The Impact of the Social Sciences: How Academics and their Research Makes a Difference

Research Design and Methods

A1. Introduction

All the research set out in this book has been done as part of the *Impact of Social Sciences* project (October 2009 to December 2012). This project was funded by the Higher Education Council for England (HEFCE), and involved collaboration between three universities: the London School of Economics and Political Science (LSE), Imperial College London and the University of Leeds. The central team (i.e. we the authors) was based in the LSE Public Policy Group, with four research 'labs' undertaking applied research on particular aspects of impact. Two of these research labs were based at the LSE. Ralph Martin and John Van Reenen from the Centre for Economic Performance looked at interactions with policy makers around the dissemination of research related to climate change policy. They also conducted an inquiry on climate change using Google Search data to develop new metrics to measure research activity as well as its impact on the public debate. In LSE Health, John Wright and Elias Mossialos and colleagues analysed the impact of methodologies for health technology assessment on government policy and public acceptance of health care policies in five European countries. They compared the operations and methodological approaches employed by these different bodies and assessed their impact on policy and practice.

At Imperial, a team in the Grantham Institute of Climate Change, Sarah Lester, Neil Hirst and Simon Buckley, conducted a case study that examined impact of research on climate mitigation in helping to shape public policy, markets, and wider societal debates. At the Sustainability Research Institute at the University of Leeds, Anna Wesselink and Andy Gouldson explored how universities link with regional and local policy-makers and economic actors on the issue of climate change. The research

focused on work to achieve the implementation of sustainability (and particularly low carbon) policies at local and regional level. All the research undertaken by the four research 'labs' is available in separate publications, and findings and insights from this work have fed into the writing of this book.

From our own perspective at the LSE Public Policy Group, our project has looked at broader and more generic themes of academic impact, with special emphasis on the field of the social sciences. Patrick Dunleavy and Jane Tinkler will also publish *Maximizing the impact of your research: A handbook* (2014) that offers a more practical guide for academics of all disciplines, not just social sciences. In this book, however, we have aimed for a much broader and more expansive look at the social sciences as a discipline and a profession, its scale and value in society, its relationship with STEM (Science, Technology, Engineering and Maths) disciplines, and its future in an ever-changing digital and globalized world.

Our approach has been multifaceted, encompassing a strong research strand and also a strong social media and communication strand. Both strands have had a mutually enhancing effect, and from a methods perspective, we have found that building this integrated approach from an early stage has the potential to radically boost the efficacy, impacts, and 'creative ambience' of a longer-term research project. We began in 2011 by setting up the *Impact of Social Sciences* blog, at http://blogs.lse.ac.uk/impactofsocialsciences/. Through proactive commissioning of articles and posts, we developed this multi-author blog into one of the foremost points of reference for anyone interested in the ever-growing field of academic impacts and knowledge exchange. The blog has meshed with a strong social media presence, particularly on Twitter (@LSEImpactBlog), and this has amplified the profile of the project, and has galvanized a strong community of interest. This has made it easier to publicise impact conferences and seminars throughout the three years. The blog has also produced a continual flow of interesting and challenging articles from a wide range of experts, and this has done much to enhance our own understanding of the issues and the challenges involved. From a methods perspective, we would advocate that every large or long-term research project should run a multi-author blog of this kind in parallel with the actual research.

The second strand therefore has been the research itself. For much of the research period, we have had a team roughly equivalent to five full time members of staff working on all aspects of the work described here below. At different stages throughout the project, this has been supplemented by other temporary staff. As much of the research has involved non-reactive or 'unobtrusive' forms of inquiry (Webb et al., 1999; Lee, 2000), particularly web-based census, we have at times recruited small groups of Masters-level students to carry out coding work. These are described in the relevant sections below. We have listed all the key staff members who have contributed to the research in the Acknowledgments at the start of the book.

From the early stages of the research it became clear that it is difficult to research impacts without having a fairly clear idea about what we mean by the term 'impact' and how we might go about defining it. Indeed, the many interviews and conversations that we have conducted have shown that impacts can be understood or interpreted in a great variety of ways, and that there is a high risk of ambiguity and talking at cross purposes if the limits and intricacies of the concept are not at least discussed in advance. When a delegate at an early conference made the valid point that we needed a definition of impacts before we can start researching them, we fixed upon the following definition:

> *a recorded or otherwise auditable occasion of influence from academic research on another actor or organization.*

This is intentionally a minimal interpretation of the concept. The idea of an 'occasion of influence' can encompass a great many things, from formally published pieces of academic work, to briefings given by academics to practitioners of one kind or another, to fleeting chats at drinks parties between academics and people in positions of power, and so on. The other important aspect of this definition is that these occasions of influence must be recordable or auditable in some way or other. We must be able to identify them, perhaps even quantify them, even if they are but small steps on a long path to achieving some kind of impact or influence at the end. Impact is usually demonstrated by pointing to a record of the active consultation, consideration, citation, discussion, referencing or use of a piece of research. In the modern period this is most easily or widely captured as some form of 'digital footprint' (e.g. by looking at how

often other people cite different pieces of research in their own work). But in principle there could be many different ways of demonstrating impact, including collecting the subjective views of a relevant audience or observing the objective behaviour of members of that audience. This presents considerable methodological challenges for those interested in demonstrating their own impacts, and even more so for researchers (such as us) interested in evaluating and measuring impacts from an objective third party perspective.

One of the first methodological hurdles is to unpack what exactly we are talking about when we talk about impact. It should be clear already that our definition above is fairly minimal, in that it does not commit itself to defining impacts exclusively in terms of net outcomes. It is important here to be able to maintain a clear view of potentially complex chains of causality, and at the same time, maintain a degree of realism about the extent to which a particular outcome can be said to be attributable to a piece/body of academic work or an intervention by an academic/group of academics.

Figure A.1: Spectrum of impacts and feasibility of measuring them
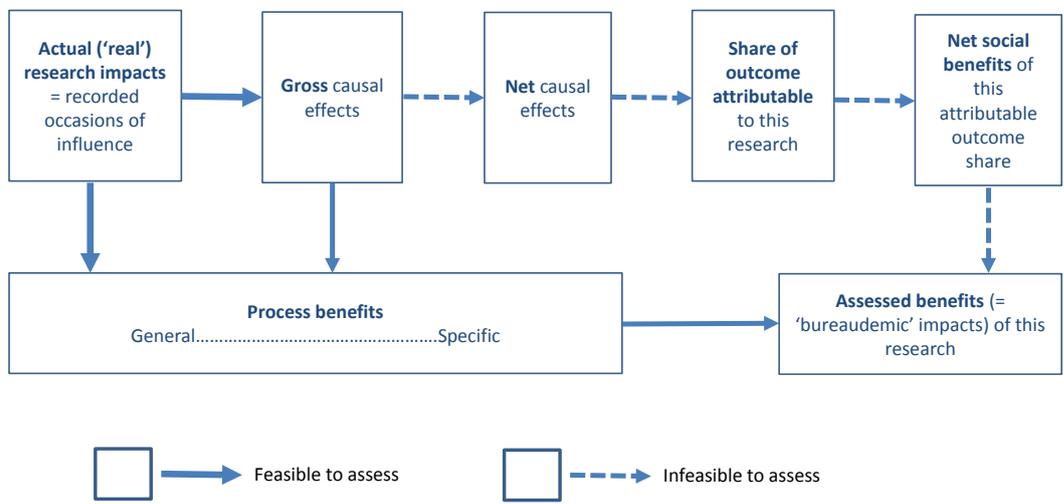

Figure A.1 helps to visualise this potential complexity. On the left-hand side, we start with our definition, 'recorded or otherwise auditable occasions of influence'. Academics, in all manner of ways, generate these, and it is feasible with careful thought and good metrics to assess their 'gross causal effects'. However, it is much harder and much less feasible to make the next step to the right and be able to accurately assess

their '*net* causal effects'. In order to do so, we would have to identify the overall change or outcome, isolate every other possible causal influence (not related to the academic's own occasions of influence), and be able to come to some kind of reliable judgement about the overall net effect of the academic's impact in bringing about that particular outcome. One of the core messages of this book is that it is challenging enough to find ways of assessing and measuring 'gross effects', let alone to be able to measure 'net effects' with any reliability (despite the often grandiose claims of academics or research councils). We can of course use process tracing or detailed case study analysis, but this is not recipe for large-scale and systematic comparative assessment of impacts. As we move rightwards across Figure A.1, we head towards realms of impossibility; that is being able to say anything conclusive about 'net social benefits of the attributable outcome share'.

