



MAPPING THE POPULATION, CAREERS,
MOBILITIES AND IMPACTS OF
ADVANCED DEGREE GRADUATES IN THE
SOCIAL SCIENCES AND HUMANITIES
(POCARIM)

Policy Report 5

Societal impact in Social Science and
Humanities (SSH) PhD Graduates in Europe

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Background: The POCARIM Project

Between 2011 and 2014 a multinational team of academics and researchers collaborated on a research project funded by the European Commission under the Framework 7 Programme: Mapping the Population, Careers, Mobilities and Impacts of Advanced Research Degree Graduates in the Social Sciences and Humanities (POCARIM).¹

One aim of the project was to investigate the impact, contribution and engagement of SSH research in the POCARIM countries and in Europe as a whole.

In this policy report we present the project's key findings on the impact, contribution and engagement of SSH research. Our findings are based on original work carried out in each of the POCARIM countries and which includes: a review of the literature, policy and existing data, as well as original empirical survey and interview research. In the conclusion we draw out the implications of our findings for policymakers.

Methods

The project consisted of two core phases. Each phase was coordinated by a key partner and carried out across the 13 countries by all partners.

Phase one of the research consisted of:

- A review of over 350 studies on the themes of: employment trends, career paths and graduate destinations; and impact, engagement and the contribution of SSH research (Gustafsson and Hansen, 2013).
- A review of policy approaches to interdisciplinarity, doctoral education as the first phase of an academic career, and responses to the economic crisis in terms of funding of doctoral education (Bitusikova, 2013).
- A review of existing statistical data sources on the population of social science and humanities researchers in the POCARIM countries and beyond (Canibano *et al.*, 2013).

Phase two consisted of:

- An online survey of 2,723 SSH doctoral graduates which asked a number of questions on the key themes of the project. These included the perceived impacts of respondents' work, and their international, intersectoral and interdisciplinary mobilities. Survey data was cleaned and analysed in SPSS and EXCEL (Kupiszewska *et al.*, 2013).
- In-depth, qualitative interviews with 25 respondents in each of the thirteen POCARIM countries. Each interview was transcribed, translated into English if necessary, and entered into a single NVIVO project file for analysis.

¹ The countries in which the study was carried out were: France, Germany, Hungary, Italy, Latvia, Norway, Poland, Portugal, Slovakia, Spain, Switzerland, Turkey and the UK. For further details of the project see <http://www.salford.ac.uk/nmsw/research/research-projects/pocarim-home>.

Impact in research careers

Impact has traditionally been assessed in terms of academic impacts, based largely on publications in peer-reviewed journals and citations. In recent years, more attention has been paid to the impact of research on society, in particular in the UK.

According to Shibayama (2012), there have been two phases since the beginning of modern science. The first era was governed by the open science norm (Merton 1973). Based on this view of science, the goal of scientists is to be the first to advance and communicate new knowledge, the rewards being the intrinsic satisfaction of solving puzzles in science and the recognition in the form of publications, citations and prizes (Lam 2011). From the beginning of the 20th century, sciences started to be used more for practical purposes (e.g. military).

In recent years increasing attention is being paid to the role of universities in the application of knowledge through commercialisation and engagement (e.g. Etzkowitz, 1998; Siegel *et al.*, 2007). It is widely reported that there has been an increase in the commercialisation of science and research in the form of university spin-offs, patenting and university-industry collaborations (Siegel *et al.*, 2007; Grimaldi *et al.*, 2011; Hunter *et al.*, 2011; Petruzzelli, 2011).

There is a diverse range of academic engagement activities, not only commercialisation such as the award of patents and university spin-offs, but also many other activities, including collaboration with non-academics in research projects, consultancy and advising policymakers. In their literature review, Perkmann *et al.* (2013) distinguish between commercialisation, which involves the patenting and licensing of inventions and academic entrepreneurship, and engagement, which encompasses a broader range of knowledge exchange activities. Several authors find that engagement is far more common than commercialisation (e.g. D'Este and Patel 2007, Perkmann *et al.* 2013). However, academic research has focused mainly on commercialisation.

Much research on academic engagement has concerned science and technology. Academic engagement in social sciences and humanities (SSH) is only recently starting to receive attention. Olmos-Peñuela *et al.* (2014) find that knowledge transfer activities in which SSH research groups engage most frequently are consultancy and contract research, with commercialisation being less important.

Academics are recently starting to be asked to demonstrate the impact of their research on society. Funding bodies, such as the European Framework Programmes and UK research councils have increasingly made impact a criteria for obtaining funding. This has increased with a focus on societal or grand challenges in terms of funding priorities in the EU and the UK. In the UK, impacts are also being assessed alongside traditional academic measures as part of the Research Excellence Framework (REF), which evaluates the quality of academic departments in the UK. Finding measures of impact has proved difficult. Even where academics are engaged with society, it is extremely difficult to assess the impact of these activities. This is likely to be even more the case on social sciences and humanities, where impacts are more likely to be conceptual.

Bastow *et al.* have recently published a book on the impact of the social sciences in the UK, in which they identify a range of types of impact of social scientists through engagement with business, government, the third sector and the public through the media (Bastow *et al.*, 2014). They also use a range of quantitative and qualitative methods to try to evaluate the impact of these activities.

