Clear vision: a step towards unravelling student recruitment in English universities?

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1. Introduction

1.1 Student Recruitment

It is self-evident that student recruitment is central to the financial health of a university, and that this in turn influences the portfolio of programmes offered and the resources devoted to learning, teaching and research. This is particularly important in the post-pandemic landscape that Higher Education currently finds itself in. The increase in the numbers of school leavers, coupled with the declining economic situation, has seen a significant increase in the number of applicants to undergraduate university programmes. Whilst this might seem to be positive for the sector, the freeze on tuition fees that home students may be charged has meant that many universities' finances have come under the microscope (KPMG, 2019) and it means that recruitment has become even more vital in order to ensure that adequate funds are available for the organisation. The principal vehicle for undergraduate domestic student applications within Higher Education in the United Kingdom (UK) is the Universities and Colleges Admissions Service (UCAS), which is an independent charity. Students can explore personalised options, compare programmes, and apply for universities and colleges through the UCAS Hub prior to exam results' release, this differs from many other countries where a higher degree of certainty is present as students apply post release of results. In the UK, once exam results are published it will be known whether they have achieved the required grades for them to go to their university of choice. This initial stage is referred to by UCAS as the 'Main scheme', and so this term is used throughout for consistency.

For those not meeting the entry requirements, or who decide to revisit and change their choice, there is the annual round of Clearing which allows applicants to apply for university or college programmes that have spaces available in an attempt to garner more student numbers. Clearing also enables students who did not originally apply for university the opportunity to apply for programmes after receiving their exam results. In a small number of cases, students who achieved higher grades than predicted can apply to a programme with higher entry criteria with the permission of their original choice of destination, previously termed by UCAS as 'adjustment'. Clearing is an intense process and can demand significant resources from universities; who are operating in the knowledge that not filling vacancies is likely to lead to a shortfall in income.

Individual universities' dependency on Clearing will vary, with the general assumption being that the more prestigious an institution, the less likely the reliance on Clearing. However, there can be significant variations between programmes within a university and also for different Schools and Faculties, even at those that are viewed as 'higher ranked'. Surprisingly, the degree to which this occurs is a topic that has been little researched (Baxter and Hatt, 2010).

1.2 Efficient Student Recruitment

The number of programmes at an individual university can run into the hundreds, and it would be naïve to assume that reliance on recruiting students through Clearing will be uniform. The amount of available data relating to each programme will not be insubstantial. Therefore, university leaders are faced with the challenge of trying to infer patterns and lessons from tables of data as well as local intelligence, in order to make both tactical and strategic decisions to address priority improvement needs in respect to student recruitment and programme continuation. Accordingly, the questions arise as to how to define the efficiency or performance of the (English) university student recruitment process(es), and then how to measure and monitor it? Given its conceptual nature and the range of factors in play, there are a limited number of options for proxy measures; having pragmatic regard for the availability and quality of relevant data which will enable inter-university

and intra-university comparisons. The fact that different universities and programmes have different numbers of student places and applications led to the decision that the research should adopt a benchmarking approach utilising the most relevant quantitative data available. Benchmarking in Higher Education is well-established (see below) but this research would seek to address a clear gap.

Asif (2015) highlighted the criticality of determining exactly what to benchmark. The first option for quantitative analysis is economic, with 'Recruitment Expenditure per Student Recruited' and 'Recruitment Expenditure per offer to Student' being considered. However, as discussed in Section 5.4.1 below, how different universities might define 'Recruitment Expenditure' and calculate it from their budgetary data will vary; and such data is unlikely to be released because of commercial sensitivity. Therefore, focus was given to how best to utilise available data relating to the student recruitment process itself. The premise applied was that the most 'efficient' student recruitment process would be one where a university has N places for an individual programme, makes offers to N students and all of them accept the offers and enrol on that programme, i.e. 100% of Main Scheme student offers were accepted, and 100% of places were filled through the Main Scheme. In reality, such a situation is extremely unlikely, due to the multitude of variables that can influence the final destination of a student; such as exam results, changing preferences for programmes and personal circumstances. It should also be noted that in some cases popular programmes are asked to 'over recruit' to compensate for other, less popular programmes within any given university. Nevertheless, it is inferred that a heavy reliance on recruiting students through Clearing is 'inefficient' because it can involve a great deal of resources and process, and there is uncertainty about whether the programme will recruit its full number of students; with shortfalls resulting in reduced funding and potentially, unviable programmes. Equally, it is inferred that there may be inefficiencies if a programme makes a large number of offers to students and then only a small percentage accept the offer. Another concern would be if a programme found that students were firmly accepting its offer, but then many failed to follow through and actually take up their place.

Additional factors to be borne in mind in relation to Clearing are that the exam results (and by inference the quality) of students accepted through Clearing will often be relatively lower, which will impact on the average entry tariff for the university, a key metric when performance league tables are compiled. This is particularly important given the recent prioritisation of the OfS on monitoring universities attainment of the B3 conditions of registration (OfS, 2022).