We have tried to show in the book some of the problems with expecting to operate in this realm of infeasibility. We have certainly evidenced a great deal of scepticism and criticism about the expectation embodied in the current Research Excellence Framework (REF) that academics should be able to demonstrate 'net causal effects' or 'net social benefits' of their work. Our conceptual and empirical approach has been orientated more towards the left-hand side of the schema, looking at the specific complexities of actual research impacts in the social sciences and pushing the boundaries further forward in terms of developing methods and metrics to measure these things in a large-scale systematic way. At times, we do venture tentatively towards the realms of infeasibility, particularly in some of the more in-depth qualitative comparative work, but for the most part our concern is with how we can build much stronger methods and approaches to evidencing the dynamics on the left-hand side of the schema, i.e. gross causal effects of recordable or auditable occasions of impact.

We have drawn attention therefore to the difficulties of isolating the effects of academic work on a particular societal outcome. But another area of complexity lies in understanding which factors contribute to academic work having impact. These are no less complex. Even if this is more feasible, it is none the less far from straightforward in conceptual or methodological terms. Can we say, for example, with any certainty what the necessary or sufficient conditions are for academics or their research to have impact? The short answer to this question is basically 'no'. But the progression of the

chapters throughout the book each have a good stab at getting towards some indicative answers even if they are not categorical. Each of the chapters comprises distinct methodological approaches, and each attempts to build to the bigger picture by offering perhaps more clarity while at the same time introducing ever-more complexity. Chapter 3, for example, uses multivariate regression to model the relationship between different types of academic, their impacts in an academic domain, and their wider impacts in external organizations. In recognizing the limitations of formal regression techniques, Chapter 4 uses a 'qualitative comparative analysis' (QCA) approach to dig down into some of the inherent variations across academics and their impacts (see Ragin, 2000), and deliver perhaps a more sophisticated in-depth picture of the dynamics involved. In Chapters 5 to 7 we dig deeper into these dynamics using a combination of quantitative sector-specific data analysis and in-depth interviewing with academics and research users. All of these methodological approaches have something to offer. It is important that we develop measures that are expansive enough to deal with systematic comparison of impacts across large numbers of academics. Hence, the heavily quantitative regression-influenced approach is important. But at the same time, it is difficult to escape the fact that understanding the inherent multidimensionality of impact requires more in-depth qualitative analysis of one kind or another.

Reaching some kind of satisfactory integration of these different approaches has been central to the whole ethos and practice of the research in this book. This does not mean however that we have not sought a kind of über-integration of these different methods into one defined approach. Even though each of these chapters has involved distinct methodological approaches, it is obvious that one approach or chapter alone is not sufficient to capture the many aspects of the problem. One might argue here, for example, that an approach such as QCA incorporates quantitative and qualitative approaches in one such integrated package, and to some extent, this is right. But even though our QCA analysis in Chapter 4 embodies a vast amount of inquiry in some basic set-based parameters, it suffers like any other approach from its inherent limitations. Although it provides an integrated way of dealing with large amounts of qualitative information, it has limitations in that it relies on a high degree of subjective judgement by the researchers involved (however much these judgements are underpinned by data and honest inquiry), and this is often difficult to replicate or reproduce in standardized

ways. Regression-based approaches must therefore be seen as a countervailing response to these limitations, even though they are also obviously constrained by their own inherent limitations. Our overall approach, if it can be called 'an approach', has been to juxtapose these distinct approaches in one volume. There has been no one method, but rather a loose triangulation of some fundamentally different methods. It is a luxury of publishing this work in research book format is that we can juxtapose and contrast different approaches in different chapters, and draw on them all holistically by way of conclusion.

Some general principles have been important to our methods approach none the less. First, we have sought a good balance between non-reactive and more traditional reactive techniques. By 'non-reactive' or unobtrusive, we refer to measures that do not involve direct intervention with subjects of the research, in this case, say, academics or university departments. By 'reactive', we refer to measures that directly involve the subjects, notably interviewing and survey-based work. The non-reactive methods have relied very much on a second major principle - the use of digital and web-based resources. Many of the specific methods described below involve strong digital-era characteristics, and for further discussion of digital-era methods, see Dunleavy (2010). In short, the web and websites can be seen as a rich source of clues or 'traces' about the priorities and behaviours of individuals or organizations. In that vein, we can use tools such as Google or manual website review as a means to evaluate these traces or footprints that these individuals and organizations leave in going about their routine or daily activities. We have seen for example in recent years how researchers can use anonymised transactional data, such as from Twitter, to analyse broader patterns of behaviour of certain groups. This is a good illustration of the new research possibilities that non-reactive methods in the digital-era can offer. At the heart of this non-reactive approach is a set of assumptions that can be summarized in the following matrix.

Figure A.2 Organizations underlying patterns of activities and their online presence

	Academic is actually doing…	
Academic represents themselves online as doing…	**A lot**	**Not much**
A lot	1. Web census analysis correctly identifies high	2. 'Façade' activity

	activity situations	
Not much	3. 'Stealth' activity	4. Web census analysis correctly identifies low activity situation

The four possible fields in the matrix above show the relationship between what we find when we use digital methods, and what is happening in reality. The two shaded fields (1 and 4) represent mutually confirmatory positions in which the digital signs we find reflect accurately what is going on in reality. For example, say we search for an academic Jane Smith by typing her full name into Google and recording all the references we find to her. We find a great many, in other words, her digital footprint is large and obvious. We then go and talk to her clients, employers, and colleagues, and we establish that this digital footprint bears a close resemblance to reality. Jane Smith is in fact a busy, hard-working, and potentially impactful academic. We might however find the opposite, namely that she has no visible digital footprint, and that when we go and talk to stakeholders, they haven't heard of her. Even though this is a different picture, we still have a fairly high degree of assurance that not much is going on. These alternatives are depicted by the shaded fields in Figure A.2.

The other two options in the matrix depict entirely contradictory positions – either 'façade' or 'stealth' activity. By façade activity, we find a lot of digital references to the activity, but when we go and check with relevant stakeholders, we find perplexingly little sign of this activity. By stealth activity, we find the opposite, in the sense that there is no digital footprint, but stakeholders confirm a different picture of much activity and effort. The former depicts a situation in which the academic is somehow generating lots of noise and coverage about themselves, but not actually backing this up in reality. The latter depicts a situation in which academics are doing lots, but for one reason or another, not telling anyone it and managing to stop other people or organizations mentioning it. The important point here is that both of these positions are difficult to maintain for very long. Doing façade activity is sooner or later found out. Doing stealth activity is sooner or later revealed or uncovered by other stakeholders if it is having any impact at all. As a result, most cases, indeed nearly all cases will sooner or later settle in either fields 1 or 4 in the matrix above. They will find equilibrium either as confirmed high activity, confirmed low activity, or somewhere along the diagonal between the two. Having used digital methods regularly in our own

research for nearly two decades, we have found that high level of trust can be placed in such reasoning. The relevance of these principles becomes clear as we discuss methods in more detail below.

A2. Scoping the 'social sciences'

Just as it was important to say exactly what we mean by 'impact', it is no less important to define what we mean by 'social sciences'. From an early stage we developed a 'blueprint' for the subject disciplines that we have included under this general umbrella term. Clearly, this is not an exact mapping, in that often social science disciplines or sub-disciplines cross over into other non-social science areas, or academics working in one field will collaborate with academics in other fields. In order to begin to build a blueprint for the social sciences, we downloaded the most recent data from the Higher Education Statistics Authority (HESA) on subject classification across all university disciplines, and created a long list of subjects organized by their primary JACS code (Joint Academic Coding System) and sub-level JACS code. These codes provide standard classification for all subjects taught at UK universities. PPG staff worked independently through this long list of subject disciplines, categorizing each subject group into one of three options:

- *Core social science* – subject area is predominantly or completely social science;
- *Cross-over social science* – subject area has elements of social science, but also crosses over into other areas such as STEM, humanities, or creative arts;
- *Not social science* – subject area is predominately or completely in another area.

In order to support our decision-making we used JACS sub-codes and their descriptions. In cases where these sub-groupings seemed predominately social science in orientation, we coded these as 100% social science. For subjects that obviously crossed over into other areas, we used these sub-groupings to get an impression of what proportion of the whole subject could be reasonably described as social science related. For example, psychology (JACS C800) is divided up into 11 sub-disciplines, approximately five of which can be reasonably classified as heavily social science related (those shaded dark in the Figure A.3 below).

