Understanding physics graduate mobility to develop a regional employer engagement strategy

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Many of our most promising physics graduates turn away from industry because they don't know what it has to offer.

5 year old collaboration between companies and physics students from the universities of York, Sheffield, Hull, Nottingham and Leeds.

- Industrial Projects
- Placement support
- Technical skills development
- Employer engagement
"Around 45 per cent of graduates responding to the 2015-16 Destinations of Leavers from Higher Education (DLHE) survey sought post-study employment in their home region.

Given uneven regional productivity, the variability of labour markets across the country, and constraints to mobility for some graduates, we recognise that successful outcomes may be at risk for graduates who seek post-study employment in areas with lower productivity and growth. We want to support choice for graduates and students and, as set out in the government’s industrial strategy, many regions need their skills and knowledge in order to thrive.

We are particularly interested to understand how providers can help improve employment outcomes for graduates through partnership working with employers and local agencies."
Outline

Data

- Gross value added productivity - a good starting point?
- Mobility - what does this mean?
- Outcomes - analysing the geographic factors

Interventions - Our plans in WRIPA+

Outstanding questions

The richer the region of employment the more students in graduate roles.
Sheffield DLHE summary

- This analysis supports OfS statement
- Need to focus on regional support for employment
- Bear in mind that SCR has lowest GVA of any city region

But the analysis is at cohort level

There is no knowledge of where a student originates from
Longitudinal analysis: recruitment through to destination.

- Registration data linked individually to student list.
- Postcodes of home address, term address and employer address.
- Postcode look up with lat, long.
- Distances from home to university to work calculated and used as mobility proxy.
- Degree class, title, award.
- Postcode look up with POLAR quintiles - measure of historical HE participation. 1=low and 5=high.
64% of all students return to work within 50 km of home
Much greater mobility in coming to university than in gaining employment.
These students have come from London to Sheffield to study and stayed in Sheffield to work.

These students come from near Sheffield and have moved near to London to work.

These students come from Sheffield and stay here to work.

These students come from near Sheffield and have moved near to London to work.

These students have come to Sheffield to study and have gone home to work.

Recruitment mobility vs work mobility.

Complex!

Or simple?
MOBILITY AND GRADUATE / TECHNICAL

SOC codes converted to 1/0 coding for graduate roles and technical roles using DLHE scheme and “expert judgement” respectively.

SOC - standard occupational classification

1 = graduate role or technical role

0 = non graduate role or non technical role
Technical roles (~50%) are a subset of graduate roles (~75%).

- No difference in recruitment mobility and technical destinations
- 50 km difference in recruitment mobility and finding a graduate level role.
Technical and graduate level destinations are strongly correlated with mobility from home to work.
Red are technical roles. Blue are non-technical. Technical roles are more geographically dispersed. Dot size is work mobility.
Summary

- 65% of Sheffield physics students return home to work.
- These 65% of students are not work mobile.
- Students that are work mobile get better jobs.

- Students with 1st’s and 2.1’s get better jobs.
- Students with 1st’s are much more work mobile.
- There is no link between recruitment mobility and degree class.
- Students from lower POLAR quintiles are less mobile in coming to Uni.
- There is no difference in work mobility depending on POLAR or gender.
- There is no difference in the outcomes of students depending on gender or POLAR quintile. (But no progression data)
- There is not enough data to say if industry or year abroad students are more mobile or get better jobs.
WRIPA+ interventions

Support students to be mobile.

Build many more regional industrial relationships.

- Placements (long and short) & industrial projects
- Involving industry in curriculum delivery
- Travel and subsistence fund to help students work and study with industry.
Our research tells us there are ~2000 physics relevant companies in the Y&H region.

WRIPA has engaged with <<50 of them

Sheffield has engaged with <<20 of them
Discussion

OfS are encouraging us to support students into local employment through local industrial engagement.

But our data tells us that supporting students to be mobile, and travel to work, will get them better jobs.

So our plans are to use our regional network to help do a bit of both - regional mobility and regional engagement - using our WRIPA network

If only we had a decent regional transport network...
Any Questions?

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1st class students are more work mobile

Recruitment mobility is not linked to degree class.
SOC coding vs degree class.

- More likely to go into technical role with a 2.1 or 1st.
- Twice as likely to get non-technical job with 2.2.
- Much more likely to get graduate role with 1st.
- Twice as likely to get non-graduate (and non-technical) role with 2.2 than 2.1.
- No difference in average work mobility... although...
- Students are either mobile (and move south) or are not and stay in Sheffield

**POLAR quintiles vs mobility**

- Students from lower POLAR quintiles come from closer to Sheffield
Sheffield graduates: 16
Other locations: Leeds, Edinburgh, Karachi

Physics graduates: 5
Chemistry: 4
EEE/ACSE: 3
Tourism: 1
Law: 1
IT: 1
Business: 1
Psychology: 1
East Asian studies: 1
Mechanical engineering: 1