These issues around impact form the subject of this report. The report will address:

1. The extent to which SSH PhD holders seek to impact on society as opposed to impacting mainly in academia (Section 2);
2. The range of engagement activities and stakeholders on whom the interviewees seek to impact (Section 3);
3. The extent to which these various types of 'engagement' activities have an impact (Section 4).

Academic impact and impact on society

In relation to the impact of academic work, there is a distinction between: academic impact and impact on society (RCUK).² For example, RCUK makes the following distinction. Academic impact includes:

Enhancing the knowledge economy;
Worldwide academic advancement to address issues of importance in other countries or globally;
The development and utilisation of new and innovative methodologies equipment, techniques, technologies, and cross-disciplinary approaches;
Contributing towards the health of academic disciplines;
Delivering and training highly skilled researchers
(RCUK, 2011)

Social and economic impact includes a range of impacts including:

Enhancing cultural enrichment, quality of life, health and well-being;
Contributing towards evidence based policy-making and influencing public policies and legislation at a local, regional, national and international level;
Shaping and enhancing the effectiveness of public services;
Transforming evidence based policy in practice and influencing and informing practitioners and professional practice;
Improving social welfare, social cohesion and/or national security;
Changing organisational culture and practices;
Contributing toward environmental sustainability, protection and impact reduction;
Enhancing the research capacity, knowledge and skills of businesses and organisations;
Contributing to increasing public awareness and understanding of science, economic and societal issues;
Contributing toward wealth creation and economic prosperity i.e. the creation and growth of companies and jobs; enhancing business revenue and innovative capacity;
Enhancing the efficiency, performance and sustainability of businesses/organisations including public services;
Attracting R&D investment from global business;
Contribution to regeneration and economic development;
The commercialisation and exploitation of scientific knowledge, leading to spin out companies, and the creation of new processes, products and services; and training of skilled people for non-academic professions.

(RCUK 2011)

The above list shows the wide variety of impacts that research can have on society. Various case studies have demonstrated a range of impacts, including, for example, a case study of

² See Gustafsson and Hansen (2013) for more on this distinction.

Liverpool University in social sciences and humanities.³ The AHRC and ESRC websites includes a variety of impact case studies of arts and humanities scholars.⁴

Bastow *et al.* (2014) point to two approaches of academics to impact. (1) It is not possible to impact both on the public and on academia, so academics tend focus their efforts *either* on impacting academically *or* on societal impacts. (2) By being a prominent academic and excelling academically your views will be taken into account in wider society. This may involve focusing on academic publications at an early career stage in order to establish a reputation and later using this reputation to impact more widely on society. Bastow *et al* come up with typologies of academics who take either the approach of seeking academic impact or seeking societal impact or other types in between these two and develop the following typology:

Table 1. Typology of Impacts

	External engagement	
Academic outputs	Emphasized	De-emphasized
Emphasized	Academic outputs and external engagement reinforce each other	Researchers stress academic output
De-emphasized	Practitioner oriented academics	Neither role dominant

Source: Bastow *et al.* (2014)

During the POCARIM project, it was found that the impact of social sciences and humanities is not a major debate in most countries. Studies of impact were identified mainly in Norway, the UK, France and Spain. In the UK pressures on higher education funding mean that academics are increasingly being asked to demonstrate the public benefit of their work (Maddrell, 2010). The UK's 2014 REF attempted, for the first time, attempt to assess the social and economic impact of research (Williams, 2012). However, in other countries too, many people interviewed were engaged in a range of activities where they impact on society (see Table 2).

In the survey and during the interviews, people were asked what their impacts were. A small number of people also commented on the extent to which they felt that academics should seek to impact on society. Some of these believed that it is acceptable to impact on society, such as the following two:

I think there were tensions half a generation ago probably in terms of people were sniffy about media dons, as they were called, and I think that's gone now [...] I think the idea that our research has to have impact is a good idea and I think that's changed the agenda now [UK15].

Those times when a scientist could simply lay around, enjoying his success and thinking that the society will appreciate him just because he is a scientist, those times are over [...] If the interests of the society can be met with the help of sciences, then it deserves to be subsidized, if not, then it has to search for private funds [LV09].

³ Carried out by two of the authors of this study (see Ackers *et al.*, 2010).

⁴ See Arts and Humanities Research Council (N.D) and Economic and Social research Council (N.D).

A minority of interviewees questioned the need to try to impact on society, arguing that basic research should be defended as an end in itself, perhaps in countries where the impact agenda had not taken hold. For example, the following:

To a certain extent, I think the university should be an ivory tower, where you can really develop new ideas [...] You shouldn't bother too much about impact and policy implications [...] Quite often I read a paper where they put some policy implications and I think 'why do they do it? They have no clue about how policy really works [DE16].

Another researcher makes a similar argument but also refers to the element of timing:

In fact even pure culture has its importance [...] I don't want to fall into that trap, you know. I mean the descent into, 'It's only good if it's useful right now [IT22].

Others emphasised the impact of teaching on the lives and careers of their students, which again appeared to reflect the extent to which the impact agenda had been emphasised, and also the development of research in the country. In countries where the impact agenda had not taken hold and in less developed countries in terms of research, teaching was often seen as the main impact.

During the survey, respondents were asked which impact activities they were involved in. The table shows the results.