Figure A.3 Allocating sub-disciplines to social science or STEM classification using JACS codes

C800	**Psychology**	Scientific enquiry into behavioural and mental processes. May include study of the brain and brainwaves, sense, and biological and physiological bases of behaviour.
C810	Applied Psychology	The effect of human factors in psychological processes.
C811	Occupational Psychology	The application of human factors in psychology.
C812	Educational Psychology	The study and application of psychological processes involved in optimising learning and teaching.
C820	Developmental Psychology	Concerned with behaviour viewed from a developmental perspective.
C830	Experimental Psychology	Scientific investigation into fundamental psychological processes.
C840	Clinical Psychology	The study of psychological disorder.
C841	Health Psychology	The study of the maintenance of psychological well-being.
C850	Cognitive Psychology	The scientific study of the mechanisms and processes associated with perception, learning, memory and thinking.
C860	Neuropsychology	The explanation of behaviour in physiological terms.
C870	Psychometrics	Use of measurement and quantitative techniques in psychological testing.
C880	Social Psychology	The study of the behaviour of individuals in society.

In cases such as this, in which the main discipline clearly incorporated social science sub-elements, we checked the number of undergraduate and post-graduate students in each of these sub-groupings, and estimated the proportion of the subject that could reasonably be termed 'social science'. These estimates were inevitably very rough, and not in any way exact proportions. To reflect this we restricted our estimates to broad categories of 25%, 50%, 75% or 100% fully social science. The proportions are shown in Figure A.4 below.

Based on this blueprint, we calculated estimates for the number of students and staff in the UK social sciences. We had submitted an application to HESA in May 2012 asking for more detailed data than was available publicly. Remarkably, HESA at the time did not publish (and still do not) data in sufficient detail to allow estimates on

numbers of students and staff in the UK social sciences. We therefore submitted a request for the following datasets, at a cost to the project.

- Number of students studying undergraduate and postgraduate courses in subject disciplines included in our social science blueprint;
- Number of staff working in either teaching or research posts that had received their final qualification in a subject discipline in our social science blueprint;
- Workforce destinations of students leaving full or part time university education, by type of role and type of sector; and
- Financial expenditure and grants flowing to university social science departments, by cost centre.

The charge paid for these data was in effect a license payment, and we were obliged therefore to delete all 'unprocessed' datasets from our LSE hard disks once the licence period had elapsed. Figures 1.2 to 1.9 are calculated based on these HESA data for 2011-12.

Figure A.4: Individual subject areas and their allocation to discipline groups

General subject area as defined by HESA and JACS	Specific discipline	Percentage allocation across four general areas			
		SS	STEM	HUM	CAD
Education	Academic studies in Education	100			
Social studies	Anthropology	100			
	Economics	100			
	Human and Social Geography	100			
	Politics	100			
	Sociology	100			
	Social Policy	100			
	Social Work	100			
Business & administrative studies	Accounting	100			
	Business studies	100			
	Human Resource Management	100			
	Management studies	100			
	Marketing	100			
	Tourism, Transport and Travel	100			
	Finance	75	25		
Mass communications & documentation	Information Services	100			
	Publicity studies	100			
	Media studies	100			
	Publishing	100			

	Journalism	50		50	
Architecture, building & planning	Planning	100			
	Architecture	25	25		50
Mathematical sciences	Operational Research	50	50		
	Statistics	50	50		
Biological sciences	Psychology	25	75		
Computer science	Information Systems	25	75		
Historical & philosophical studies	History by period	25		75	
	History by area	25		75	
	History by topic	25		75	
	Archaeology	25	50	25	
	Philosophy	25		75	
	Theology and Religious studies	25		75	
Languages	Linguistics	50		50	
Law	Law by area	50		50	
	Law by Topic	50		50	

A3. PPG dataset of 370 UK-based academics

At the heart of the quantitative analysis in this book has been the vast and, as far as we know, unique dataset that our research team has collected about 370 randomly sampled UK-based academics. The dataset is introduced in Chapter 2, along with general description of its contents, and it serves as a recurring point of analysis throughout subsequent chapters. Full compilation of the dataset took around two years in total, beginning in February 2010 and reaching completion by end of 2012. It is based entirely on non-reactive methods of data collection, in the sense that none of 370 academics randomly sampled and included in the dataset knew that their academic and external impact profiles were subject to this detailed analysis. We did not notify these academics, and have kept their identities and search results entirely confidential throughout the research. All analysis is however based on publicly available information. In Chapter 4, we have included 15 academics in our QCA analysis. These academics were found through interviews and independent research, and once we had interviewed them to find out more about their impacts and perceptions of them, we replayed these unobtrusive searches in order to compare our high-impact academics with the 370 academics in the dataset as a whole. We discuss this in more detail below in the QCA section.

We compiled our dataset in three consecutive waves, encompassing 17 disciplines in total. Our first wave (beginning February 2010) incorporated only core

social science subjects, and these are listed in Figure 3.2. The second wave incorporated five 'cross-over' subjects, and again these are listed in Figure 3.2. The third and final wave focused on five STEM subjects. For each discipline we randomly selected five universities from a full list of UK universities, and then compiled a list of all academic staff working in each of the chosen departments. From this list of academic staff, we then randomly selected around 20 staff for each discipline. To this we added a further 20 staff from selected LSE departments, in order to be able to compare these other universities with our own institution. Further explanation on the subjects included and variations in sampling are described in the text in Chapter 3.

Once we had compiled a list of randomly sampled academics, we were able to run our non-reactive Google searches for each of them. These are described already in some detail in the text in Chapter 2, and we do not repeat this description here. Rather we have copied the actual survey instruments used, and provide a brief description of the training and process involved in the work done by our coders to build impact profiles for each of these academics.

In order to carry out the coding work we hired a group of 12 LSE Masters students. We ran two detailed training sessions in which we introduced the project to the students and took them through the three coding sheets in detail, allowing them ample time to work through them in a supervised environment and ask questions. We then ran pilots with this first cohort of coders in order to iron out issues around comprehension and procedure. It is not possible to completely eliminate inconsistencies in coding across a group of 12 students, especially when the students were being asked to work on their own at different times. However, we reviewed the pilot returns in detail, reiterated or refined guidance where necessary, and strongly emphasized the fact that PPG researchers were keeping close track of the quality and consistency of each survey return. For each of the three waves of data collection, we tried to retain the same group of coders, but given that this work took place during a 30-month period, we inevitably had to add new coders as some completed their studies during the course of the project.

We utilised Google Scholar for these searches, rather than traditional databases such as the Web of Science as its coverage for social science literatures is so much more comprehensive. The first of the three searches used Google Scholar to find all academic and 'grey literature' outputs by that academic in a five-year period from January 2004 to

December 2009. This time frame includes the Research Assessment Exercise (RAE) of 2008, thus delivering the added advantage of an expectation that academics would be attempting to raise their game by boosting their publications turnover during this period in response. The coding sheet employed is copied here below.

SEARCH 1 Google Scholar search for academic's outputs

1. *Go to Google Scholar advance search*

2. Go to Author: Return articles written by
- Input the full name of the academic using quotation marks.

3. Go to Date: Return articles published between:
- Input the years 2004 to 2009

4. Go to Collections: Articles and Patents

- Search articles in all subject areas (☐ include patents): Turn off the patents

5. Click on "Search Scholar"

Output Directions

1. GO TO THE "GOOGLE SCHOLAR SHEET" IN THE EXCEL DATABASE

Here is an example to give you an idea of how to complete the information:

*New Public Management Is Dead--Long Live Digital-Era Governance **[PDF]** - LSE Article Finder*
*P **Dunleavy**, H Margetts, S Bastow, J Tinkler - Journal of Public Administration …, 2006 - PMRA*
Cited by 101 - Related articles - BL Direct - All 9 versions

Work through each of the search results, using a separate line in the Excel spreadsheet for each result. For each result / line, do the following:

***A) OUTPUT NAME**: in this column copy and paste the name of the output you see.*
- In the example shown this is: "New Public Management Is Dead--Long Live Digital-Era Governance"

***B) YEAR**: note the year of the output you see.*
- In the example shown this is 2006

***C) NUMBER OF CO-AUTHORS**: note the number of co-authors (not including the academic).*
- In the example shown this is 3

***D) OUTPUT TYPE**: note ONE of the following codes:*

[ART]   Academic journal article
[BA]   Book – academic is author
[BE]   Book – academic is editor
[BC]   Book chapter – academic is chapter author

[CIT]   *"Citation" (see example below)*
[CP]   *Conference presentation or the actual paper*
[DI]   *Discussion or commentary article*
[RC]   *Research report – for commissioning body*
[RI]   *Research report – independent academic*
[WP]   *Working paper*
[OTH]   *Other (please specify in the column NOTES)*
[NA]   *Not Available*
[N/O]   *No Output. Use this if no relevant output to the academic is found*

- In the example shown, this is Academic Journal Article [ART].