The chosen methodology was the *Nomogramma di Gandy*, which has been successfully used to benchmark staff turnover in Higher Education (Gandy *et al.*, 2018) and for investigating UK undergraduate student migration (McClelland and Gandy, 2012). This diagrammatical approach demonstrates patterns of mobility, churn and turnover; highlighting groupings and outliers. This 'high-level' methodology then facilitates the identification of where further research and/or action might be required. It was chosen because its design would record a programme as being maximally 'efficient' (as defined above) as being at point (100,100), and it would clearly set out the relative utilisation of Clearing and the acceptance rates of offers made for multiple programmes (or universities) on one single diagram.

There were two stages to the research: the first encompassed an in-depth analysis of one individual 'pilot' university; and the second examined the potential for inter-university comparisons.

This article aims to answer the following research questions:

1) How might currently available student recruitment data be better analysed to give greater insight to recruitment efficiency/performance, and inform universities' strategic and tactical decision-making?
2) Can the *Nomogramma di Gandy* methodology utilise currently available data to enable greater insight to recruitment efficiency/performance? (I.e. can it fulfil the requirements of (1)?)
3) To what degree are different universities and different programmes dependent on recruiting students through the Clearing process? (i.e. Inter and Intra comparisons)

4) Is it possible to benchmark universities' relative efficiency/performance in recruiting students, with particular focus on their dependency upon the Clearing process?

The article is structured in a traditional manner with a literature review looking at the currently available work, followed by a methodological section. Results and discussion have been separated out and conclusions have been drawn from the study at the end of the article.

2. Literature Review

2.1 Student Recruitment

The various processes involved in student recruitment within English Higher Education are not well served by any in-depth literature analysis with the majority of literature focusing on a specific aspect such as recruitment linking with the identity of the organisation (Dumas-Hines *et al.*, 2001). The under recruitment of specific groups is the most commonly research area (Frølich and Stensaker, 2010), something that is of particular interest in England since the updated B3 criteria of measurement (DfE 2022) has been issued. It's also important to note that literature stresses recruitment in the sector should not be viewed as an open market, instead there are multiple reasons for students' choices of destination (Holdsworth, 2009)

What the established literature stresses is the importance of recruitment to both the organisations continued success, but also the future prospects for the student (Tomlinson, 2008) and so getting it right is vital. This links to the changing nature of the dynamic between student and organisation. Prior to the normalisation of higher fees proposed by Browne (2010), students' main focus was on their study but the advent of the student being seen as a consumer of Higher Education (Tomlinson, 2017) has meant that the student journey, which includes recruitment, has become a more involved process (Temple *et al.*, 2014).

Universities use of Clearing has been the subject of a number of studies with the stress being on the need to market the university (Mogaji, 2016), however, there is evidence that universities look

beyond mere recruitment to ensure that the performance of students recruited in this way is of a sufficient quality (Baxter and Hatt, 2000). There have been concerns that students recruited late on in the recruitment cycle are not necessarily ready for the rigour of higher education, something that has been acerbated by the recent pandemic (Ali, 2020).

2.2 Benchmarking in Higher Education

There is a long history of benchmarking in Higher Education, covering a wide range of topics that relate to student recruitment and performance; with university rankings being ubiquitous both nationally and internationally (Complete University Guide, 2023; Guardian, 2023; Times Higher Education, 2023). There is now an acceptance across the sector that benchmarking can enable improvements in academic excellence by means of comparison and assessment; process performance measurements can bring considerable outcomes of enhancement, improvement and transformation, using best practices, in Higher Education systems (Tee, 2016; Tasopoulou and Tsiotras, 2017). A major focus has been the effectiveness of teaching and widening participation (Pursglove and Simpson, 2007; Advance HE - Equality Challenge Unit, 2012; Higher Education Statistics Agency, 2023a), student satisfaction (Da Silva *et al.*, 2022; Tribal Group, 2022), and organisational agility (Menon and Suresh, 2021). The Higher Education Statistics Agency (2023b) undertakes a key role in monitoring the Higher Education sector across a whole range of topics: Students (numbers by university and subject of study; personal characteristics; widening participation; where they come from; where they study; what they study; their progression rates and qualifications); Staff; Graduates; Finances; Business and Community Interaction; and, Estates Management.

Tee (2016) reviewed the benchmarking practices among UK universities and presented the types of performance indicators they adopted. Tee stressed that good benchmarks need to be capable of analysis both at programme level as well as institutionally (which is what this research does). And although Manzini and Lazzarotti (2006) benchmarked information systems supporting university administrative activities, unfortunately no research has investigated the administrative processes associated with student recruitment. However, the *(Inverted) Nomogramma di Gandy* methodology was successfully applied to staff turnover to demonstrate wide internal variations between university departments. It highlighted particularly high turnover for research staff (influenced by the

use of fixed-term contracts) which could adversely impact on a university's research capacity, thereby in turn presenting risks to the achievement of its strategic aims and objectives (Gandy *et al.*, 2018a, 2018b). This in part gave the authors confidence that it had the potential to support the research.

At this point, however, it should be noted that whilst benchmarking as a process is embedded within the sector (Jackson, 2001), its use when examining the recruitment of students is significantly underdeveloped and this research can address that lack of knowledge.