Table 2. Academic and societal impacts

Academic activity	%
Published textbooks, monographs, articles, books	90.3
Taught students	89.1
Managed/coordinated projects	66.9
Supervised graduate or PhD students	65.9
Societal impact activity	%
Taken part in knowledge transfer activities	67.4
Participated in policy-relevant conferences or events	62.1
Given interviews in media (radio, TV, newspapers)	52.8
Advised policy-actors on the local, regional, national or international level	37.1
Participated in societal or political committees	34.7
Been a board member/volunteer/advisor in an NGO	28.2
Developed innovative products	22.9
Been a board member in a company	11.3

Source: POCARIM data, adapted from Kupiszewska *et al.* (2013)

Unsurprisingly, given that the majority of interviewees were in academic roles, the vast majority (around 90%) had carried out traditional academic activities, notably publishing and teaching, and a high proportion had also managed or coordinated projects and supervised graduate or PhD students. More than half had also been involved in activities that involved engaging with society, in particular participating in policy-relevant conferences and giving media interviews. More direct impacts on policy where academics advised policymakers and NGOs, sat on committees or boards and developed products were less common, although still not insignificant.

The following shows the results by country.

Table 3. Academic and societal impacts by country %

Academic activity	CH	DE	ES	FR	HU	IT	LV	NO	PL	PT	SK	TR	UK	Av
Taught students	82	82	96	83	88	90	90	93	84	96	91	97	86	89
Published	84	83	97	78	94	95	89	99	90	97	89	96	82	90
Managed/coordinated projects	73	83	60	61	64	51	58	87	74	58	60	63	77	67
Supervised postgraduate students	54	59	63	54	66	78	69	85	47	82	70	71	60	66
Societal impact activity														
Given media interviews	50	53	59	33	51	40	65	91	64	51	34	57	38	53
Developed innovative products	20	37	24	18	22	19	33	16	28	25	15	20	22	23
Been board member/advisor NGO	17	29	23	15	27	12	44	37	42	23	29	42	27	28
Board member/advisor company	6	6	11	10	16	6	21	20	21	9	6	5	12	11
In societal /political committees	34	33	28	30	28	34	42	37	45	30	23	45	41	35
Advised policymakers	39	50	31	30	26	35	43	69	31	37	14	28	50	37
Policy relevant conferences/events	55	66	43	70	65	65	58	84	56	71	42	58	75	62
Knowledge transfer	58	68	75	58	55	56	74	75	60	86	77	67	68	67

Source: POCARIM data, adapted from Kupiszewska *et al.* (2013)

There is considerable variation by country. A high proportion of interviewees from Norway were active in nearly all areas, both academic and ‘impact activities’, in contrast with Switzerland and France, where low proportions were active in most areas. In some countries, the focus appeared to be traditional academic activities rather than activities that impact on society, notably Spain and Italy. In Latvia, impact activities were high, but academic activities low.

Traditionally, academics have sought to impact on academic debates by publishing in high quality, high impact journals. The vast majority had published textbooks, monographs, articles and books. In the main, when interviewees refer to their publications as an impact, they are referring to academic publications, in particular journal articles.

The most important factor is that your research is published in good journals [CH 19].

What every researcher wants to do is publish the work in a journal that is called High Quality and then it is read by many people [...] his work somehow trickles down and essentially brings the change in policy [CH22].

The second researcher is of the view that high-impact articles affect policy because of the large audience. Some peer-reviewed journals read widely by academics in applied disciplines may also have a non-academic readership (Ackers *et al.*, 2010). Similarly, some academic conferences in applied areas may also attract non-academics. In a few cases, interviewees also mentioned publications aimed specifically at non-academic stakeholders.

Another researcher expressed the opposite view, that academic articles have little impact:

In terms of research and production of academic articles, I will be honest, it does not have a lot of impact in the real life [FRO6].

Thus there is evidence of the views that:

- Academics should concentrate on making an impact in academia and not be too concerned with societal impact;
- Academics should try to make an impact on society;
- Academics should first seek to establish an academic reputation by publishing in high quality journals and this will allow them to have greater influence on society, by implication later on in their career;
- Academic articles do not have much impact on society

The next section will discuss in more detail the nature of the 'engagement' activities reported in table 2.

Engagement and commercialisation

Perkmann *et al.* (2013) highlight the distinction between **engagement** and **commercialisation**. They define engagement as, 'knowledge-related collaboration by academic researchers with non-academic organisations'. They include in this, formal activities, such as collaborative research, contract research and consulting, as well as providing ad hoc advice and networking with practitioners. Commercialisation involves the patenting and licensing of inventions and academic entrepreneurship.

It is argued by Perkmann and others (e.g. D'Este and Patel, 2007) that engagement is far more common than commercialisation, but academic research has focused on commercialisation rather than engagement. In social sciences and humanities, the nature of impacts are likely to be different, and commercialisation even less common than in science and technology. The POCARIM project took a wide view of academic engagement. The range of engagement activities identified during the project will now be discussed.