E) SOURCE TYPE*: please specify whether the source is an internal website (IW) - where internal refers to the home institution to which the academic belongs - or an outward (or external to the institution) facing (OWF) website.*

F) SOURCE NAME*: note the name of the source (journal or other publication) in which this output has been published (if applicable).*
- In the example above, this is "Journal of Public Administration Research and Theory".

G) COMMISSIONING BODY*: note the appropriate code name of the commissioning body as shown below (NOTE: this is usually only in cases where you have found a research report). Select only ONE code:*

[CG]   *UK Central government*
[LC]   *UK Local government*
[GI]   *Government international*
[SOC]   *Third sector or society*
[TT]   *Think tank / research institute*
[UUK]   *University UK*
[UINT]   *University international*
[IO]   *International organization*
[PS]   *Private sector*
[OTH]   *Other (specify)*

- In the example provided, this is "[NA]" as a journal article does not have a commissioning body.

H) NUMBER OF CITES*: note the number of cites that Google Scholar gives you in the "cited by" result.*
- In the example above that number is 101. Note that if the work has zero cites this link will not show up. Therefore, note 0.

The second of the three searches also uses Google Scholar to find all the publications by other authors between January 2004 and December 2009 that mention the academic in our dataset. These are commonly known as 'inward references' in the sense that we are recording the number of references to our academics by any other academics. A key difference here is that these references can be to any aspect of the academic's research, not just outputs published between 2004 and 2009. The publications that are referencing the academic or their work must however be published during this five-year period. The

value of this measure is that it gives a good impression of the reputation or profile of the academic built up over their whole career, and not just a narrow period of the last five years. The potential for popular academics to record many hundreds of inward references meant that we limited the number of relevant results recorded by our coders to 100. To find 100 relevant results, the coders had to work through many more results ignoring those that were out of our scope. The coding sheet used for this part of the survey is shown here below.

SEARCH 2 Google Scholar 'inward reference' search

FOR THIS SEARCH YOU WILL RECORD ONLY THE FIRST 100 RELEVANT HITS

1. Go to Google Scholar advance search:

2. Go to Find Articles: With the exact phrase
- Input the name of the author, as appears in the Excel file in quotation marks.

3. Go to Author: Return articles written by
- *Input a negative sign and then the full name of the academic using quotation marks. This is important as it means you should not get any results written by the academic (which you found in search 1) but only people who have written ABOUT the academic.*
- *For example: -"Patrick Dunleavy" (check there is no space between the negative sign and the quotation marks)*

4. Go to Date: Return articles published between:
- *Input the years 2004 to 2009*

5. Go to Collections: Articles and Patents

- *Search articles in all subject areas (☐ include patents): Turn off the patents*

6. Click on "Search Scholar"

OUTPUT DIRECTIONS

1. GO TO THE "GOOGLE SCHOLAR INWARD" SHEET IN THE EXCEL FILE

We provide you this example to guide you how to fill in the information:

Delegating powers in the European Community **[PDF]** - *LSE Article Finder*
F Franchino - British Journal of Political Science, 2004 - Cambridge Univ Press
... I am indebted to the Journal reviewers and to Cliff Carrubba, **Patrick Dunleavy***, Jon Golub, Simon*
Hix, Dan Kelemen, Amie Kreppel, Mathias Koenig-Archibugi, Jeffrey Lewis, Fabrizio Gilardi, Mark
Pollack, Berthold Rittberger, Cheryl Schonhardt-Bailey, George Tsebelis, Mark ...
Cited by 54 - Related articles - BL Direct - All 4 versions

Work through the FIRST 100 relevant HITS noting the following information in the columns:

A) YEAR OF OUTPUT: note here the year of the output from the academic we are analysing
- Leave the column blank if the reference is just a mention or an acknowledgement.
- In the example above this would be left blank as this is just a thank you note to Patrick Dunleavy for comments.

B) GEOGRAPHIC AREA OF HIT: note the geographic area of the cite (i.e. which area is the cite originating from?). Select ONE of the code categories as below:

[UK]	*UK*		*[ME]*	*MIDDLE EAST*
[EU]	*EUROPE*		*[AFR]*	*AFRICA*
[NAM]	*US or CANADA*	*[OC]*	*OCEANIA*	
[LA]	*LATIN AMERICA*		*[AS]*	*ASIA*
[NS]	*NOT KNOWN*			

- In the example provided above, select [UK], since the British Journal of Political Science is published in the UK.

C) FORMAT OF HIT: code the type of output. Select ONE of the below:

[ART]	*Academic journal article*
[BA]	*Book*
[BC]	*Book chapter*
[CIT]	*"Citation" (see previous example)*
[CP]	*Conference presentation or the actual paper*
[DI]	*Discussion, commentary article or book review*
[RR]	*Research report*
[WP]	*Working paper*
[NA]	*Not Available*
[N/O]	*No Output. Use this if no relevant hit to the academic is found*
[OTH]	*Other (please specify)*

- In the example above, this is [ART] "Journal article"

The third part of the survey moves the focus from specifically academic outputs towards references from the wider world of society and external references. Here we asked our coders to move to the full Google search engine (i.e. not Google Scholar) and to record all or any references that are made to the academic or their research by external organizations. The timeframes here are not restricted, and hence potentially cover any work by the academic or references to the academic. We include all types of organizations here, ranging through other universities or research centres, libraries, public sector or government bodies, civil society or charitable bodies, private firms, press and media, and so on. This part of the survey is designed to give a picture of the profile of the academic more widely in society. Again, in order to limit the potentially

large number of references, we asked our coders to record only the first 100 relevant results. The coding sheet is copied here below.

SEARCH 3 Full Google search engine

FOR THIS SEARCH YOU WILL RECORD ONLY THE FIRST 100 RELEVANT RESULTS

1. Go to Google advance search

2. Go to Find web pages that have..., all these words:

- Search term: Full name of the academic (or common AKA). Use quotation marks

3. Click Advanced Search

OUTPUT DIRECTIONS

1. GO TO THE "FULL GOOGLE SEARCH" SHEET:

We provide you this example to guide you how to fill in the information:

*New Statesman - **Patrick Dunleavy***
*Articles by **Patrick Dunleavy**. Results 1 to 3 of 3. World Affairs **...** Yes, write **Patrick Dunleavy** and Stuart Weir. The 1997 victory was built on sand **...** www.newstatesman.com/writers/**patrick_dunleavy***

SO YOU CAN IGNORE ANY HITS FROM THESE NON-RELEVANT SITES:
GOOGLE SCHOLAR
GOOGLE BOOKS
ANY BOOK RETAIL SITE
ANY PAGES FROM THE ACADEMIC'S OWN INSTITUTION
THE ACADEMIC'S OWN WEBSITE

For the relevant results you should do the following:

A) WEB ADDRESS: *copy the full URL web address. In the case above, this is:*
http://www.newstatesman.com/writers/patrick_dunleavy

B) SUFFIX: *note the suffix (i.e. co.uk / com / gov.uk / .org). In the example this is .com.*

C) SECTOR: *this corresponds to the sector of the citing organization.*
- Choose ONE of the codes from the following list. (For help categorising, refer to the table on page 3)

[DEPT]	*University department or other general university*
[UINST]	*University research institute*
[UJNL]	*University journal*
[ULIB]	*University library*
[UPUB]	*University publisher or press*

[NTW]	Academic network
[JNL]	Academic publisher and journal
[PUB]	Academic publisher
[LIB]	Library – independent
[REPLIB]	Library – repository
[AGG]	Online aggregator website
[TT]	Research institute or think tank
[LNSOC]	Professional or learned society
[MP]	Media or press
[IND]	Individual websites or blogs
[CG]	UK Central Government
[LG]	UK Local or regional government
[GI]	International government
[SOC]	Civil society and third sector
[PSL]	Private sector - major
[PSM]	Private sector - mediating
[PSS]	Private sector - minor
[PSREP]	Private sector - representative
[OTH]	Other

- In the example provided above, you should put "MP" as New Statesman is a media piece.

