig and Adnett 2009; McCaig 2011); and access to these universities, because such universities are prestigious in employability terms, is potentially more likely to increase social mobility. Therefore it is arguably even more important that any intervention to widen participation is accurate at picking up only those most in need of help.

Table 5: Use of LPN in milestones and target setting by English HEIs in 2010/11

Category	N	Number using LPNs	%
All English universities	95	65	68%
Post-1992	57	41	71%
Pre-1992	38	24	63%

Source: Adapted from OFFA/HEFCE (2012)

LPNs are used (and possibly misused) by universities in three main areas, all of which can be found in Access Agreements; the allocation of outreach expenditure; the selection of outreach priorities; and the allocation of financial support packages such as NSP and universities' own bursaries and scholarships. The clearest indication of this tendency is derived from content analyses of a sample of Access Agreements over time and between university types (McCaig and Adnett 2009; McCaig 2012, *forthcoming*) and in the evaluation of the NSP (Diamond et al 2012); we turn to these now.

Access Agreements and the impact of the National Scholarship Programme

The White Paper *Students at the Heart of the System* (DBIS 2011b) introduced new funding arrangements which included a significant rise in maximum tuition fees and a removal of the obligation on universities to provide means-tested bursaries to all students that qualified. The Coalition Government – rhetorically, at least – continued to support wider access to higher

education, reiterating that "Social mobility, fair access and widening participation should be a key strategic objective", however it also signaled that universities should begin "looking at improved targeting of outreach" (DBIS 2010: 2). Universities were obliged to sign-up to the National Scholarship Programme which offers significant financial support in the form of fee waivers or cash bursaries (DBIS 2011c). However NSP awards go to far fewer recipients than the previous generation of bursaries which were awarded to all low-income students and amounted to an average of over £1,000 per year of study (Callender 2010).

The NSP thus shifts the emphasis from supporting all who enrol from poorer backgrounds to targeting support at only the most 'needy' of cases, and leaves considerable room for universities to target specific cohorts or to incentivise applications to specific programmes of study. As far more students at post-1992 universities qualify for full state support by family income measures (41.3 percent) than those at pre-1992 universities (21.2 percent) funds for widening participation have to be spread more thinly in post-1992 universities and this highlights the importance of any mechanisms by which financial support is rationed, such as LPN data (OFFA 2012; Grove 2012b). The NSP has a distortion effect on WP spending, particularly among post-1992 universities, because allocations were (in the first two years of the scheme) based on size (student numbers) rather than need (proportion of poor students). The formative evaluation of the NSP (Diamond et al 2012) found that LPN and other area-based data was used by over a third of universities to determine additional qualifying criteria. Similarly, in-year analysis by HEFCE finds that of the 184 NSP schemes, 80 of them are run by universities that have had to use additional criteria to differentiate between deserving applicants, 37 of which have used LPN data for this purpose (OFFA/HEFCE 2013, 42-43).

There is further scope for the use of LPNs in the second and third years of the NSP as the number of allocated awards is increased. Some, usually pre-1992 universities, will have more awards than they have students that qualify and may be tempted to use LPNs to easily identify a wider group of recipients; conversely the match-funded requirement of NSP, which diverts funding away from low-income students, may also increase the use of LPN data by post-1992 universities. Such a multiplier effect in the use of LPNs would increase the proportion of state WP funding that is *not* going to the most financially-needy students. The latest OFFA/HEFCE monitoring report recognises this temptation and notes that LPN data "is not an appropriate determining criterion of eligibility in its own right" (OFFA/HEFCE 2013, 13).

LPNs within Access Agreements

Content analysis of a sample of 20 universities' Access Agreements over time (2006/7 and 2012/13) shows the evolution in the use of LPN data to allocate student support and identify worthy cohorts for outreach (McCaig and Adnett 2009, McCaig 2011, McCaig forthcoming). The sample consisted of ten large pre-1992 universities and ten large post-1992 universities. A close reading of the text of the most recent agreements illustrates a poor goodness-of-fit between LPN and those from lower socio-economic backgrounds (as represented by NS-SEC Groups 4 to 7). This was noted within several pre-1992 universities' Access Agreements, whose authors had apparently not been aware that LPNs have limited articulation with financial need or other forms of disadvantage. One noted that although the intake of students from LPN had risen steadily over the years from 2005 and 2008, thereafter "LPN intake for 2009 disappointingly fell by half a percentage point. It is not clear why and we note that this runs counter to a significant rise in the intake of students from low-income backgrounds for the same year" (University A). Another, reporting on its progress towards benchmarks, noted that while the proportion of applicants from LPN backgrounds had increased, those from NS-SEC Groups 4 to 7 were declining. In fact, along with NS-SEC Groups 4 to 7, applications were declining from those students from low-performing schools and minority ethnic groups suggesting that LPNs were a poor mechanism for identifying the most under-represented groups (University B). University C recognised this by offering an online 'look-up tool' which allowed applicants to check if their postcode was actually in a LPN. Another (perhaps inadvertently) acknowledged the disparity between LPNs and actual people from lower socio-economic backgrounds when explaining its lack of progress against milestones:

> "It should be noted that when setting milestones there are a number of contextual factors that create additional challenges. 75% of the current home students the University recruits come from locations that are no more than two counties away from [county]. The impact of recruiting from these relatively affluent areas can be seen in the University's performance in the HESA Performance Indicator for entrants from SEC backgrounds 4-7 and low participation neighbourhoods" (University D).

However, HEFCE's POLAR3 map shows 11 wards in Quintile 1 and another 12 in Quintile 2 in the immediate area. The Agreement cites its outreach work offering support for various under-

represented groups (e.g. minority ethnic groups and care leavers), but states that it looks for low-income students only within LPNs (University D); the university's disappointment in identifying those from lower socio-economic groups appears to be compounded by its over-reliance on LPN data.

Living in an LPN was found to be increasingly used by universities too in determining which under-represented groups to target with their outreach activity. Comparing Access Agreements from 2006/07 and 2012/13, it emerges that LPN data was cited more often in the latter agreements by both pre-1992 and post-1992 universities (see Table 6), and that the greatest increase in use is among pre-1992 universities (McCaig 2012; McCaig *forthcoming*). Table 6 illustrates both the growth in overall uses of LPN in Access Agreements and the wider range of ways in which LPN data are used to calculate performance and to allocate opportunity in either outreach or financial support terms. While the use of LPN data for benchmarking against targets or milestones, which was widespread in 2006, has grown further (18 out of the 20 sample Agreements now use it as a measure) and the uses for allocating financial support and identifying outreach targets remain important in a minority of Agreements, there are a series of categories of use that are new in the most recent set of Access Agreements, mainly within pre-1992 universities.

Table 6: growth in uses of LPN data within Access Agreements between 2006 and 2012

	Milestones/ benchmarks	**Financial support**	**Outreach targeting**	**Contextual data**	**Retention**	**Mature/ PT students**	***Total***
2006/07 Access Agreements							
Pre- 1992 Total	**7**	**1**	**4**				**12**
Post-1992 Total	**7**	**1**	**3**				**11**
2012/13 Access Agreements							
Pre-1992 Total	**9**	**2**	**4**	**2**	**5**	**2**	**24**
Post-1992 Total	**9**	**2**	**2**		**1**	**1**	**15**

Discussion and conclusion

In the previous section, we have demonstrated the growing ubiquity of LPNs within contemporary policy around widening participation and fair access to higher education. In the 2010/11 cohort of Access Agreements, they were being used by over two-thirds of universities and the most recent evidence from 2012/13 Agreement is that this trend has continued. In particular, it has grown within pre-1992 universities that have the poorest recruitment from lower socio-economic groups and have made the least progress over the last decade (Harrison 2011).

There is also evidence from the text of the Access Agreements to suggest that some universities do not adequately appreciate the meaning of LPNs and their relationship with socio-economic status and other markers of disadvantage. They are increasingly used to allocate resources, both in terms of targeted outreach activities and financial support to students. We have argued that this is likely to occur more often due to the configuration of the NSP, with higher status universities using LPNs to find additional disadvantaged students to allocate their excess funds towards, while lower status universities use them to filter the excess demand from students.

Our critique is not meant to undermine the use of data to identify cohorts that can be additionally helped, either at the outreach stage, in supporting applications or throughout the student journey. However, with so much of the available resource dependent on an imperfect method of identifying need it must bring into question the efficiency of the policy transmission from intent to delivery.

For example, we have demonstrated that LPNs are not a strongly valid (in the statistical sense) means of identifying young people from lower socio-economic groups, both in terms of current applications and the general population. Indeed, there are more disadvantaged young people living outside of LPNs than within them – the picture is even more stark for applicants. Targeting LPNs does yield a slightly improved probability of 'finding' the 'right' students, but it does not have the predictive power than one might assume from their use by universities and governmental bodies like HEFCE, OFFA and HESA.

What are the ramifications of this misunderstanding? It is impossible to know with certainty, as the nuts-and-bolts use of LPNs is largely invisible in the everyday decisions made within

universities about, for example, which schools to engage with, which young people to admit to summer schools or which students to provide with a bursary when they are already over-subscribed. We are therefore only in a position to hypothesise on the responses that universities might reasonably make to the pressure and incentives to use LPNs within those decisions.