In the UK, the AHRC found that arts and humanities research contributes to our understanding of the world, culture and ourselves, advances civilization and contributes economically through the £1.306 billion spent on fees and living costs of non-UK students (AHRC, 2009). According to Meagher *et al.* (2008), social sciences impact on policy and practice, but impacts are rarely amenable to precise, quantitative metrics. Studies analysing SSH have found that research groups are actually engaged with non-academic actors through a wide diversity of activities (e.g. consultancy, contract research, joint research, personnel mobility and training activities) (Olmos-Peñuela *et al.*, 2011). However, most of these relationships between SSH research groups and non-academic entities take place with governmental agencies and non-profit-organizations rather than private enterprises and many of these relationships are informal and sporadic, and are invisible to the parent organization (Molas-Gallart and Tang, 2011).

Some authors consider impacts based on the stakeholders. Bastow *et al.* consider the impacts of social scientists in terms of their impact of different groups of stakeholders: (1) business and the corporate sector, (2) government and public policy-making, (3) civil society and the third sector, (4) the public and the media. Watermeyer (2012) points to the diverse range of stakeholders, but identifies three broad sets of stakeholders: (1) policymakers (2) practitioners and (3) the public. These typologies do not include more traditional academic stakeholders; notably other academics and students, although impacts on these groups also produce indirect impacts on society. This section discusses impact based on Watermeyer's broad view of stakeholders.

The POCARIM survey and interviews confirm the variety of interactions of academics with society, only a minority being involved with commercial activities that relate to product development (22.9%). Since the sample included some people who worked in industry (7.4% of respondents), this will probably have accounted for some of these. The interviews revealed that two people had also started a company. In one case this was a spin-off developed from a research project and in another case an innovation office in a university became a private company. Thus these types of commercialisation activities are in the minority compared to the range of informal activities identified in the discussion above. Further, the findings show, in common with the HEFCE study (Ackers *et al.* 2010), that many impact activities are not discrete, but rather are linked and feed off each other. For example researchers may work with practitioners and impact on practice, but also advise policymakers, and these impacts

may also generate media interest, or media interviews may attract the attention of policymakers. This is illustrated by the following case study:

This example of impact shows how a research area can impact in different ways and how different types of impact on different stakeholders can feed off each other. It also shows that working in an area of current interest can result in achieving high impacts.

A UK-based politics professor had studied political parties in Northern Ireland at the height of the peace process in the 2000s, and had received research grants and also published books and articles on the topic. He did membership surveys which attracted media attention. He made appearances on national radio and TV, including on high profile programmes such as a popular news programme and popular national radio programmes. He did not specifically seek media attention, but also did not object to doing media interviews, whereas not all academics want to do media work. He was contacted by local radio initially, and it had snowballed from there.

He also chaired the Political Studies Association (PSA), which has quite a high profile in the UK. As a result of this he was asked by a government minister to chair a government commission. *'Our research and your standing in learning associations chairing the PSA, a combination of those things, ... one thing leads to another.'* The government at the time accepted the majority of recommendations they made.

He still made fairly regular media appearances, and felt generally the university encouraged this. It helps to communicate academic findings to the public and can also possibly help the university with student recruitment.

The following discusses the range of activities and the main types of stakeholders that interviewees sought to engage with.

Practitioners

Olmos-Peñuela *et al.* (2011) argued above that most relationships between SSH research groups and non-academic entities take place with governmental agencies and non-profit-organizations. Based on a survey by Abreu *et al.* (2008) around 40% of social science and around 30% of humanities scholars had activities with private sector companies, whereas more had activities with government (just over 60% of social sciences and just under 50% of humanities scholars) and the third sector, just under 50% of both social science and humanities scholars.

According to Bastow *et al.*, academic links with the corporate and business sectors are far more limited in social sciences than in science and technology, confirmed also by Abreu *et al.*'s findings in relation to both social sciences and humanities. Bastow *et al.* argue that social science links with business are limited to episodic contracting, whereas more enduring and formal relationships, including strategic contracting, continuous partnerships and tech start-ups are more common in science and technology.

Bastow *et al.* identify a number of barriers to greater use of social science in firms, including:

Lack of awareness of people in business of social science. Some businesses are more technology lead;

Businesses are focused on short-term plans whereas academics are more interested in long-term change;

Academics are too confined within their disciplines;

Academics are interested in academic debates and not necessarily application of knowledge;

Large consultancies have their own expertise and large data sets are available to businesses.

(Bastow *et al.*, 2014)

The interviews showed that many researchers interviewed have an impact on various types of practitioners, including businesses and the corporate sector, public bodies, such as schools and the police, and the charity/NGO sector. This includes impacting on law, psychology and psycho-analysis, teaching (primary and secondary schools), businesses, including consultancy and supporting entrepreneurs, the police, music school directors, among other stakeholders. Academic work often encompasses working with users or subjects of research, for example interviewing and sharing results with businesses, teachers or other professions, as well as individuals who participated in research. The HEFCE study by Ackers *et al.* in the UK also revealed that empirical work and participatory methods were well-established in some areas, although becoming increasingly so in response to the requirements of research funders to demonstrate impact (Ackers *et al.* 2010).

The following worked with individuals and organisations and fed back results to them with some impact on practice:

After the PhD I gave talks at the school where I had collected the data [CH10].

And [the police] were happy and they could see what a researcher could bring to their daily practice or their daily lives and how it makes sense for them to get into this [CH15].

If they are working in schools, that's working with children, working with drug addicts, working in the military [NO10].