D) PAGE CONTENT. *This refers to the type of output that you are looking at on the screen.*
- Choose ONE of the following codes as shown below:

[ART]	Academic article (or detailed information about it)
[REP]	Research report (or detailed information about it)
[REV]	Review or commentary
[NWS]	News or press article(s)
[BIB]	Bibliographic information listing academic's work
[BIO]	Biographical information about the academic
[CON]	Conference or event details in which the academic has/will participate
[MEM]	Membership related information on posts held or membership of committees
[RL]	Reading list. E.g. online syllabus that references the academic.
[WS]	Personal website.
[BLOG]	Blog
[OTH]	Other. Please Specify

- In the example provided, this should be NWS.

E) BY/ABOUT:

- Input BY if the reference is written by the author
- Input ABOUT if the reference is about the author

- In the example provided this is BY since it is an article written by Patrick Dunleavy.

F) SINGLE/MULT: Input SINGLE or MULT if the referenced link is a single or co-authored piece, respectively.

- In the example provided this is [SINGLE] since this is an article written by Patrick Dunleavy alone.

G) TYPE OF REF: Input one of the following codes to describe the type of reference with respect to the academic:

[PER]	*Personal mention only*
[GEN]	*General body of work (i.e. author's work on electoral systems)*
[PRJ]	*Specific Project / team*
[ART]	*Academic article*
[BA]	*Book – academic is author*
[BE]	*Book – academic is editor*
[BC]	*Book chapter – academic is chapter author*
[CP]	*Conference presentation or the actual paper*
[DI]	*Discussion or commentary article*
[RC]	*Research report – for commissioning body*
[RI]	*Research report – independent academic*
[WP]	*Working paper*
[OTH]	*Other (please specify)*

- In the example provided, this is DI since this hit is a commentary article.

H) WORLD REGION: Input one of the following codes to describe the world region in which the referencing website is located

[NAM]	*North America*
[CENAM]	*Central America & Caribbean*
[LATAM]	*Latin America*
[UKI]	*UK & Ireland*
[NAFR]	*North Africa*
[SSAFR]	*Sub-Saharan Africa*
[SCAN]	*Scandinavia*
[EU]	*Western Europe*
[CENEU]	*Eastern Europe, ex-Soviet, & Turkey*
[ME]	*Middle East*
[CENASIA]	*India & Central Asia*
[CHKJAP]	*China, Japan, Taiwan, Hong Kong & Korea*
SEASIA	*South East Asia*
AUSNZ	*Australia & New Zealand*

There were of course certain limitations in our approach of searching on full names of academics in Google. For a start, sometimes the particular name would be very common (e.g. 'Jon Smith') or would be identical to the names of other well-known celebrities (e.g. 'James Brown'), and hence our coders would have to use a certain degree of initiative in filtering out the wrong people from the search. In most cases, this was self-evident in the types of things that the search result was referencing, but this was not always the case, particularly for academics who shared names with other academics, not

least those who worked in similar fields. For very popular public figures, often coders would have to work through literally hundreds of Google results before the 100 relevant responses were found. Although time consuming, we asked them to plough on regardless into the thousands of results in order to ensure that we had squeezed out all the possible references to the particular academic. Some academics however were simply invisible despite trying different permutations of their full name or even adding the word 'university' to the search in order to give the greatest chance of them being found.

A4. Coding framework for academic and external impact scores (Chapter 2)

At the end of Chapter 2 we use a simple coding framework to compile aggregate scores for 'academic' impact and 'external impact' for the academics in our sample. Set out in Figure 2.17, external impact is charted on the vertical axis, and academic impact on the horizontal axis, and each academic is scored out of a possible maximum of 6 points. As we explain in the text, this is a fairly crude preliminary picture of overall impacts, but it is a first step in assessing the combined weights of different academics across a broad range of impact-relevant activity. For each variable, we review the distribution of values across all academics in the sample, and then allocate each academic an indicative quartile value (0, 0.25, 0.5, 0.75, or 1) depending on how they perform on that particular variable. We show how we coded each of the 12 variables making up the 6-point scores on each axis.

a. ACADEMIC IMPACT SCORES

i. *Average academic journal articles published per year in the period 2004 to 2009*
   0 = None or no sign of any published articles
   0.25 = Less than 1 article per year
   0.5 = Less than 2 articles per year
   0.75 = Less than 3 articles per year
   1 = More than 3 articles per year

ii. *Average book outputs published per year in the period 2004 to2009.*

   Score is based on whichever is the highest between:

Authored or edited books only:

> 0 = No authored or edited books published
> 0.25 = At least 1 book published
> 0.5 = At least 2 books published
> 0.75 = At least 3 books published
> 1 = More than 3 books published

Average number of book chapters per year (2004 to 2009):

> 0 = None
> 0.25 = Less than 1
> 0.5 = Less than 2
> 0.75 = Less than 3
> 1 = More than 3

iii. *Total number of citations to all academic's work published 2004 to 2009*

> 0 = Less than 10
> 0.25 = More than 10
> 0.5 = More than 100
> 0.75 = More than 500
> 1 = More than 1000

iv. *Number of citations for most highly cited output (only 2004 to 2009)*

> 0 = Less than 10
> 0.25 = More than 10
> 0.5 = More than 50
> 0.75 = More than 100
> 1 = More than 200

v. *Total 'inward references' (2004 to 2009) to academic's career outputs (maximum number counted was 100)*

> 0 = None
> 0.25 = Less than 5
> 0.5 = Less than 25
> 0.75 = Less than 50
> 1 = More than 50

vi. *Academic's h-index for outputs published between 2004 to 2009*

> 0 = 1 or less
> 0.25 = Less than 3
> 0.5 = Less than 5
> 0.75 = Less than 10
> 1 = More than 10

b. EXTERNAL IMPACT SCORES

vii. *Total references to the academic found in our full Google search (maximum number counted was 100)*

>0 = None found
>0.25 = Less than 5
>0.5 = Less than 25
>0.75 = Less than 50
>1 = More than 50

viii. *Percentage of total references that were found in external, non-academic, domains*

>0 = None
>0.25 = 5 per cent or less
>0.5 = 20 per cent or less
>0.75 = 30 per cent or less
>1 = More than 30 per cent

ix. *Number of research reports written for external clients (i.e. not academic outputs) in full Google search and through searching Harzing Publish or Perish.*

>0 = None
>0.25 = 2 or less
>0.5 = 5 or less
>0.75 = 10 or less
>1 = More than 10

x. *Number of references to the academic found on civil society or third sector organizations' websites*

>0 = None
>0.25 = Less than 5
>0.5 = Less than 10
>0.75 = Less than 20
>1 = More than 20

xi. *Number of references to the academic found on search of the 'gov.uk' web domain*

>0 = None
>0.25 = Less than 10
>0.5 = Less than 30
>0.75 = Less than 50
>1 = More than 50

xii.   *Number of references per year to the academic found in a search of 'All World Publications' on the Nexis press database*

> 0 = None
> 0.25 = Less than 1 per year
> 0.5 = Less than 2
> 0.75 = Less than 3
> 1 = More than 3 per year

Scores out of 6 were summed for 'academic' and 'external' outputs, and Figure 2.17 charts the distribution of all academics.

A5 Qualitative comparative analysis of the determining factors of impact (Chapter 4)

In Chapter 4 we use a 'qualitative comparative analysis' (QCA) framework (commonly known as 'fuzzy set' analysis) to look in more detail at the factors determining high impact amongst social scientists. We discuss the general concept of QCA and its benefits in Chapter 4, and so do not reiterate these here. We do however introduce 16 individual sets that play a part in the overall analysis of the relationship between impacts and their determining factors, and we provide here more details about how these sets were defined and the general considerations that helped to influence our judgements about the degree of set membership. We work through each of these 16 sets in turn.

The QCA framework uses four groups of sets that draw on an extensive range of quantitative and qualitative data.