3. Methods

3.1 Pilot University Research

The initial research involved a large post-1992 UK Higher Education institution with five academic faculties (hereafter referred to as the 'pilot university'). Universities collect a great deal of data in respect of the student recruitment cycle, and for the pilot university the following were selected from 15 available data items as being most relevant to the research question. They were analysed for its 2018 intake for each Faculty, School, Academic Programme, Degree (Honours and Foundation) and Programme. (A Foundation degree is a combined academic and vocational qualification in UK Higher Education, equivalent to two-thirds of an Honours Bachelor's degree, introduced in 2000):

Offers Made Through Main Scheme; Firm Accepts From Main Scheme Offers; Total Enrolled; Firm Accepts From Main Scheme Offers That Enrolled.

The data explored in this research was gathered prior to the Covid-19 pandemic and focuses on the 2018 student recruitment data. The pandemic led to a number of changes in the application cycle as a result of evolving government policy on 'A' Level/equivalent qualifications and student number caps.

Taking the above views of 'efficient' student recruitment three statistical measures were considered relevant and appropriate. 'A' is the 'Percentage of Students studying at a university that came

through Main Scheme and not through Clearing'; 'B' is the 'Percentage of Students offered a place in Main Scheme that accepted and came to a university'; and 'C' is the 'Percentage of Students firmly accepting a place in Main Scheme that came to a university'. The reasons for these three statistical measures were that: 'A' provides an insight into the degree to which each programme relies on recruiting students through Clearing; 'B' arguably more reflects the market place, by looking at how many of the students offered a place ended up coming to the university; and 'C' provides an insight into the degree to which those firmly accepting the university's offer actually arrived. The related formulae are as follows:

A = Percentage of Students studying at a university that came through Main Scheme and not through Clearing =

Main Scheme Offers That Enrolled (i.e. Arrived) x 100/ Total Became Enrolled (i.e. Arrived)

B = Percentage of Students offered a place in Main Scheme that accepted and came to a university =

Main Scheme Offers That Enrolled (i.e. Arrived) x 100/ Offers Made Through Main Scheme

C = Percentage of Students firmly accepting a place in Main Scheme that came to a university =

Main Scheme Offers That Enrolled (i.e. Arrived) x 100/ Firm Accepts From Main Scheme Offers

Educational leaders within the pilot university confirmed that all three were relevant when appraising student recruitment. Consequently, two sets of diagrams were provided for each area of interest. The first relates to "Offers" and compares 'A' and 'B', with the latter as the X axis and the former as the Y axis. The second relates to "Firm Acceptances" and compares 'A' and 'C', with the latter as the X axis and the former as the Y axis. The fact that the two diagrams have the same Y axis means that when one looks at them alongside one another, it appears that the points shown on the "Offers" diagram 'slide along' to the right on the "Firm Acceptances" diagram. This is because the

denominator for “Offers” (viz. Offers Made Through Main Scheme) is obviously going to be a greater number that the denominator for “Firm Acceptances” (viz. Firm Accepts From Main Scheme Offers).

3.2 Inter-University Comparisons

Whilst the application of the *Nomogramma di Gandy* methodology described above enables in-depth investigation within an individual university, educational leaders will also wish to see how their university compares with other universities, not least those that are deemed to be their peers and competitors. Therefore, UCAS were approached to establish whether the relevant data could be provided for a range of universities for the same intake as for the pilot university. UCAS were very helpful but highlighted that the data that they collected was not identical to that available to the pilot university internally. This was due to UCAS only collecting data that is relevant to its purposes. Through a process of liaison and debate between the researchers and UCAS it was mutually agreed that the available UCAS data which was the ‘best fit’ to correspond with that used within the pilot university were the following three data items:

1) Number of Acceptances (Main Scheme)

2) Number of Acceptances – Clearing

3) Number of Offers as at 30 June 2018

Accordingly, the research had to develop what were called ‘UCAS Equivalents’ to both ‘A’ and ‘B’, which were distinguished by an asterisk: A* is the ‘Percentage of Students accepting places that came through Main Scheme and not through Clearing’; and B* is the ‘Percentage of Students offered a place by 30 June 2018 that accepted in Main Scheme’. Unfortunately, there was no equivalent to ‘C’ because UCAS data relates to ‘acceptances’ rather than ‘firm acceptances’ and does not include numbers of students who actually turned up and enrol at a university. The formulae for A* and B* are as follows:

A* = Percentage of Students accepting places that came through Main Scheme and not through Clearing =

Number of Acceptances (Main Scheme) x 100/ (Number of Acceptances (Main Scheme) + Number of Clearing Acceptances)

B* = Percentage of Students offered a place by 30 June 2018 that accepted in Main Scheme =

Number of Acceptances (Main Scheme) x 100/ Number of Offers as at 30 June 2018

This study focuses on Higher Education Institutions that have been awarded university status in England as at 30 June 2018. Whilst there is some commonality of approach in the other countries within the UK, differences in recruitment policy mean that accurate comparisons cannot be made; hence why this decision was made. It should also be noted that the nomenclature within the sector can be byzantine in nature: for this study a period of study has been called a 'programme', a grouping of programmes has been called a 'School' and a grouping of Schools has been called a 'Faculty'. This has been done to ensure simplicity of understanding whilst accepting that there might be differences between institutions.