Some of these worked regularly with businesses, such as the following:

When I work with companies I hope I do have an impact and I help the managers I am working with think differently about their business.

In a small number of cases, the impact on practice involved a role on a committee or in a professional association:

I am president of the Turkish Psychological Association. We try to implement the law for Psychologists there and conduct training [TR09].

Some of the interviewees were themselves practitioners (in some cases alongside their academic work) and thus their work had an immediate effect:

And yes, it does have an impact also on the judiciary, how the courts interpret the current system [HU17, lawyer].

When you are working for an organisation like this [humanitarian agency], what I think the majority of us want is to be in the field and to be on the ground where things are happening [DE22].

Sometimes during clinical practice, when working with an individual, a symptom passes away quickly [TR03, psychologist].

As discussed above, some interviews had engaged with business and the corporate sectors and thought they had influenced practice. However, there was also some discussion of barriers, reflecting some of the above barriers, such as the following:

An Italian interviewee explains how she was asked to present her PhD:

And there were people from the tourism sector there, and one of these guys that was a tour operator [...] says, 'ah but it's too complicated; it's better to just do marketing flat-out!' Because my thesis was on market segmentation. So subgroups of potential clients and then strategic communications directed at these subgroups, and this guy says, 'Oh mamma mia, too complicated.' [IT23].

This exemplifies both the attitude of some people in business who have little time and too little understanding of social sciences, as well as the inability of academics to translate complex findings into simple messages.

Others point to the difference in orientation between business and academia, related to the barriers identified above (4), that in academia people do what they are interested in rather than focus on application and developing saleable products:

A company always has to think about what makes sense in a financial way to do it ... In academia you do things because you're interested in that [CH04].

The POCARIM showed evidence of a range of relationships with public bodies, government agencies and NGOs. The differences in orientation between the corporate sector and academics was particularly noticeable based on the interviews. NGOs appeared to be viewed as more similar to academia, as discussed in Report 9 on Intersectoral mobility:

I went from the University to [a conservation organisation] and then from [a conservation organisation] back to [university] so this shift between these two worlds has been very easy, but maybe because it has always been in the science and technology field. It has not been private industry [CH01].

I haven't really seen myself really in the private sector. I would maybe more have a career in international organizations or NGO where I guess things are quite similar [CH17].

Government and policymakers

According to Bastow *et al.* (2014), links between social scientists and government policymaking are far more dense than that between social scientists and business. However there is a risk that policymakers may mis-use research to confirm their own beliefs.

They identified 5 main forms of academic-government links:

- 1) advisory committees;
- 2) episodic contracting;
- 3) strategic contracting;
- 4) long term research asset;
- 5) policy marketing and dissemination

Similar barriers to impacts were identified as those in relation to businesses, namely that politicians are looking for quick answers and that academics have longer time scales and want

to research problems in greater depth. Politicians have little time to give attention to academic findings so tend to pick out a few bits. Academics may have more influence if they could build longer-term relationships, but this is difficult because staff turnover is very high in government departments.

It was common for respondents to be involved with policy advice at different levels of policymaking.

Many respondents were fairly confident that their input had had an impact, in particular in Northern European countries:

I have for instance overseen a study that looked into how legal barriers have had a negative impact on a particular field and we have been able to feed this into a government consultation. As a result partly of our input the government have recently announced they are committed to changing a few laws in the UK [DE08].

I inform the UN but also the German Foreign Ministry about my results. As far as I know they have used and distributed my results [DE11].

Mostly, I think the politicians and those working in the ministries are quite interested and they use very often my material in white papers etc. [NO17].

The level of impact varies, some seeking to impact at the municipal or regional level and others at the national or international level, often at different levels. Others spoke of carrying out research for government or in conjunction with government.

A number of studies we did in the past are for the Ministry of Economics here in Germany [...] and it has had impact on policies, I think and I hope so [DE09].

Some of my projects have been funded by government industries and there has to be a valuation of the different experiments or arrangements [NO05].

Some researchers mentioned that they are in close contact with local government and carry out a lot of research and impact on policy at the local level. A UK interviewee [UK15] also spoke of chairing the Political Studies Association in the UK, which had helped to increase his profile and make him known to government ministers. On the other hand, as will be discussed in the next section, impacts are very hard to assess.

The public

According to the survey, just over 50% of people had given press interviews or had their work covered by the media.

Most of the interviewees mentioned that they had given a small number of interviews or written articles mostly in local newspapers. Some had received higher profile coverage in the national or international press and some had been interviewed extensively for a range of media outlets. Some of the more high profile ones included the following:

I started to get research grants as well as to study political parties in Northern Ireland, so membership surveys and they were quite highly publicised so media started picking up on that [...] I did quite a lot of media work [UK15].

We did a job for the 2011 World Development Report. And our work was highlighted in the Introduction of the Report and it was also what The Economist used [...] In fact I also worked with [names journalist] in the Financial Times when he covered the report [NO20].

These two people believed their work to have had a large impact in the media and politically and described how they one thing had lead to another. The UK academic, for example, mentions that, media work lead him being invited to political committees. A researcher from Switzerland had also been constantly interviewed by the media following his PhD [CH24].

