

Calculating the ‘Universities for Nottingham Interaction Metric’ estimating the broader social and cultural impact of Universities for Nottingham

As detailed in the main report, Public First calculated a total of 1,449,044 unique interactions across the NG postcode over a calendar year, with the two institutions making up the Universities for Nottingham. This was distributed across 8 groups of personas, as below:

 <p>School children and parents – anyone aged below 16 in education</p>	 <p>Young people and students - young people over 16 in further or higher education, not at the university</p>	 <p>Entrepreneurs and innovators – people starting up businesses and growing and designing new services and products</p>	 <p>Businesses and employers – public, private and third sector businesses in the region</p>
 <p>Creative, cultural and heritage sector – creative and artistic businesses and individuals outside the university</p>	 <p>Local community – those who live and work in the region</p>	 <p>Patients – people treated by the NHS in the region</p>	 <p>Placemakers, policymakers and international – local, regional and national officials and elected members, plus international students</p>

The sum total of interactions calculated across each persona was as follows:

School children + parents	265,350
Young people + students	20,400
Entrepreneurs + innovators	19,500
Businesses + employers	145,247
Creative, cultural + heritage	45,600
Local community	534,527
Patients	401,864
Placemakers, policymakers + international	16,555
TOTAL	1,449,044
Interactions per minute	2.76
Interactions every x seconds	21.76

Each of the 8 personas broke down further into a total of 23 sub categories which made up each group. We broke down each those 8 personas' interactions as follows:

A: School children and parents

We calculated 265,350 unique interactions with this group. This was comprised as follows

- i. Teachers currently in NG schools who have been trained at one of the two schools of education. We took alumni data from both institutions for those who had graduated in the last three years and filtered for those who had a SOC code indicating that they were working in education, and then used the SIC code to identify phases of education. We modelled a series of estimates based on typical class loading and class size for teachers to create a proposed number of interactions for all full time teachers across the different phases of further education, secondary, primary and early years, special schools, school inspections, school leadership professionals, and other. HE academics scored zero interactions. For PT teachers, we assumed a 50% loading of all of these assumptions. A deflator was applied of 90% for the previous year's graduates and 70% for the year before that to recognise likely wastage rates out of NG schools given national figures on teacher exit. This came to 147,164 interactions
- ii. Students participating in a WP session run by one of the two institutions. We took actual data from the universities as to how many students had participated, and filtered to only those whose school was in an NG postcode. This came to 34,792 interactions
- iii. Teachers in NG schools governed by UoN. This is a specific category for one institution recognising its role sponsoring a multi academy trust. There are 2 schools set up / governed by UoN and we assumed 1 engagement per pupil at each of these schools, plus 1 for staff numbers at each school. We took pupil and staff numbers from DfE official data to come to 1,490 interactions. It is possible a small number of these teachers were trained at UfN at which point there would be some double counting but for assumption purposes, we have assumed these teachers are all additive. It was unclear whether UoN has a governing relationship with the wider Nova MAT that these schools were in, which would have allowed us to count in here every pupil and staff member attending / employed by Nova at their schools within NG, which would be a much bigger number - but this isn't done here
- iv. Trainee teachers. We took placement data for PGCEs for both institutions and applied the same engagement weighting as for teachers as above, then applied a 90% weighting to reflect a 90% PGCE timetable. This came to 78,880 interactions.
- v. Junior visits to sports facilities. We had raw data from NTU for this which totalled 3,024 visits. UoN sports visits were not broken down by age

B. Young people and students

We calculated 20,400 interactions with this group which broke down as follows:

- i. Apprenticeships offered. We took raw data from both universities as to number of apprenticeships offered and taken up and applied an engagement weighting to each one to recognise the engagement of an apprentice during a placement of 4 days on the job and 1 day off the job. This totalled 20,400 interactions.