A sample of 33 universities was devised from the 98 English universities, which was structured to balance the number of universities in each standard English region (Office of National Statistics, 2023; Opendatasoft, 2023), and the number of universities in each established university grouping. Given that the number of non-aligned universities was relatively large it was decided to include a '1994 Group', despite this group of universities ultimately having dissolved in November 2013. It involved those universities that were members at the time of its dissolution, with all other non-aligned universities then treated as a separate grouping in its own right, viz. 'Non-affiliated'. The distribution was as follows for the regions: East Midlands 3 (9); East of England 3 (7); London 6 (19); North East 2 (5); North West 5 (13); South East 5 (15); South West 3 (10); West Midlands 3 (10); and Yorkshire & Humberside 3 (10). The distribution was as follows for the university groupings:

Cathedral 4 (13); Guild HE 1 (3); Million+ 5 (15); Russell 7 (20); 1994 Group 3 (10); University Alliance 6 (16); Non-affiliated 7 (21). (The figures in brackets are the total number of English universities in that region or grouping). The details for the sample universities are anonymised, which was a stipulation by UCAS. To maintain confidentiality, regional analyses that were undertaken are generally described/commented upon but not shown; this is because when placed alongside the university grouping results it is possible to infer some of the universities. It should be noted that amongst the sample was the pilot university.

Noticeable in all of the data provided by UCAS was that there were marked percentage differences between the 'Number of Acceptances' and the 'Number of Acceptances (Main Scheme)' for the 33 universities. This ranges from 0.0% to 39.4%, although this figure only exceeded 10% for three universities; which begged the question about whether there should be a further 'UCAS Equivalent' looking at total acceptances rather than just those through the Main Scheme? The definitional difference is that 'Number of Acceptances' is *'Acceptance is defined as an applicant who has been placed for entry into Higher Education. RPAs are included in the total. An RPA (record of prior acceptance) is an application submitted to UCAS by an institution when an unconditional firm has already been offered and accepted by the applicant.'; while 'Number of Acceptances (Main Scheme)' is 'Main Scheme acceptances are defined as an applicant, who applied through the UCAS Main Scheme, placed for entry into Higher Education.'* In the circumstances, two further formulae were developed:

A** = Total Acceptances as Percentage of all Accepted Students (inc. Clearing) =

Number of Acceptances x 100/ (Number of Acceptances + Number of Clearing Acceptances)

B** = Total Acceptances as Percentage of Offers made by 30 June 2018 =

Number of Acceptances x 100/ Number of Offers as at 30 June 2018

In both cases the diagrams that make the comparisons between A* & B* and A** & B** will have the latter as the X axis and the former as the Y axis.

4. Results

4.1 Pilot University-Specific

The Pilot University's overall recruitment cycle statistics for the 2018 Main Scheme were: 32,964 applications; 25,490 offers made; 7,912 firm acceptances; and 5,800 enrolled students. For the 2018 Clearing process they were: 1,513 applications; 1,397 offers made; 1,397 firm acceptances; and 1,275 enrolled students.

Figure 1 shows an overview of the patterns for all programmes, for both the "Offers" index and the "Firm Acceptances" index. No distinction is made between the size and type of programme. It can be seen that there is a great deal of variation between the programmes, with the "University Aggregate Total" being distinguished by an orange square. This shows that on average 18% of students come to the university via Clearing and 23% of students offered places eventually come to the university; but also 27% of students who firmly accept a place at the university did not end up coming. The main purpose of the diagram is to highlight that there is a great deal of variation between programmes, with some clear outliers. Some programmes did not (need to) recruit via Clearing, whilst two recruited 80% of their students through Clearing. The 'Offers' diagram indicates that around 20% of students offered a place through the Main Scheme ended up enrolling at the university, but for several programmes this figure was below 10%. The 'Firm Acceptances' diagram points to the fact that even when the university had firm acceptances it could not be guaranteed that they would all enrol; with a number having figures of 50% and below, with one less than 20%.

Insert "Figure 1 - Diagrams showing patterns for all programmes at pilot university 2018" near here

Figure 2 shows the patterns for one large Faculty (Engineering and Technology) which has six Schools. It is seen that there are wide, varied patterns for each School, with perhaps Computer Science having the most 'compact' pattern for a group of programmes; but this is a subjective observation. Many programmes relying on Clearing for over 30% of their students, and many of these 'losing' over 30% of students who had firmly accepted places at the university. But there were also a lot of programmes that took few or no students through Clearing.

Insert "Figure 2 - Diagrams showing patterns for Faculty of Engineering and Technology programmes at pilot university 2018" near here

Table I and Figure 2 show the situation for one particular School within Engineering and Technology, viz. Computer Science. It is seen that there are 27 programmes, including Honours and Foundation degrees. The numbers of students applying for and attending each programme varied. As stated above, programmes were assigned symbols according to the number of students enrolling ('Less than 10', '10-50' and 'Over 50') a demarcation assigned consistently to all programmes across the university.

It is seen that there are wide variations, with some programmes not requiring or recruiting students through Clearing. The approach served to highlight some outliers, with questions undoubtedly asked in respect of Foundation/C Computer Security and Honours/ Data Science. By contrast, Honours/ Digital and Technology Solutions was placed at (100,100).

Insert "Table I - Admissions Data and Analyses for Computer Science programmes at pilot university 2018" near here

Insert "Figure 3 - Diagrams showing patterns for Computer Science programmes at pilot university 2018" near here

Of course, the other Faculties and Schools also showed divergent patterns, and often programmes diverged within individual Schools. It was noted that most of the programmes that relied heavily on

Clearing were Foundation degrees. Programmes that had little reliance on Clearing and had high percentages of firm acceptances enrol often involved vocational programmes such as Nursing, Allied Health and Policing. As will be appreciated, there is likely to be a link between programmes losing many students who had firmly accepted places and their reliance on Clearing to replace them.