Humanities scholars have particularly strong impacts on the preservation of cultural heritage, including languages, documents, artefacts, buildings, as well as less tangible aspects of heritage, as well as on media and entertainment (e.g. music, theatre) (RAND Europe, 2010). Some of the POCARIM interviews who were working in the arts were involved in developing museums, exhibitions, had staged plays and organised music or arts festivals.

Liverpool has got the best museums outside London famously and other members of this department work more closely than I do with them [UK12].

I am involved in the development of the wine museum in [names town]. I joined a multi-disciplinary team that is carrying out the construction of the museum [PT21].

A few researchers had made films or documentaries. Some of them also created musical compositions, and some working in languages and literature organised cultural exchanges and did major translations. Books aimed at the public can reach a large audience in the humanities in particular, notably history books. The following is an example of the very direct impacts that archaeology can have on the public.

A Turkish interviewee, who is an archaeologist, gives an interesting example of direct impacts on society. For example with her team of archaeologists, she works in local villages where there are archaeological remains. There are often myths about the remains and their origins. When the archaeologists carry out digs, local people simply come and observe them, often bringing children. They sometimes allow them to join in.

‘Usually they come and bring the breakfast for the father and they stand like that and they watch you for one hour. And once you ask “Do you know what an archeologist is?”, “No.” We say “We are archeologists” and he was completely surprised. We teach them what is an archeologist, what is archeology, what are they doing. If they want, they can come and brush for example, so we do these kind of things.’

They also talk to them and inform them about the history of the place they live in. Additionally, the interviewee mentioned that they publish articles in popular magazines which are accessible to the public.

The above has identified a range of impacts. The main points include the following:

- Most impacts cannot be easily quantified;
- Academics can have an impact on different types of stakeholders;
- The same piece of research may have an impact at many different levels and on different groups of stakeholders in different ways;
- Impacts can be direct on individuals or organisations but impacts can also be much more diffuse and involve many academics impacting on many people;
- There are differences in orientation between academics and other sectors. Academics aim to increase knowledge (although with some variations in attitudes of different academics), whereas other sectors are seeking to use and apply knowledge. This also results in different timescales, with businesses seeking quick answers (to develop products) and policymakers (to develop policies);
- Most barriers were identified in relation to impacts of academics on the corporate and business sector because of the different aims and orientation.

Engagement and impact

There is a distinction between *engagement* and *impact*. Academics are involved in a range of academic activities and activities that involve engaging with societal stakeholders, however, this does not necessarily equate to impact. Impact is very difficult to capture, confirmed also by Rand Europe (2010). Academics are frequently involved in activities such as consultancy, knowledge exchange, policy advice and media interviews. However, as the POCARIM findings will discuss, it is very difficult to demonstrate their impact. Impact is influenced by many factors, including whether there is a direct impact on individuals or organisations, or whether the impacts are indirect and mediated, what spatial level the impact takes place at (local, regional, national, international) and the time it takes to have an impact.

Difficulties assessing impact

It was frequently argued in the interviews that it is very hard to demonstrate impact. Even where researchers do policy-relevant work or work that is of interest to society, and are engaged at various levels with other stakeholders, it is hard to evaluate the extent to which this work is having an impact. For example the following researcher:

I was giving lectures and advice to government [...] I have been writing reports to the government [...] hopefully we have had some kind of impact, I don't always find [out] [NO10].

Another refers to difficulties quantifying impact:

These impacts are difficult to quantify [...] I have the perception that it takes time for them to emerge [PT18].

This researcher points out that it can take time for impacts to emerge. Impact can also be unpredictable and based on serendipity. Some researchers pointed out that they had discovered that their work is having an impact in some shape or form more or less by chance. For example a researcher discovered the impact of his teaching on one particular student:

Lots of [the students] were just there because they had to be there [...] And no one was really listening to what I was saying [...] but one day a student came to me at the end of the class and told me, 'I graduated yesterday and your class really marked me, and I am going to change my plan and now I am working at the NGO thanks to you' [CH12].

This demonstrates the unpredictability of impacts. In this case the researcher found out about the impact his teaching had had. However, often the impact of an academic's work, whether teaching, publications, reports to policymakers, contributions at conferences or other outputs would not be known.

They also demonstrate the distinction between inputs and outcomes. It is argued by many interviews that academics may have inputs into the knowledge production process but cannot necessarily know the outcome. Academics may produce reports or advise policymakers but they cannot be sure if their reports are read. Even if they talk directly to policymakers or practitioners, they cannot always know the impact of their advice. The HEFCE study highlighted the importance of networks and partnerships to maximize benefits. Working with policymakers throughout the research and generating knowledge based on co-production would be more likely to result in impact than simply delivering a final report (Ackers *et al* 2010).

In most cases, researchers were unable to determine the impact of their research, which was often indirect and subject to time lags. Although more indirect impacts are difficult to assess, they may be more significant in the long term than immediate impacts.

Extent of impact

It was pointed out by many researchers that their voice is only one of many and, although they hope to have an impact, this is likely to be modest. That their impact is only one voice among many and has probably had a modest impact was by far the majority view. The following are examples:

I shouldn't probably overestimate the impact of the topic of my PhD or my current work because it is very small amongst thousands of topics [CH06].

I think I have to be very humble in terms of the impact I am making [...] I do hope to make a contribution to society [DE01].

In terms of my area I think that perhaps there may have been modest impacts. It is not frequent but I happen to meet people that read things I wrote [PT06].