- *Academic impact profile* – their publishing record, the types of outputs they produced and the citations that these publications received *(Sets 1 to 4)*;
- *External orientation* – the importance that academics gave to being externally focused or trying to create impact *(Sets 7 to 10);*
- *Concentrated impacts* – whether the academic had direct relationships with individual sectors or organisations, whether funding had been received as a result of these contacts, and whether relationships were long standing or recurrent *(Sets 13 to 16);*

- *Diffuse impacts* – how wide ranging their external profile was, in media or in sectors, the numbers of research projects or reports undertaken with different external organisations *(Sets 19 to 22).*

a. ACADEMIC IMPACT PROFILE (page 90)

Set 1
Academic is a prolific publisher of highly cited journal articles
Academic is a prolific publisher of articles in peer-reviewed journals • Journal articles per year + since the first article published Used Harzing Publish or Perish (HPoP) to calculate the average number of journal articles published per year, since the first article published by that academic. The highest was 6.6 per year (Prof A) and lowest was 0.4. *Academic writes journal articles that are very highly cited* • Average citations per journal article Used HPoP to calculate the average number of citations per journal article. The highest was 260 (MBA G) and lowest was 0. • h-index and g-index for articles only Calculated h-index and g-index for journal articles only for each academic. The highest h-index was 53 (Prof A) and lowest was 0.
Set 2
Academic is a prolific publisher of highly cited books or book chapters
Academic is a prolific publisher of books and book chapters • Book outputs (all) + since the first book output published Used HPoP to calculate the average number of books and book chapters published per year, since the first book or book chapter published by that academic. The highest was 3.2 per year (Prof A) and lowest was 0.1. *Academic writes books or book chapters that are very highly cited* • Average citations per book outputs Used HPoP to calculate the average number of citations per book and book chapter. The highest was 46 (EProf H) and lowest was 2. • h-index and g-index for books or book chapters only Calculated h-index and g-index for book outputs only for each academic. The highest h-index was 24 (Prof A) and lowest was 1. *Academic is highly active in producing well-cited working papers and conference papers* • Number of conference papers and average citations • Number of working papers and average citations
Set 3
Academic has built a strong reputation specifically amongst academic community

- *Inward references by other academics to academic's published work*
  We replicated Google Scholar 'inward references' search for all 15 case academics (with max. 100 results). The highest was 100 (7 out of 15 academics) and the lowest was 7.

- *Presence of a Google Scholar Citation profile for the academic*
  Does the academic have a GSC profile page – yes or no? (3 out of 15 academics had one).

- *Number of journals edited*
  We searched academics' CVs and departmental webpages for evidence that they had edited journals either currently or in the past.

- *Head of research centres or units*
  We searched academics' CVs and departmental webpages for evidence that they had headed research centres, units, or academic departments, either currently or in the past.

- *Number of governance positions held on academic or professional associations*
  We searched academics' CVs and departmental webpages for any evidence of academics having had governance positions with associations.

- *Visiting positions at other universities*
  We searched academics' CVs and departmental webpages for any evidence of visiting academic positions at other universities.

Set 4
Academic has been successful in winning RCUK funding over the years

- *Number of projects won from RCUK and other academic funders*
  We reviewed all CVs, departmental webpages, research council websites, and other documentation to find any evidence that academics had won research funding grants from the UK research councils or other UK-based academic funding bodies. Highest number of grants was 9 (Prof K) and the lowest was 0.

- *Value of projects won from RCUK and other academic funders*
  Where possible, we recorded the value of these grants, and calculated the total amount of research funding won from research councils and funding bodies. Highest was £1.5m and the lowest was 0.

b. EXTERNAL ORIENTATION (page 92)

Set 7
Academic makes a strong effort to build their profile using traditional and social media

- *Academic has an active Twitter account*
  We checked to see if academics were currently active on Twitter. (5 out of 15 – Prof F, MBA G, Prof B, Prof D, Prof J).

- *Can we find a LinkedIn page for the academic?*
  (4 out of 15 – SRF N, EProf H, Prof B, Prof J).

- *Academic frequently writes blog posts*
  (4 out of 15 – Eprof H, Prof F, MBA G, Rdr I).

- *Academic's research is strongly visible through a personal website*
  (12 out of 14)

- *Academic is proactive with media*
  We examined the transcript of our interview for signs that the academic proactively engages with the print or broadcast media.

Set 8
Academic is strongly integrated into relevant practitioner networks

- *Academic has worked extensively in other sectors relevant to their research*
  We examined the interview transcript and the academic's CV to find out whether they had spent time working in non-academic sectors relevant to their research. (4 out of 15 had done so – Prof F, MBA G, SL L, Prof J).

- *Academic does research that is strongly dependent on linking with practitioners*
  We examined the interview transcript for signs that the academic's work is dependent or closely integrated with the work or activities of practitioner organizations. For example, is it necessary that academics engage with external organizations to get relevant access or data?

- *Academic is very active at events and conferences specifically involving relevant practitioners sectors*
  We examined the interview transcript and other supplementary data for signs that the academic places high importance on attending conferences and events that involve practitioners from relevant external organizations.

Set 9
Academic places strong emphasis on making the impact of research explicit

- *Academic is a strong advocate for the need for academic research to have impacts*
  We examined the interview transcript for unprompted statements from the academic about the importance of having impacts and making their research relevant or useful for external organizations.

- *Academic emphasises strongly their entrepreneurial role*
  We examined the interview transcript for signs that academics strongly perceive their role as entrepreneurial in terms of finding real-life or commercial applications for their research. Any specific examples of academics marketing or spinning-off their research for commercial gain were scored highly.

• *Academic strongly emphasises the need to formulate their research from the perspective of the users* We examined the interview transcript for signs that academics were strongly emphasizing the need to package or shape their research outputs in ways that are directly attractive or applicable for external users. Academics who mentioned unprompted that they had redesigned outputs in this way, and could give specific examples of this, were scored highly.
Set 10 **Academic strongly emphasises importance of maintaining links with relevant practitioners**
• *Academic emphasizes unprompted the importance of staying in touch with practitioners* We examined the interview transcript for signs that academics strongly prioritized maintaining links with relevant practitioners.

c. CONCENTRATED IMPACTS (page 95)

Set 13 **Academic has accumulated considerable sums of money from the same or similar external organizations over the years**
• *Academic has received research money from the same organizations* We estimated total funding from external organizations in similar fields based on the interview transcript and review of the academic's CV. The largest amounts were up to £10m from government organizations over the course of a career. • *Academic has worked with organizations in a recurring or rolling way* We tracked any recurring contracts or collaborative working with the same or similar organizations.
Set 14 **Academic has built strong relationships with specific individuals in external organizations over a period of years**
• *Academic's relationships are concentrated on key individuals in external organizations* We used interview transcripts to trace any examples of strong relationships over time between the academic and staff from external organizations.
Set 15 **Academic's external impact profile is strongly concentrated to a particular sector or organization**
• *Top scoring sector in external references %* We calculated the degree of concentration of references by external organizations to the academic or their research. For example, if an academic has a high proportion of references in one particular sector, such as government, we score concentration highly. If academic's references are dispersed across many different types of sector, we award a lower score. • *Top scoring individual organization %* We also looked for any prominent external organizations that were referencing the academic on more than one occasion. We calculated the top-referencing organization,

and the number of references to the academic. We awarded higher scores for larger proportions of references from one organization.
Set 16 **Academic has achieved considerable impacts with their work on specific organizations**
Academic's research is connected into the most senior levels in the organizations We examined interview transcripts (with academics and practitioners) for signs that the academic's work had received exposure or interest at senior levels of the organization.   *Users can identify strong specific benefits that the academic's research has brought their organizations* We examined interview transcripts for specific signs that external organizations could identify benefits to their organization. We awarded higher scores for those who could offer highly specific examples or illustrations.

d. DIFFUSE IMPACTS (page 97)

Set 19 **Academic has developed a high profile in the media and press**
Number of press mentions in our full Google search We totalled the number of references in our full Google search found in press or media publications. Highest was 22 (Prof F) and the lowest was 0.   *Average number of press mentions per year* We used the database Nexis UK to search for references to our academics in the world press and media. The search was restricted to January 2004 to December 2009 for consistency. The highest total was 38 per year (EProf H) and the lowest was 0.
Set 20 **Academic has strong visibility across a wide range of sectors**
Number of different sectors with at least 3 references Using our full Google search results we looked at the number of sectors making at least three references to the academic. We awarded higher scores for academics who received references across a higher number of sectors.
Set 21 **Academic publishes a broad range of research reports for different external organizations**
Research reports published - Number of organizations Using HPoP and our Google Scholar search, we counted the number of research reports written by the academic for external organizations. We awarded higher scores to those with more publications. Highest number of research reports for different organizations was 17 (SRF N) and the lowest was 0.   *Research reports - average citations* We looked at the average number of citations for these research reports, where available, using HPoP and Google Scholar. Highest average citation count was 37 (Prof K) and lowest was 0.