4.2 Inter-University Comparisons

UCAS agreed to provide requested data for the sample of 33 universities on condition that they were anonymised. Accordingly, care has been taken in the choice of results that can be presented. For the reasons stated above the focus of the tables and diagrams is on university groups. The analyses and diagrams were similarly developed in relation to the standard English regions, but they are not presented here because in several instances it would be possible to infer the names of universities by comparing tables. Therefore, selections of these results are presented discursively.

The sample universities are referred to by the name of the group to which they belong, with the letters A, B, C etc. assigned to distinguish between those belonging to the same group. Table II details the values of A*, B*, A** and B** together with the percentage difference between Number of Acceptances and Number of Acceptances (Main Scheme), and ranks the universities by their values for A*. The actual numbers from which they are derived are not shown because, again, this would risk revealing the identity of the sample universities.

Insert "Table II - Values of Indices for Individual Universities in UCAS Sample 2018" near here

Table III shows the same figures for the aggregate university groups.

Insert "Table III - Values of Indices for University Groups from UCAS Sample 2018" near here

Figure 4 shows the relationships between A* and B* and A** and B** for each of the individual universities, with their university group highlighted with selected symbols. It also shows the same relationships for the aggregate figures for the universities within each group. Consequently, it is

possible to appreciate the amount of variation within each university group. It will be noted that both axes have been truncated for presentational purposes.

Insert "Figure 4 - Diagrams showing patterns for Individual Universities and University Groups from UCAS Sample 2018" near here

It is seen that there are wide variations between the individual universities and within the university groups. In terms of the university groups themselves the Russell Group stands out from the other six, to such an extent that for A* and A** all of the other university groups are below the sample average. There appears to be a main cluster of university groups consisting of the 1994 Group, the University Alliance and the Not Attached; with Cathedral and GuildHE having notably higher values for B* and B**. The Million+ Group had the most marked difference between its values of B* and B** because it had the largest percentage difference between Number of Acceptances and Number of Acceptances (Main Scheme).

It is noted that the Million+ Group had two universities with very high percentage differences between Number of Acceptances and Number of Acceptances (Main Scheme), leading it to have an aggregate which was more than double any of the other groups. In this regard, the Russell Group had a very low figure and the University Alliance had less than 2%.

Looking at regional analyses the values ranged as follows for each of the indicators: A* (81.2%-90.4%); B* (21.1%-40.0%); A** (82.9%-92.8%); B** (22.4%-54.7%); and the percentage difference between Number of Acceptances and Number of Acceptances (Main Scheme) (1.0%-14.7%). Of course, these ranges were narrower than for the individual universities because the regional figures are aggregates, and the Grand Total figures will remain the same as in Table III. Two regions were clear outliers: East of England had the highest values for all five indicators and London had by far away the lowest values of A* and A** (6.3% and 5.5% below the next lowest region respectively). The latter situation highlights the extent to which universities in the capital rely on Clearing to fill places, with between one in five and one in six places filled in this way. The other seven regions were

reasonably grouped together, with South West and Yorkshire & The Humber having the highest values of A* and A**, and North West and South East the lowest. Amongst this cohort East Midlands and North East had the highest values for B* and B**, and West Midlands the lowest. Together these analyses point to there being no overarching geographical pattern where values incrementally ripple across the regions in one direction or another. One lesson that is learned is that high percentage differences between Number of Acceptances and Number of Acceptances (Main Scheme) serve to increase the variation between the analyses and diagrams based on A* and B*, and those based on A** and B**.

5. Discussion

5.1 Implications for Theory

It is important to reiterate that the key objective of this research is to investigate the efficiency and performance of the recruitment process within English universities. Whilst it is not possible to be definitive in any conclusions given the disparate practices within the sector and the secrecy that is endemic within recruitment, the findings have provided evidence to inform theory in a number of different areas that are explored below. These areas provide the landscape in which individual institutions can apply the findings to local requirements, hence ensuring that an area, previously under-researched is better understood.

5.1.1 Usefulness of Methodology

The analytical and diagrammatical (*Nomogramma di Gandy*) methodology described in this paper has served to highlight that there can be considerable variations in student recruitment patterns between universities, faculties, schools and programmes, which might not be readily perceived from tables of simple data alone. In this regard, in particular, it serves the purpose of drawing leaders' attention to outliers, which can then inform both tactical and strategic decision-making. By allowing a visual scan of a number of data points (even into three figures) and their relative juxtapositions,

the methodology enables many common thinking errors to be minimized, if not completely avoided (Levy, 1997). Leaders can use the diagrams to explore potentially problematical issues, and similar, through questioning individual values (i.e., the "Whats") and their juxtaposition to each other (i.e., the "Whys and Wherefores").