There is some implication in the above quotes that researchers are trying to be modest and not over-estimate their influence, the above interviews being reluctant to claim that their individual research has a major impact on society. The extent to which they evaluate their own impact may also depend the extent to which they are reflective are willing to sell themselves. This was explicitly discussed in one UK interview:

[Interviewer: But you're kind or not really selling yourself very well I suppose] No, I'm not really self-reflective enough about what I'm doing [Interviewer: a lot of people don't put this sort of thing [impact of their work on society] on their CVs necessarily] [UK27].

This probably also reflects the extent to which impact is on the agenda. If researchers have not previously been asked to demonstrate their impact, they may not have reflected on it and may tend to under-estimate the impact of their work. This may be the case even more in countries other than the UK (above interview) where impact is not on the agenda.

On the other hand, a smaller number of researchers point out they themselves, their research group, or other academics they know can have a significant impact. For example, the following:

I have published something about the acceptability of soil modification measures that has change the policy of the region [...] which had 17 million people [DE02].

The spatial context of impact

The spatial context also influences the extent to which impacts are direct or indirect. A few researchers interviewed had completed research, written reports or distributed research findings to international organisations including the UN, the World Bank, the ILO, the British Council, the EU and other organisations. The impact of their work was in most cases unclear at the international level.

On the other hand some researchers could point to a greater impact at the national or regional level. Many researchers were advising national governments. Several researchers mentioned that they felt they have an important influence on their own governments, for example the following:

[Names institute] is quite a large research institute in Norway and we have an impact on the Norwegian public [...] its influential for policy makers at all levels both in the ministries and the government [NO19].

When we participate in the policy-related events, like the conferences, Polish policy makers are very open to what Polish researchers say about migration policy [PL01].

Others point out that their work has had an impact on a small number of people or in a limited region geographically:

In the Azores, the impact of my work in opinion-making of those with political responsibilities is quite significant. In national terms it may be existent but small [PT01].

For the very small community of people who work on popular music and contemporary popular music [...] I guess my work is quite well known now, at least for the French and French-Swiss in that really small field [FR25].

Others also speak of local influences, such as a Swiss researcher who has advised the regional government on establishing a procedure on grant recognition to religious movements and an Italian researcher who speaks of a colleague who is very active at the local level, producing publications for local government. However, on a large spatial scale the impact of their work may be quite small.

The time scale of impacts

The results of various types of engagement activities can take many years to emerge. A report by RAND Europe also confirmed this, arguing that. 'Arts and humanities research impact tends to work cumulatively, through depth and/or breadth of research over many years' (RAND, 2010 p. xiv). Many researchers interviewed for the POCARIM project spoke of the long time frames in research. It was pointed out by many interviewees that it takes years to produce results and to publish academic papers.

The following two examples demonstrate that agenda setting impacts can take a long time to emerge:

My PhD I think was important because it was really questioning the place of growth in the development project and [...] if we do not integrate the environment [...] we are going against the wall of ecological nightmare [...] and if it takes 20 years, and I really only think it can be done by informing and education [CH12].

Because the political process is so long, so you say, you can say from white paper or NOU to something happens out there it can take many years [...] I think the awareness of different problems and different ethnic groups for example is now more conscious among politicians and civil servants. But from there changed measures is a big step [NO17].

This is also illustrated by the following case study, where the topic rose in prominence and was also developed into a more applied project following the PhD:

This example of agenda changing research also leading to practical tools comes from a Swiss interviewee. The topic of his PhD related to business corporate social responsibility, a topic that is become increasingly accepted. The economic crisis came at the end of his PhD, which made the topic of business corporate social responsibility more prominent, illustrating also how agendas can change and turn a topic that was not particularly high profile into a 'hot topic'. He had the opportunity to give talks about his PhD to a variety of audiences. He published a very conceptual paper, which contributed to thinking about the business system, but with few practical tools.

This however led to a new project on the solidarity economy and social entrepreneurship, in which he and colleagues are collaborating with a growing number of social entrepreneurs and other actors. He feels this project is likely to provide practical tools (although he did not explain in detail at this stage). He has found in his current work, that there are more opportunities to reflect on practice, 'Breaking those boundaries can lead to very practical issues also for managers and asking them about how they conceive of their managerial role and how their work relates to other parts of their personalities. If business and society are no longer split then that means that the manager cannot just say, "I am now here as a manager and I have to work as a manager." He has to think about other positions, other roles, responsibilities he has in society and those need to come together. So this was highly practical implications for the way we conceive of management or of social responsibility.'

Impacts can be achieved at many levels, including by educating students, by influencing other academics through publications, advising policymakers and engaging with the media. It can be seen that to establish these agendas and have impacts at any of these levels takes time. Whereas the above felt that impacts were likely to take time, some topics were very high on the agenda and had an impact for this reason. For example, the following Swiss interviewee:

I chose a topic which is quite high on the agenda currently, relatively high, of course, which is the reform of doctoral education [...] I mean it is on the political agenda of the Rector's Conference of Switzerland [CH06].

Agendas change frequently and it cannot be known which agendas will be fashionable at the time of undertaking research. This point was emphasized in the report by RAND Europe (2010), who gave examples of academics whose work had come to prominence because of recent events. For example, for a 'star historian' of the crusades, events that took place in the distant past had suddenly come to prominence following the 9/11 attacks, with the renewed interest in wars between Islam and the West.