Set 22
Academic can show research or advisory links to a wide range of external organizations
• Academic mentions a very wide range of practitioners with whom they have worked We looked at academic CVs, interview transcripts, departmental websites, and any other information, and made a long list of all external organizations with which the academic had worked during their career. Highest number was 16 (SL M) and the lowest was 3.

The QCA scoring framework and the scores allocated are explained and presented in Chapter 4, and so we do not reiterate them here.

A6. Press and media search

We have conducted two separate press and media searches for this, one for the full sample of 370 academics included in the analysis in Chapters 2 and 3, and the other for the QCA analysis described above and featured in Chapter 4. Both searches were identical in terms of the process followed. We used the online press database Nexis UK to search across all 'All news, All languages' for the full name of the academic concerned, and limited the search to January 2004 to December 2009. We worked through all results recorded, saving the article concerned, and making a note of the name and type of the publication, and the global region. This work was time-consuming in that it was necessary to filter through the results in a fine-grained way to eliminate duplication of names and articles.

A7. Government domain search

As part of our analysis of external impact of our sample of 370 academics we conducted a systematic search of the UK government web domain using Google. We restricted the search to the domain gov.uk, and typed in the full names of each of our academics into the search engine. We then worked through the results for each academic, recording the name of the government organization referencing the academic, and the name of the particular research or work. Again, the results of these searches were recorded in aggregated terms, and fed into the overall dataset. We worked through the results in a fine-grained way to ensure that we were not counting references to individuals with the same name.

A8. Literature Search

We have accessed a vast amount of academic and 'grey' literature for this book and for the *Impact of Social Sciences* project as a whole over three years. Much of this has involved traditional desk-based research, either online or leafing through books available at the LSE library, one of the foremost leading social science libraries in the world. In each sector, we have carried out a broad review of existing literature that sheds light on the relationship between academic social science research and user organizations. Absolutely key to this whole venture has been the continual source of literature and insights provided through the *LSE Impact of Social Sciences* blog. This has provided a vital source of focus and information for us as researchers and authors of this book. The blog will hopefully continue to form a popular point of reference for anyone interested in the themes covered in this book.

A9. Interview Programme

Another major part of this research and the writing of this book has been the extensive interview programme carried out during the three years duration of the *Impact of Social Science* project. We have conducted around 165 interviews with academics, policymakers, business leaders and research directors, civil society groups, and those involved in impact and knowledge exchange. In commerce and business, we spoke with representatives from large and well known private sector firms, in finance and banking, hi-tech and web, retail, communications, amongst others. In civil society, we spoke with large and small charities, representative groups, lobbying and campaigning organisations, and voluntary organizations. In government, we completed extensive interviews with government chief scientific advisors, research directors, and other relevant staff. All interviews are done on a non-attributable basis, recorded, and transcribed. Due to the non-attributable status of these interviews, we do not list the names of those interviewed. But we are incredibly grateful to them all for taking the time to speak with us and sharing their helpful insights. We have however provided a list of organizations interviewed by type.

Universities and research centres
(56 interviews in total – numbers in brackets denote where we have spoken to an organizations on more than one occasion)

American Institutes of Research
Birkbeck College London
Birmingham University, Third Sector Research Centre
Bradford University, School of Social & International Studies
Bristol University, Law School
Brunel University, Health Economics
Brunel University, Law School
Cambridge University, Centre for Business Research
Cass Business School (4)
Durham University, Department of Anthropology
Durham University, Department of Geography
East Anglia University, Centre for Research on the Child & Family
Essex University, Department of Government
Glamorgan University, Faculty of Business & Society
Goldsmiths University, Department of Sociology
Herriot Watt University, School of Built Environment
Imperial College London, Grantham Institute for Climate
Imperial College London, Natural Sciences
Institute for Development Studies (IDS)
King's College London, Humanitarian Futures Programme
Lancaster University, Department of Sociology
Leeds University, School of Computing
Leeds University, School of Earth & Environment
Leicester University, Biology
Leicester University, School of Museum Studies
London Business School (3)
University of London
London School of Economics, LSE Cities
London School of Hygiene and Tropical Medicine
Manchester University, Manchester Business School (2)
Manchester University, School of Environment & Development
Melbourne University, Business & Economics
Nottingham University, Faculty of Social Sciences
Overseas Development Institute (3)
Oxford Brooks University, Social Sciences & Geography
Oxford University, Centre on Migration Policy & Society (COMPAS)
Oxford University, Experimental Psychology
Oxford University, Institute of Social Policy
Oxford University, Said Business School
Southampton University, Third Sector Research Centre
St Andrews University, School of Management
Surrey University, Digital Research Centre
Sussex University, Science and Technology Policy Research Unit
Sussex University, School of Education & Social Work
Teeside University, School of Social Sciences & Law
Ulster University, Social Sciences
York University, Centre for Health Economics

York University, Social Policy & Social Work

Government and public sector interviews
(33 interviews in total – numbers in brackets denote where we have spoken to an organizations on more than one occasion)

Arts Council
Bank of England
British Library
HM Government, Government Research Service (2)
Committee on Climate Change
Department for Communities and Local Government (4)
Department for International Development
Department of Energy and Climate Change (2)
Economic and Social Research Council (2)
Foreign and Commonwealth Office
Foresight Programme
Higher Education Funding Council of England (HEFCE)
HM Treasury
Home Office
Imperial War Museum
Lancashire CC Libraries
Met Office
Ministry of Defence
Museum, Libraries, and Archives Council (MLA)
National Institute for Health and Care Excellence (NICE)
Northern Ireland Assembly
Northern Ireland Executive
Ofgem
Research Councils UK
Tyne & Wear Galleries
Universities UK
Westminster City Council

Private sector and commercial interviews
(32 interviews in total – numbers in brackets denote where we have spoken to an organizations on more than one occasion)

A4E
ATQ Consultants
Bloomburg
BT
Cadbury
Confederation of British Industry (2)
Credit Suisse
Emerald Group Publishing
Ernst and Young
GlaxoSmithKline

Google
HSBC
Ingeus
Intel
Mendeley Ltd
Microsoft (2)
Oxford Finance Group
Pro Bono Economics
Public and Corporate Economic Associates
RSA Insurance
Rule Financial
Sage Publishing
Source Consulting
Standard Chartered
Sunlife Insurance
Tesco
Towers Watson
Unilever (2)
YouGov

Civil society and third sector interviews
(43 interviews in total – numbers in brackets denote where we have spoken to an organizations on more than one occasion)

Action Aid
Adoption UK
Alliance of Religions & Conservation
Barnardos
Campaign to End Loneliness
Carbon Trust
Care International
Christian Aid
CORAM Adoption
Crisis (2)
E3G
EDHEC
ELRHA
Equality and Diversity Forum
Fairtrade Foundation
Foreign and Commonwealth Office
Greenpeace International
HelpAge International
Hole in the Wall
Homeless Link
ImpactStory
Institute for Government
Institute for Public Policy Research (IPPR)
INTRAC

Museum of Manchester
Museum, Libraries, and Archives Council (MLA)
Museums Association
National Co-ordinating Centre for Public
Engagement
National Institute of Economic and Social Research
OpenDemocracy
Oxfam
Public Library of Science (PLoS)
Saferworld
Scientists for Global Responsibility (SGR)
Shelter
Technopolis
Traidcraft
Wellcome Trust (2)
Wikimedia UK
Wilderness Foundation
World Vision

A10. Survey of university departmental websites: Conducted by SQW Consultancy

University departmental websites and the information contained on them provide a rich source of information about how departments and their academics are linking to the outside world. University departments and their appended research centres or units have been disseminating via their websites for at least ten years, and we are able to use the information on these sites as a proxy for assessing the extent to which different academic disciplines are outwardly focused and interested in making links with business, government, and civil society. In order to capture this information in a systematic way, we commissioned SQW consultants to design and run a non-reactive survey of a sample of UK university department websites, and provide us with raw data on this large coding exercise.