It was necessary to investigate whether the methodology demonstrated variations between different universities, and types of universities, as well as in-depth analysis within an individual university. The results show that the approach is also valid for such inter-university comparisons, but that the data provided by UCAS did not enable identical indices to those used internally by the pilot university. The data provided was that which is relevant to UCAS itself and its responsibilities. Accordingly, the authors consider the approach equally valid for inter-university comparisons, but more high-level and serving a slightly different purpose. Of course, all universities will have their own unique balances and sizes of faculties and programmes; and different types of programmes will have their own student recruitment patterns (e.g. Arts subjects will be different to STEM subjects, which will be different to Nursing). Therefore, really meaningful comparisons would require some form of standardisation between subjects, but the relevant data was not available, because this would implicitly reveal the identity of the sample universities. Nevertheless, these comparisons gave some important and useful insights to student recruitment dynamics relating to different types of universities and different regions in England.

5.1.2 Voluntary Benchmarking Club

One theoretical option which could facilitate inter-university comparisons is a voluntary benchmarking club, where participating institutions annually submit relevant data according to agreed formats and definitions; with anonymized analyses being fed back so that each university can see how it measures against its peers. The authors do not believe that such a proposal would be considered by many universities for confidentiality reasons; although some of those where student

recruitment presents particular challenges might see merit in such a venture if it helps gain greater insights to the related issues, even if there is a limited number of participants.

However, the observed differences in data collected by the pilot university and UCAS suggest that there is no guarantee that the data collected by the pilot university will be identical in each and every detail for all other universities. Therefore, the consistency of available data would be something that would need to be established before any collaborative arrangements could be instigated. Nevertheless, all universities should be able to apply the methodology to their internal data, and yield informative and valuable analyses; even if there are (likely small) variations in the availability and definitions of the data compared to the pilot university. As with the inter-university comparisons utilising the methodology, if variations do exist then its application and interpretation can be suitably and readily flexed for local purposes.

5.2 Implications for Universities and Policy Makers

5.2.1 Student Recruitment Performance

There is considerable variation in the percentages and numbers of students that are accepted through the Main Scheme between individual universities and groups of universities. For individual universities in the UCAS sample, the percentages ranged from 73.6% to 99.8%, and the numbers ranged from 660 to 8950. A key question is whether such variations matter within the context of the large organisations that universities have become? That almost 93% of students at Russell Group universities selected their university through the Main Scheme rather than Clearing, whilst the comparative figure for Million+ universities is almost 10% lower, suggests that this metric is likely to significantly have an impact on a number of crucial facets which have become increasingly important for English universities. It should be noted that although Russell Group universities are less likely to participate in Clearing, their students would not always select the Russell Group university as a first choice, instead looking to an Oxbridge college as their preferred destination. This means the

university is likely to have to wait for final confirmation of their numbers and (importantly for onboarding), the actual students, who will be enrolling.

5.2.2 Datafication of Sector and Benchmarking

Although the 'datafication' of education is not a new concept (Stevenson, 2017), what has changed within the sector has been the consequences of failing to meet externally set benchmarks. Despite there being no benchmark that looks at where students come from, their outcomes are closely monitored. If the premise is accepted that students who attend their first-choice university are likely to have met or exceeded their target grades at Level 3, then it follows that those entering Russell Group universities will most likely have outperformed their counterparts from the other groupings. This is because universities within the Russell Group have higher entry requirements and target grades.

This point becomes increasingly important considering the way in which universities in England are now measured. The latest guidance (OfS, 2022) provides quantitative targets for universities to meet: 80% of undergraduate full-time students in a number of demographic groups need to progress to the next stage of their undergraduate programme; 75% need to fully complete their programme in the allocated time; and 60% need to be in graduate level jobs, fifteen months after their graduation. If targets are not met, then universities are liable for sanctions which are likely to impact reputationally on the organisation, and ultimately their registration as a Higher Education provider in the UK. This performative approach (Ball, 2003; Kernohan and Dickinson, 2022) towards quality within education means that there is increased importance attached to the quality of new students.

At this stage, it must be emphasised that students should not be treated as a homogeneous group. The OfS (2022) delineate students according to a range of demographic factors such as gender, ethnicity and whether they are the first of their family to attend Higher Education; and the performance of each group is monitored given the OfS's insistence that a 'clear narrative' should be in place for any group whose performance falls below the benchmark figures. In addition to this, the

widening participation agenda first suggested by the Kennedy Report (1997) and now represented by the POLAR categories (OfS, 2022) means that the intake of students for universities contains a wide variety of students. Hence, 'datafication' has become rather more complex than it first appears.

For a university, certainty of intake can have multiple benefits when assessing performance against OfS targets. If the vast majority of the upcoming cohort are known at an early stage, then it is possible to plan for the group of students and to ensure support is in place if weaknesses are identified, so they can be rectified at the earliest possible date. Because students are now recorded as being 'active' fourteen days after registration (OfS, 2022), this is very difficult to do for universities heavily reliant on Clearing in order to secure students. Taking the example of *'Not Attached G university'* from this study, over 25% of their students were recruited through Clearing and hence, it would be extremely difficult to prepare support for this 'last minute' cohort. This group of students will have also missed out on any pre-arrival support provided by the university that would help integrate them into university life and thus potentially influence retention and continuation.

