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Context

For those engaged in debates about the contemporary doctorate, the following two perspectives will be both familiar and problematic. The first perspective arises from the policy promise of the knowledge economy - a global policy consensus which tells of the fundamental importance of doctoral graduates to secure long-term economy prosperity and resolve the complex challenges of globalisation (Hancock and Walsh 2016; Hancock et al. 2017; Skovgaard-Pedersen 2014). According to this view, doctoral graduates are prized knowledge workers, 'tackling major business challenges and driving innovation and growth' (Smith 2010: 5). Doctoral graduates are expected to enjoy higher earnings, professional autonomy, and interesting, creative work (Lindley and Machin 2013; Walsh 2013). Hallmarks of neoliberalism infuse this narrative. Sufficiently capable individuals are encouraged to invest in a doctorate, which will permit access to high-status and well-paid knowledge work. In the knowledge economy, the possibilities for individual success and economic growth are infinite (Friedman 2005: 230).

Notably less buoyant is a second account, which characterises doctoral transitions into non-academic occupations as a story of unmet expectations and frustrated ambitions. Here, doctoral graduates are 'bright and talented... disillusioned and directionless' – forced to rethink career expectations when the prospect of securing an academic position falters (Nature 2014: 8). Agency is undermined and professional identities must be revised. Doctoral graduates who enter non-research positions report lower job satisfaction than those who remain in research (Auriol et al. 2013), while analysis of newly qualified European doctoral graduates suggests that they are not as easily absorbed into the labour market as the knowledge economy view implies (Skovgaard-Pederson 2014). Evidence that doctoral graduates mobilise across a range of sectors is limited (Mangematin 2000) undermining the notion of 'transferable' skills.

This critical reading of the knowledge economy relates to a broader set of concerns about the meritocratic potential of mass higher education systems at a time of unprecedented levels of economic inequality (Piketty 2014: 306-7; Marginson 2016). Successive empirical analyses conclude that an increased number of graduates seldom coincides with

structural labour market change (Schofer and Meyer 2005; Lauder et al. 2012). This observation is further complicated by several recent studies which point to the persistence of background characteristics and institution in determining outcomes (Britton et al. 2016; Wakeling and Savage 2015; Laurison and Friedman 2015).

This study offers a timely reappraisal of the knowledge economy promise, analysing recent employment data for UK doctoral graduates, linked to academic and socio-demographic data. This novel element of linked data enables an exploration of whether and how doctoral students' prior academic experiences and differing access to economic, social and cultural capitals are associated with distinct career pathways.

Method

A dataset – limited to 2008/9 and 2010/11 UK doctoral graduates in the longitudinal Destinations of Leavers from Higher Education (LDLHE) survey – was created with the assistance of the Higher Education Statistics Agency (HESA). It was reasoned that this survey – which captures activity at 3.5 years after graduation – would offer a more meaningful insight into doctoral outcomes than the initial six month survey. Survey data were linked to academic and socio-demographic information in the student record. The size of the dataset, and response rates are noted in table 1, below. These are the most recent years for which LDLHE data are available.

| Year of graduation | Responses (n) | Response rate (%) |
|--------------------|---------------|-------------------|
| 2008/9 | 2060 | 38.3 |
| 2010/11 | 2285 | 40.6 |
| Total | 4345 | 39.4 |

This paper will concentrate on the following two research questions:

- 1) To what extent do doctoral outcomes differ by higher education institution (HEI) and subject?
- 2) To what extent do doctoral outcomes differ by graduates' socio-demographic characteristics?

Outcomes are defined as: employment rate; graduate level employment; position; sector; salary; job satisfaction. Higher education institution outcomes are reported by mission group, and subject areas are defined using the Joint Academic Coding System (JACS). Socio-demographic characteristics are defined as: age on entry; gender; ethnicity; social

class; state school; parental occupation and education; and, neighborhood participation rate (POLAR3).

The data analysis includes two elements: firstly, a descriptive analysis to describe key trends in doctoral outcomes; and secondly, the application of logistic regression to understand the impact of academic and socio-demographic variables on the odds of achieving particular outcomes, including entry into an academic career.

Preliminary findings

Early analyses indicate that many doctoral graduates report seemingly successful early transitions to the labour market. The majority (88.1%) are in full or part time employment. The occupation titles of those in employment are mostly concentrated in the two highest socio-economic groups (94.4% to NS-SEC 1-2). The largest single category of employment is 'higher education teaching professional' (one-fifth of the sample), although there are considerable variations by subject area (almost half of all social science doctoral graduates transition into this role, whereas only one tenth of STEM graduates do). Career satisfaction is generally higher than that reported for undergraduate students in the DLHE – 91% of doctoral graduates are either 'very' or 'fairly' satisfied with their career. However there are noteworthy variations by subject area – the satisfaction of doctoral graduates in the Arts and Humanities is considerably lower and warrants further exploration.