Firstly, we know that pressure exists. It exists at the institutional level both in the form of the Access Agreements and the need to demonstrate progress on fair access as the *quid pro quo* for higher tuition fees, and through a more implicit need to conform to the expectations of the HESA benchmarks and the implied league tabling. There is also an active financial incentive through the Widening Participation Allocation that specifically rewards universities for their success in recruiting from LPNs. While the *per capita* figure is modest, the aggregate is a significant sum for many universities. This incentive does not, however, respect the actual circumstances of individual students and is as readily secured though the 54 percent of applicants from LPNs who are in positions of relative advantage.

Secondly, there is convenience and certainty to the perceived construction of LPNs that is likely to be attractive to those making chalkface decisions about outreach, financial support or even admissions. The temptation to follow the *non sequitur* that equates LPNs with disadvantage in the absence of other data must be strong – something that we have witnessed firsthand in our own interactions with practitioners. The presumed scientific basis and granularity for LPNs is an attractive certainty in an otherwise complex field beset with data difficulties (Passy and Morris 2010; Harrison 2012).

LPNs are therefore a classic type of postcode lottery, but with the twist that the young person almost certainly does not know which side of the line they are on until it is too late. Disadvantaged young people living outside an LPN are less likely to get outreach activities targeted at them and less likely to get discretionary financial support than their peers within LPNs – and possibly even than the many advantaged young people living within an LPN. The sector has inadvertently adopted an approach where people living in an LPN have themselves become the under-represented group, rather than LPNs being a proxy for more real forms of social, economic or cultural disadvantage in terms of progression to higher education.

While this may feel very unfair at the individual level, there is a more strategic point to be made too. Even after the health warnings about the use of LPN data to allocate individual finance (HEFCE 2013; OFFA/HEFCE 2013) it is still encouraged for the identification of outreach cohorts and for use as a monitoring measure. An over-emphasis on LPNs for targeting not only misses tens of thousands of people that it should be targeting, but it also runs the risk of wasting scarce resources on encouraging young people from over-represented groups. The net result in the future may prove to be slow progress on changing the social mix of higher education, particularly within elite universities, with the deadweight of relatively advantaged young people from LPNs working to cancel progress among the disadvantaged. As noted above, universities can report positive changes in recruitment from LPNs without seeing any significant difference in the actual situations of the young people coming in by other measures such as social class or family income.

In conclusion, we are not arguing for the abandonment of LPNs. They serve a useful purpose as a simple and reliable (in the statistical sense) proxy for a broad concept of historical educational disadvantage. They are useful in identifying the sorts of areas in which young people with the potential to enter higher education with additional support might be found. However, where their use becomes pathological is when recruiting students from LPNs becomes the goal in its own right. We are arguing, therefore, for a more nuanced approach to the issue, both from universities and (led by) governmental bodies. This could be in the form of data with greater granularity or compound data that works in other area-based proxies for disadvantage that actually impact on schools or individuals, rather than simply reflecting historical patterns of participation.

For example, as most outreach work is mediated through schools, identifying those that are not propelling young people to university at the expected rate for the school profile might be more useful than enumerating those in LPNs or with the most pupils from LPNs. Targeting this mismatch between qualifications and behaviour may be more logically coherent than undertaking outreach activities in schools where nearly all the young people with the appropriate qualifications are progressing already.

Similarly, the Index of Multiple Deprivation (and the related Income Deprivation Affecting Children Index) define much smaller geographical areas and include a wide range of data. These could be used to target more resource-intensive activities to challenge longstanding patterns of educational deprivation, improving schools and increasing the number of young people achieving at a level

that is commensurate with participation in higher education. They could also be used as a more effective source of contextual data about individual applicants.

We particularly feel that the targeting of bursaries and scholarships at LPNs without other filtering criteria is an unfair practice that should be actively discouraged, as is beginning to be officially recognised. There is a clear need for an individual-level marker to determine access to bursaries and scholarships where there is excess demand and the existing means-testing system, while imperfect, would appear much more fair.

All in all, we are calling for a refocusing back to the components of a young person's situation that might dissuade them from achieving their academic and career potential and an acceptance that 'you are where you live' is not a helpful concept in respect of many young people.

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[1] For simplicity, the word 'university' is used throughout to refer to any institution offering higher education.

[2] 'POLAR' will be used to refer to the methodology, with 'POLAR1', 'POLAR2' and 'POLAR3' referring to the three datasets released to date, from 2005, 2007 and 2012.

[3] The 2001 Census data is reported throughout as this articulates fully with the ward boundaries used in the POLAR2 and POLAR3 datasets, unlike the 2011 Census data. Investigation of the data suggests no particular changes between 2001 and 2011 that would compromise the analysis.