What this means for university marketing teams is that the relationship between the university and its prospective students has been fundamentally altered. In part, this has been an ongoing process since the Further and Higher Education Act (Department of Education, 1992) that altered the education landscape to a marketised rather than cooperative approach (Courtney, 2015). Instead of students being seen as having a fixed role in the education process (i.e. their role was to ensure that they participated in their studies), their role became more akin to one of a customer (or latterly consumer) who was able to select a programme based on the offer that was put to them, hence the rise of the 'student-consumer' (Guilbault, 2016; Chapleo and O'Sullivan; 2017 Tomlinson, 2017). With the advent of higher tuition fees, via the Browne Report (2010), university income became more dependent on the money paid by students and hence, the need to attract students became ever greater.

5.2.3 Increasing Need for Marketing

Although the 'students as customers or consumers' approach has been criticised as being overly simplistic and indeed, most research now describes the relationship between student and universities as one where the student is either a consumer (in other words they contribute to the relationship rather than adopt a passive approach) or a co-creator of the experience (Tomlinson, 2017). This shifting of the student role, allied to the financial benefit of having an increased number of students means that the need to market programmes has never been greater. Universities are increasingly looking for ways to adopt commercial practice and differentiate themselves in a competitive and crowded marketplace (Winter and Thompson-Whiteside, 2017) and budgets allocated to marketing in Higher Education have seen an increase globally (Chapleo, 2015). This has particular impact when it comes to Clearing; despite the marketised approach that the Further and Higher Education Act (Department of Education, 1992) espoused, it is not always in the best interest of the university to recruit extra undergraduate students. The opportunity cost associated with the extra resources needed for increased numbers, as well as the fact that the current £9250 a year fee paid by students barely covers the cost of the year for the university (KPMG, 2019), means that any decision by a university to (significantly) recruit students through Clearing is not just a matter of hitting target numbers. Returning to the assertion that students are not a homogenous group, recruiting an international student with good grades through Clearing makes financial sense (given the increased fee they pay) and academic sense (as they are likely to perform strongly on their programme), whilst recruiting a home student with poor grades represents an academic risk whilst offering little in the way of financial recompense. Hence, recruitment has become a complicated process that needs to take multiple factors into account.

If the marketing of the programmes succeeds then the likelihood is that the number of students applying for places will increase and hence the university is in a better place when it comes to selecting high-quality students. Taking the example of *Russell A*, where almost all students are

accepted in the Main Scheme, the advantage this gives the university is that it will not have to participate in Clearing. Consequently, this will save it money as there are costs associated with related process, and it will have certainty in knowing the students who will attend its programmes; thereby allowing more time to prepare. This financial aspect is particularly pertinent because there is almost no differentiation of cost amongst undergraduate programmes in England with most universities currently charging £9250. This means that not incurring additional costs in terms of marketing Clearing that would be incurred by, say, *Unattached G*, leaves the university with greater financial resources to spend on the learning experience for the student.

The five universities in the UCAS sample that had the highest percentage of students accepting places that came through Main Scheme and not through Clearing were all in the Russell Group. (Three Russell Group universities were also in the top five in respect of the number of acceptances (Main Scheme)). Therefore, it seems reasonable to infer that these universities have an advantage when preparing for the 'onboarding' of students. However, this conclusion has a number of important caveats attached to it. Firstly, whilst Russell Group students are more likely to be recruited through the Main Scheme, there is no guarantee that the university they end up at was their first choice. Indeed, many might well have initially applied to one of the Oxbridge colleges; which would mean that the 'insurance' Russell Group university would only have confirmation of their final students in late August. In such circumstances, any advantage in terms of knowing who the students are, over those universities more heavily dependent on Clearing, is negligible. Secondly, different programmes attract differing costs; something that must be borne in mind when giving consideration to student recruitment. Programmes with a high level of class contact hours (such as Engineering and Medicine) or specialist equipment (such as Paramedic programmes or science-based programmes) are likely to require far more resources and hence be far less appealing from a financial perspective.

What these differentials suggest is that there needs to be far greater targeting, and more granular analysis can show that there are significant differences even between subject areas. Looking at Table II, it is seen that even within one subject area (in this case Computing), there are significant differences between programmes. For example, the undergraduate programmes 'Digital and Technology Solutions' and 'Computer Security' are superficially similar programmes, but their recruitment patterns differ significantly. Whilst the former was oversubscribed from the Main Scheme, the latter relied much more on Clearing. Using only this data, it is not possible to ascertain the reasons for this difference, but from a recruitment perspective it is vital to understand the factors that influence which programmes students choose. These might include the title or reputation of the programme, perceived or actual career prospects, perception of staff and students associated with a particular programme, word-of-mouth, presentation to prospective students, and how aware applicants are of the programme and what it consists of.

5.2.4 Honours versus Foundation Degrees

Whilst there are significant variations between providers, there are also differences between programmes. One of the most important ones from a recruitment perspective is the difference between traditional undergraduate programmes and Foundation degrees. It is noted in the results for the pilot university that the programmes that relied most heavily on Clearing were Foundation degrees. Traditionally students do not see Foundation degrees as a programme to aspire to and hence it tends to be used as a 'fallback' award. This means that significant numbers of students enrolled on these degrees will come from Clearing, making it very difficult to plan for their academic studies. It also means that recruitment involves a difficult balancing act between the aspirational nature of university and the reality that many students might well only be able to achieve grades that qualify them for Foundation degrees. The questions raised above about the financial implications for programmes that rely heavily on Clearing are therefore potentially particularly relevant to Foundation degrees.