From an inequalities perspective, two tentative headlines emerge at this stage. Firstly, there are clear associations between socio-demographic characteristics and doctoral subject and institution – so to say, between who you are, what you study, and where you study. These patterns mirror earlier research examining undergraduate and taught postgraduate admissions, and institutional stratification (e.g. Boliver 2016, Wakeling and Hampden-Thompson 2013). There is a significantly higher proportion of young (<25 years on entry), white, male students from NS-SEC 1 and 2, obtaining a doctorate in 'high status' disciplines (e.g. science, technology, engineering, mathematics, business and management), from Russell Group institutions. Secondly, there are clear associations between academic and socio-demographic characteristics, and employment outcomes. For example, even within a very similar group of doctoral graduates – those now working academics – there are marked salary differences by gender, ethnicity, and doctoral institution – which hold even when subject area is controlled for. A finalised analysis of these interactions, together with recommendations for policy, will be presented at conference.

Words (excluding abstract and references): 999

References

Auroil, L., Misu, M. and Freeman, R. A. (2013). Careers of doctoral holders: analysis of labour market and mobility indicators. *OECD Science, Technology and Industry working papers*, 4, 1-61.

Boliver, V. (2016). Exploring ethnic inequalities in admission to Russell Group universities. *Sociology* 50(2): 247-266.

Britton, J., Dearden, L., Shephard, N., and Vignoles, A. (2016) How English domiciled graduate earnings vary with gender, institution attended, subject and socio-economic background. IFS working paper W16/06. Retrieved 22 June 2017, from <https://www.ifs.org.uk/uploads/publications/wps/wp201606.pdf>

Friedman, T. (2005) *The World Is Flat*. London: Penguin.

Hancock, S. and Walsh, E. (2016) Beyond knowledge and skills: rethinking professional development during the STEM doctorate. *Studies in Higher Education*, 41(1), 37-50.

Hancock, S., Hughes, G., and Walsh, E. (2017) Purist or pragmatist? UK doctoral scientists' moral positions on the knowledge economy. *Studies in Higher Education*, 42(7), 1244-58.

Lauder, H., Young, M., Daniels, H., Balarin, M. and Lowe, J. (2012). *Educating for the knowledge economy? Critical perspectives*. Abingdon: Routledge.

Laurison, D. and Friedman, S. (2015) *Introducing the class ceiling: social mobility and Britain's elite occupations*. LSW working paper. Retrieved 22 June 2017, from http://www.lse.ac.uk/sociology/pdf/Working-Paper_Introducing-the-Class-Ceiling.pdf

Lindley, J. and Machin, S. (2013) *The Postgraduate Premium: Revisiting Trends in Social Mobility and Educational Inequalities in Britain and America*. London: The Sutton Trust.

Mangematin, V. (2000). PhD job market: professional trajectories and incentives during the PhD. *Research Policy*, 29(6), 741-56.

Marginson, S. (2016) The worldwide trend to high participation higher education: dynamics of social stratification in inclusive systems. *Higher Education*, 72(4), 413-34.

Nature (2014) Editorial: Harsh reality. *Nature*, 516, 7-8.

Piketty, T (2014) *Capital in the Twenty First Century*. London: Belknap Press.

Schofer, E., & Meyer, J. (2005). The worldwide expansion of higher education in the twentieth century. *American Sociological Review*, 70(6), 898–920.

Skovgaard-Pedersen H. (2014) New doctoral graduates in the knowledge economy: key trends and issues. *Journal of Higher Education Management and Policy*, 36(6), 632-45.

Smith, A. (2010) One step beyond: making the most of postgraduate education. Report for the Department of Business, Innovation and Skills. Retrieved 22 June 2017, from http://dera.ioe.ac.uk/470/7/10-704-one-step-beyond-postgraduate-education_Redacted.pdf

Wakeling, P. and Hampden-Thompson, G. (2013) Transition to Higher Degrees Across the UK: an Analysis of National, Institutional and Individual Differences (York, Higher Education Academy).

Wakeling, P. and Savage, M. (2015) Entry to elite positions and the stratification of higher education in Britain. *The Sociological Review*, 63(2), 290-320.

Walsh, E., Anders, K., and Hancock, S. (2013) Understanding, attitude and environment: The essentials for developing creativity in STEM researchers. *International Journal for Researcher Development*, 4(1), 19 – 38.