Although we had used similar non-reactive web census methods before in our own work, this general method of using websites to evaluate organizational priorities and behaviours is still relatively rare. We therefore worked closely with SQW in the early stages of the project to explain our requirements and to help them to scope the coverage of the work across universities and disciplines. The first step was to do some early scoping of the type of links visible on departmental websites between the department, its academics, and external organizations, and find a way of recording all

these reported links. SQW took the view that we should design a relatively open-ended approach, whereby trained coders recorded in an electronic spread-sheet all visible mentions of external organizations, and a note about the nature of these links. Obviously, these links come in many different forms and size levels. For example, we might find a link as part of a large-scale programme of academic funding or partnership with a firm or charity. We used the organizational links diagram in each of the three chapters in Part II to guide this categorisation work. Coders were asked to make a note of as much specific information as possible about the nature of the link, and provide URLs of the pages where the information was found.

We asked our coders to spend a maximum of one hour on each departmental website. This provided enough time for them to get a good impression of the main links with external organizations, and record necessary information about them. Coders started by assessing any major programmes or headline partnerships signposted on the site. Once they had found all relevant data at this corporate level, they moved to individual research centres or units within the department, and recorded any relevant links mentioned. Finally, and if there was still time, coders looked at the individual webpages of academics and pulled any information about their own links with external organizations mentioned on their CV or in their biographical notes. They were asked to record as much detail as possible for retrospective coding.

The universities and the disciplines chosen for the survey were determined partly by our own sampling for the Google searches mentioned above, and partly by SQW's own supplementary sampling. We covered all the same universities and disciplines that were covered in the Google searches, but also additional ones to boost the coverage and the range of institutions included. The following table shows the universities and disciplines that were included in our sample. *Those in italics are the universities that hosted the academics covered in our PPG dataset.*

Economics	*Aberystwyth, Cardiff Business School, Kingston, LSE, Reading, UCL*, Aberdeen, Imperial College London, Warwick, East London, Newcastle, Plymouth, Southampton, Westminster
Geography	*Aberystwyth, Durham, Kings College London, LSE, Loughborough, UCL*, Derby, Keele, Hertfordshire, Bath, Middlesex, St Andrews, Newcastle, Stafford.
Law	*Bristol, Brunel, LSE, London Metropolitan, Northumbria, Surrey*, Bournemouth, Cardiff, Liverpool John Moores, Oxford,

	Southampton, De Montfort, Derby, East Anglia
Political Science	*Coventry, De Montfort, Keele, London Metropolitan, Ulster,* Warwick, Edinburgh, LSE, Surrey, East Anglia, Southampton, York, Glasgow, Goldsmith (Univ. of London)
Sociology	*Abertay, Gloucestershire, London Metropolitan, Northumbria, Loughborough, Worcester, York,* East Anglia, Surrey, Liverpool John Moores, Middlesex, Lancaster, Anglia Ruskin, Oxford
Anthropology	*Brunel, Edinburgh, Oxford Brookes, Sussex, Wales Trinity St Davids,* Sheffield, Durham, Kent, Cambridge, Aberdeen, UCL, Bristol, Exeter, LSE
Business & management	*Bath, Bradford, Edinburgh Napier, Glamorgan, LSE,* Cumbria, Warwick, Nottingham, Cardiff, Plymouth, Nottingham Trent, Roehampton, Lancaster, Canterbury Christ Church
Communication & media	*Bangor, LSE, Leicester, Liverpool, Swansea,* De Montfort, Goldsmiths, Westminster, Sheffield Hallam, Lancaster, Bournemouth, Birmingham City, Loughborough, Aberystwyth
History	*Lincoln, Manchester, Nottingham, UCL,* Gloucestershire, Huddersfield, Essex, Leeds, Cambridge, Sheffield, Sunderland, Durham, York, Reading
Philosophy	*Birmingham, Durham, Open, Stirling, Sussex,* Chicester, Lancaster, Essex, Plymouth, Sheffield, Bristol, St Andrews, Hertfordshire, Manchester Metropolitan
Psychology	*Bedfordshire, LSE, Hull, Leeds Trinity, London Metropolitan,* Anglia Ruskin, Canterbury Christ Church, Glasgow, Northampton, Sunderland, Teesside, Westminster, Open, Kent
Social Policy	*Liverpool, Nottingham, Stirling, York,* Birmingham City, Chester, Brighton, Edinburgh, Leeds, Oxford, Kent, Bristol, Keele, Salford
Chemistry	*Central Lancashire, Edinburgh, Strathclyde, Sussex, York,* Greenwich
Computer Science & IT	*Bolton, Dundee, Kings College London, Manchester, Worcester,* Aston
Engineering	*Brighton, Cambridge, Central Lancashire, Glasgow, Kings College London,* Northampton, Nottingham Trent, Cumbria, UCL
Medicine	*Dundee, Glasgow, St Andrews, St George's, UCL, Cardiff*
Physics	*Exeter, Hull, Kings College London, Leicester, Surrey, Buckingham*

SQW recruited and trained a group of 6 coders who were LSE Masters students, and these coders were closely supervised by SQW throughout the data collection. Once the data for each of these departments had been collected, core SQW staff retrospectively coded and classified the different types of links, according to type, size and importance. A simple weighting of 5, 3, and 1 was applied to distinguish between large-scale links and much smaller ones. There are of course many different options for weighting the results, but we used this simple technique and found that it provided good amplification and compensation for variations in the nature and size of links. For example, we

weighted mention of large research programme funded by external bodies much more highly than, say, mention of external bodies attending a conference organized by the researchers in the department.

A11. Estimating the economic value of UK-based social sciences to the UK economy: Conducted by Cambridge Econometrics

In 2012 we commissioned a team from Cambridge Econometrics to produce a piece of desk-based research on the economic value of UK-based social science. We have reported on the main findings from this research in Chapters 1 and 9, and this is based on the full report provided by Cambridge Econometrics. For discussion of this research, its design, methods, and findings, please refer to the report published jointly by Cambridge Econometrics and LSE Public Policy Group in conjunction with this book (see Cambridge Econometrics, 2014).

A12. Web-based survey of potential research users and social science academics

In order to canvas views about impact from academics and potential users, we designed two online web surveys that we built using advanced Survey Monkey tools and hosted on the *LSE Impact of Social Sciences* blog. One survey was designed to gather the views of academics across the social sciences about impacts of their own work and the research in their discipline. The other survey targeted all manner of external research users, including private sector, government, and civil society. We asked respondents to tell us how they perceived the value of social science research in their work, how they accessed academic research (if at all), and what the potential were that might hinder them from getting hold of useful research and knowledge.

The surveys were live from October 2012 for two months. We used the *Impacts of Social Sciences* blog as a point of focus for advertising the survey, and drumming up interest. We asked all the learned societies and academic associations to take part, asking them to alert their members to the survey, and encouraging them to complete a response. We also contacted university department heads, in order to raise awareness further. On the user side, we emailed a large number of existing government and third

sector contacts, and tried to spread the word more widely that we were interested to hear from a potential research users.

The number of responses collected in both surveys was frankly disappointing, despite our best efforts. In the academics survey, we received in total 318 responses, however many of these were only partially filled out. In the users' survey, we received only 40 responses, with very little actual content. This is a good illustration of how reactive survey-based approaches can provide only very partial and ad hoc information, and often cannot be relied upon to provide even good indicative data (let alone comprehensive or representative). Having said that, much of the academics survey content has been useful background, and we have selected quotes and ideas from the academics who were kind and patient enough to respond.

A13. LSE as a case study university

Much of the research that we have done for this book and for the wider HEFCE-funded Impacts project has dovetailed neatly with current thinking and strategizing inside the LSE on issues relating to impact and knowledge exchange. This concern is one that is faced by many universities across the UK, both as a result of the Research Excellence Framework (REF) focus on impacts and more generally as universities feel increased pressure to demonstrate impacts themselves in a competitive student marketplace. The research has therefore been well-timed and apposite, and we have been lucky to have been able to influence the thinking of LSE senior management in these areas. Much of our work has therefore been focused on these issues at the LSE in particular, and we have collected a diverse and considerable amount of data on LSE knowledge exchange and impact activities. We have also interviewed many LSE academic staff, at various age and seniority levels, and have generally used the LSE as a test-bed for many of the methods that we describe above. For reasons of confidentiality we have only published a small selection of these data, largely in Chapter 8 on public engagement. The majority of this LSE-specific research has filtered into developing LSE thinking on these issues internally.