5.3 Limitations of the Study

One limitation of the *Nomogramma di Gandy* methodology is that it focuses on percentages, but percentages by definition mask relative size. Consequently, the methodology in itself does not indicate relative size or activity, but analyses can give an indication of the type and size of the programmes by using specific symbols and categories. For example, as illustrated in the results, a simple split between Honours and Foundation programmes was made, with the latter two being split into whether the number of students enrolling was 'Less than 10', '10-50' and 'Over 50'. This involved a 'rule of thumb'; other splits of the data could have been made if so required. It is recommended that the diagrams are set alongside related tables showing the actual data and percentages, for ease of reference.

This research did not distinguish between the different types of offers made (i.e. conditional, unconditional, contextual) because its main aim was to evaluate the efficacy of the diagrammatical approach to inform tactical and strategic decisions in respect to student recruitment and programme continuation. It was deliberately 'high level' with a view to leaders identifying patterns and outliers so they can determine how and where to drill down further into the data.

5.4 Future Research Directions

5.4.1 Finances

As stated above, the inference is drawn from the analyses that universities which have little reliance on Clearing to recruit students, should therefore make savings (per head) on the costs of recruitment; which should enable them to invest more resources into teaching, research and the student experience. This begs the question of what exactly are the costs of student recruitment? Investigation on the part of the authors indicates that there is no universally-accepted, specific definition that would be recognized by managers and strategic planners.

Indeed, it is extremely hard to get relevant figures, because universities will not necessarily release their full spend for reasons relating to commercial sensitivity/marketing strategy. Freedom of Information requests reveal that some universities spent at least £500,000 on recruitment (Whatdotheyknow.com, 2023); but even then, some costs associated with open days and publication costs were not always included. Every university will have its own budget structures, and organisational arrangements in respect of student recruitment will also vary. For example, some universities will have invested in important outreach activities with schools, with the size of the teams reflecting the institution's dependency on recruitment from its natural hinterland. This means that some recruitment activities could be attributed to different budget headings at different universities. Universities do not necessarily have a specific marketing advertising budget, and (indirect) costs associated with professional services, academic staff involvement, utilisation of buildings etc. will likely be borne by mainstream budgets. Some costs are understandably shared between undergraduate and postgraduate recruitment budgets.

The authors consider that investigating to what degree universities can and should identify and attribute direct and indirect student recruitment costs is a suitable subject for further research. Irrespective of whether there could ever be a universally-accepted, consistent methodology for such costings, it would make sense for universities to informally explore the key financial and activity data issues with a view to engendering greater convergence.

5.4.2 Types of Offers

Universities can make different types of offers to students, viz. conditional, unconditional, and contextual. These have also included 'conditional unconditional' offers, which have been controversial and codes of practice have been introduced to deter their use (Middleton, 2022). The usage of the different types of offers will vary between universities and within universities, between different programmes, and this may well be one of the issues for leaders to then consider. However,

it is an issue that is considered tangential to the research as described; but it is a suitable subject for further research.

5.4.3 Honours versus Foundation Programmes

The results for the pilot university highlighted different patterns for honours and foundation programmes. The limited data available from UCAS combined Honours and Foundation degrees and therefore the related size and balance within the sample universities is not known. Given the witnessed differentials at the pilot university, determining the patterns relating to these two types of programmes at different universities should be investigated to establish if there are strategic lessons to be learned.

6. Conclusions

Recruitment to universities has always been something of a 'grey area', which has been little researched; probably because each university jealously guards both how much it spends and also how successful that spend is. The goal of this research is to try to get behind this liminal state and explore the implications of recruitment to English Higher Education establishments. The tailored application of the *Nomogramma di Gandy* has enabled greater insights to student recruitment issues, and hence it can help inform individual universities tactically and strategically. Ideally the number of offers made and the number of students enrolled are a perfect match, but for most universities even getting close to this is not possible.

There are significant differences in recruitment patterns between the sampled providers and whilst it would be easy to conclude that Russell Group universities are in the strongest position when it comes to onboarding new students, this is an over-simplification because many students only confirm their place following failure to enter an Oxbridge college.

The *Nomogramma di Gandy* methodology utilises simple data which is readily available to a university internally and to UCAS internally. Whilst analysis does take place within the confines of

each university, there have been no attempts at detailed benchmarking between institutions. This is something that could be very worthwhile if agreement could be reached between universities; but given the confidentiality issues involved and the lack of complete consistency in how universities organise their finances, the authors feel that such benchmarking arrangements are unlikely to be achieved in the near future. Nevertheless, UCAS could consider benchmarking universities utilising its own data, perhaps for internal purposes, given the differences from data held by individual universities. Such inter-university patterns could help inform the overall sector if appropriate presentation can be determined. Certainly, in light of student recruitment involving significant costs, with a potential 'knock-on' impact on the resources available for teaching and research, this is a research area that requires further attention and investigation.

Finally, the growing 'datafication' within the sector has meant that it is increasingly important for universities to know who is coming to study their programmes, so that they can prepare the support required. Improving the accuracy and effectiveness of their recruitment so as to maximise students recruited through the Main Scheme, rather than (late) through Clearing, could enable improvements in this regard. Whilst recent OfS changes did not specifically target recruitment, the reality is that they will lead to English universities focusing more on this area in the years ahead.

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