Almost all data in this category related to work carried out with the students currently studying at UfN - so although sizeable, it wasn't counted for the purposes of external engagement (and the students' external engagement themselves is either counted as economic impact or scored elsewhere in eg volunteering)

C. Entrepreneurs and innovators

We calculated 19,500 interactions with this group which broke down as follows:

- i. Business incubation support. Both institutions offer a number of placements, mentoring relationships, technical assistance and grant support for small and medium businesses. We aggregated raw data from both universities for all their schemes and filtered for all businesses resident in the NG postcode. For each individual programme, we estimated interactions based on the duration of the relationship and the style of it (for example, was it likely to be with a small number of people in each business, a 1:1 session with the CEO, or a much bigger workshop). Any business who engaged in multiple sessions in the same scheme was discounted, but businesses who participated in multiple different schemes were counted multiple times. Grant relationships scored zero for interactions. Across all the schemes, we calculated 15,395 interactions
- ii. Business hosting facilities. Both universities have premises which they offer to businesses to be resident, and also benefit from various mentoring services. We took raw data as to business occupancy rate and employee numbers on each site, both currently and for in previous years. For UNIP, we took the FTE staff employed by all the companies based physically or virtually in UNIP - who all score as engagement. In addition there are UoN staff employed there, a number of placement students there from UoN and shorter term project students, as well as PhD students carrying out research - but all of these are excluded because of the double counting risk when looking at placements. In addition, the UNIP hosted business events held that attracted a number of people - it is likely (though not certain) that all of these are additional to the staff employed by UNIP based companies. Absent any information about that, and their postcode, we have added all those attendees to the engagement score. UNIP companies were likely to have significantly greater engagement metrics themselves but for the purposes of this, simply being resident in the campus doesn't mean we can count these interactions - we only count those between UNIP staff and the companies based there via their employees. For

the Hive and for Ingenuity Lab, we counted business based in the centres now and in the past and assumed a series of interactions per company. BioCity was excluded from this analysis because of a lack of data as to how many businesses were based in the two NG campuses, which should be scored on the same basis as UNIP. Taken altogether, this category comes to 4,105 interactions.

D. Businesses and employers

We calculated 145,247 interactions with this group which broke down as follows:

- i. Student placements. We took data from both institutions as to placements with local businesses excluding clinical and teaching placements, and filtered for those taking place within an NG postcode. For each placement type, we estimated an engagement score based on a combination of duration of placement (where we have data for length of placement for each one) and a judgement as to the type of placement and therefore its external visibility to NG businesspeople. Taken together, across all placement categories, this came to 86,963 unique interactions.
- ii. HEBCIS categorised business engagement. For this, we took 17/18 HEBCIS data for each institution in the sub categories of contract research (business only), facilities and equipment, consultancy, CPD and executive education, and collaborative research. For all of the contract based income, we took numbers of contracts and estimated a level of engagement based on value of contract and duration and manpower associated with it. Crucially, the big unknown here was the level of contract research that took place in the NG region and therefore the percentage of all interactions which we could ascribe to the region. For UoN, we took an expert estimate from the university that it was very little – 0.23% of contract income. For NTU, we took an expert assessment that it was 100% of contract income. For CPD and executive education, it was a much simpler methodological calculation which took raw data for number of days of CPD delivered and scoring one engagement for each of the participants. We assumed 90% of participants came from the NG region in the absence of any postcode data and under an assumption that most CPD is done very locally.

Adult education that was not executive education and CPD – in other words, both lower level remedial education but also night school type retraining – was not included in these assessments due to lack of data from both institutions on it.

E. Creative, cultural and heritage

We calculated 45,600 interactions with this group which broke down as follows:

- i. Galleries and cultural facilities owned by the universities. We used data supplied by the universities for the Bonnington Gallery and Nottingham Contemporary for visitor numbers which totalled 36,000.
- ii. Other creative engagement supported by the university. We made a series of estimates for visitor numbers and levels of engagement that can be ascribed to the universities for the development of Backlit, Primary, One Thoresby Street, 4/4 Collective, and Chaos Magic. Taken together, this totals 9,600 interactions.

Lakeside Arts is the University of Nottingham's public culture programme attracting more than 200,000 people of all ages and abilities annually to a diverse programme of visual, performing, participatory arts and heritage events, performances, talks and workshops. Lakeside Arts is home to creativity, talent development and excellent cultural experiences for the public, staff and students at the University of Nottingham. Visitor numbers here totalled 200,000. However, for our analysis, we ascribed this to community category, rather than creative and cultural.

We are also aware that NTU delivers a large number of interactions via the Creative Quarter Company and Confetti campus. However, we did not have any data from the university on this and it was not possible to even make any informed estimates as to the level of external engagement in these categories, stripping out student engagement. This is something which should be rectified in future editions of this calculation.

F. Local community

We calculated 534,527 interactions with this group which broke down as follows:

- i. Local community events. For this, we took data from the HEBCIS category including both free and chargeable events hosted by the university. We assumed all visitor numbers counted here were both non-university members and NG residents – it is likely that this represents a slight over estimate of NG counting. This totalled 282,219 (with the biggest single item of this being, as noted above, Lakeside)
- ii. HEBCIS contract research for non business – this was calculated in exactly the same way as it was for business research as described above, and similarly downgraded to 0.23% of income for UoN income. This totalled 1,448 interactions (made much smaller because of the assumption around UoN non business income not being in NG)
- iii. Student and staff volunteering – we took data from both universities as to all instances of staff and student volunteering numbers they had, which also included numbers of hours volunteered, and we ascribed an engagement to each per number of hours volunteered. This includes, as above, some youth volunteering but it wasn't disaggregated in the data. It is likely that informal volunteering done by students and staff not arranged by the

- university is also done, but there is no data captured on this (self evidently) and no way of estimating it reliably so it is ignored for calculation purposes. This totals 67,740 interactions (and excludes WP projects which are recorded separately).
- iv. Visits to facilities and centres run by the universities – this principally covers sports centres but also NTUs award winning legal advice pro bono centre. We took visitor numbers for all of these and for sports centres, ascribed them as one engagement each (we used unique visitor data, not total footfall, as the latter also includes repeat visits and student participation which should not count). For the legal advice centre, we made assumptions as to the levels of engagement with each pro bono case taken on and not taken on. This totals 49,341 interactions.
 - v. Conference centre visits and associated hospitality and accommodation – this covers both universities’ conference centre usage data but also the orchard hotel used by the university of Nottingham. It is possible that Orchard conference delegates are also Orchard hotel stays but after deliberation, that is considered two separate interactions - one with the conference centre and then one with the hotel. However, this figure then deducts the executive education interactions in the businesses tab as it is very likely that they all score either as using the conference centre facilities or as an overnight stay - so they are not counted again here. This totalled 133,779 interactions.

G. Patients

We calculated 401,864 interactions with this group which broke down as follows:

- i. Medical staff trained at the university and employed in NG. Following the same precedent for how we calculated teacher numbers, we took alumni data / DLHE data and filtered it to show all those whose SOC code has working in health in various guises, further filtered to all of those resident in an NG postcode. For each of the different type of medical practitioner recorded via the SIC code, we ascribed a typical annual engagement based on national data for example around nurse shift patterns and patient load per shift, pharmacist footfall and number of repeat customers, and doctor caseload. As with teachers, we assumed a 0.5 weighting for anyone recorded as part time, and we applied a deflator of 80% for the previous year’s stats and 70% for the year before to recognise likely wastage rates out of NG hospitals given national figures on medical practitioner moves. This totalled 401,084 interactions.
- ii. Training medical placements. We used university data and our same estimates as to interactions for each type of medical practitioner. This totalled 430 placements. We believe this figure represents a potentially significant under estimate because although it captures pharmacy placements, it doesn’t count any trainee doctors or other allied health professionals who don’t show in the data we were supplied with.
- iii. Medical research. We used data on contracts won by health based research institutes within each university or from clinical commissioners, and filtered for those which are carried out in an NG postcode, with an assessment of the external facing nature of each one. This totalled 410 placements, recognising the academic nature of such research and small interactions between a close knit team, many of which are in the university.

H. Placemakers, policymakers and international

We calculated 16,555 interactions with this group which broke down as follows:

- i. Civic engagement – this encompasses senior university staff sitting on various local and regional bodies with elected officials and members and makes estimates as to number of hours given to each one and likely interactions. In the absence of even informal data on this, we have made a series of estimates around 20 people from each university giving a proportion of their time to such groups, and therefore a total engagement score of 800 interactions.
- ii. Policy bodies – including UoNs Institute for Policy and Engagement and NTUs Civic Exchange, which both function as interlocutors between universities’ and civic bodies and third parties at a local and national level. Both of these bodies are at early stages so we took a series of assumptions looking at future strategic plans and estimated a total of 700 interactions, forward looking.
- iii. Confucius Institute – this is UoNs specific centre which leads engagement with China. Full visitor and other engagement numbers were supplied by the centre; our calculations excluded student volunteers, school placements which we assumed are counted elsewhere, and interactions and delegations in China. The remaining figure was for estimated participants to cultural events and activities eg Chinese New Year. It is possible, but unlikely, that this scores in HEBCIS - it's counted separately for the purpose of the model, and totalled 15,055 interactions.