The following summarises the main findings in terms of the extent that interviewees are able to evaluate their impact:

- Impact is very hard to capture;
- Impacts are often indirect;
- The majority of interviewees are modest about their own impacts, acknowledging that their voice is one among many;
- Interviewees were more confident of their impact at a local, regional or national level than at an international level;
- Impacts take time. Often the timing of when impacts occur is not predictable. Major, agenda-changing impacts are likely to take longer than smaller, incremental impacts. Impacts are often cumulative over time.

Conclusions

There has been an increase in university-industry links in recent years, accompanied by a growing academic literature on the topic. Most literature has been concerned with (1) commercialisation (notably patents and spin-offs) (2) natural sciences and technology. However it is argued that commercialisation accounts for only a small proportion of the engagement of academia with industry and other sectors. The range of activities whereby academics engage with industry, policymakers, NGOs and other stakeholders is far greater. Much research has been about patenting of products, high-tech start-ups and the like. There has been little research into the links of social sciences and humanities with other sectors, although a small number of authors have started to redress this recently.

There is a divergence of views on the extent to which universities should seek to develop links with industry and other sectors, and the extent to which they should engage in basic research as opposed to applied research. On the one hand, some academics talk of a 'triple helix' that stresses the productive relationships between university, private industry and government. Others are far more critical of the encroachment of a profit motive into academia (Lam 2010).

In some countries, attempts are starting to be made to assess the impacts of academics on society, in particular in the UK, where 'impacts' formed one criteria in the Research Excellence Framework, which determines funding of higher education. Of the POCARIM countries studied in this project, the UK was the country where the 'impact' agenda has taken hold to the greatest extent. A few other countries (mainly Spain, France, and Norway) also identified academic research, policy literature and evaluations which sought to assess impact. In other countries, this agenda was not important.

The report has considered (1) the extent to which SSH PhD holders seek to achieve an impact academically and on society (2) the range of activities by which respondents are engaged with different sectors (3) the extent to which the respondents felt their work is having an impact on society. A small number of interviewees only argued that academia should be an 'ivory tower'; most were more accepting of the need to impact on society. Respondents were involved in a broad range of 'engagement' activities, including consultancy, knowledge-exchange, advising policymakers and carrying out media interviews. However, the majority felt it is very hard to assess the impact of these activities for many reasons, including (1) their voice is only one among many (2) they often do not get feedback on the extent of their impact (3) it takes time to make an impact and timing of impacts is unpredictable (4) impacts are harder to achieve at a global level.

Policy Recommendations

1. More research is needed into the range of impacts, including the differences between disciplines. Improve understanding of the factors that affect impact, such as the nature of research, the nature of knowledge (applied/basic/conceptual/theoretical), the spatial scale and timescale of impacts, stakeholders on whom academics seek to impact.
2. Change academic reward systems to reward other achievements than peer-reviewed publications. There may be different ways to achieve this. This could include developing different types of career paths, traditional ones still based on achieving peer-reviewed articles, alongside careers where impact is rewarded. It could also include impact training and awareness for academics. Academics may under-estimate their own impacts because they are unaware of them, perhaps because they have not been asked. Helping them to reflect on them may help. A third option may be employing others to focus on developing impacts rather than expecting academics to do this. The solution may involve a combination of these.
3. Training – focus on presentation skills needed, writing and presenting for different audiences – academic, policy, business, users, the media.
4. Increasing the incentives for academics to develop academic outputs into policy outputs and other types of outputs, products and programmes where appropriate.
5. More extensive links with other sectors are needed to increase awareness in business in particular of the contribution of social sciences and humanities.
6. Increase funding and extend the range of funding for exploiting results of academic research or translating academic results into products or programmes, including both for SSH and STEM subjects. A survey of the type of grants across disciplines and countries might be a useful starting point. Translation grants are well established in some fields in the UK, for example in the medical field. Extend good practice in some disciplines to other disciplines. Extend good practice in some countries to other countries.

References

- Abreu, M., V. Grinevich, A. Hughes and M. Kitson. (2008) Knowledge Exchange between Academics and the Business, Public and Third Sectors.
- Ackers, L., M. Cliff and D. Millard. (2010) Demonstrating the Public Benefits of Higher Education: Public Policy Microstudy. HEFCE 2010.
- Bitusikova, A., (2013) Work Package 2: Policy Analysis. POCARIM. Available at: http://www.salford.ac.uk/data/assets/pdf_file/0012/399576/Policy_analysis_WP2.pdf
- Arts and Humanities Research Council. (N.D.). Available at: <http://www.ahrc.ac.uk/What-We-Do/Build-the-evidence-base/Pages/Case-studies.aspx>
- Arts and Humanities Research Council. (2009). Leading the World: the Economic Impact of UK Arts and Humanities Research. Swindon: AHRC.
- Bastow, S., P. Dunleavy and J. Tinkler. (2014) The Impact of the Social Sciences. Sage, London.
- Canibano, C., E. Castro-Martínez, A. García-Aracil, F. Ortega-Colomer, J. Otamendi and R. Woolley (2013) Work Package 3: Secondary Data Analysis. POCARIM. Available at: http://www.salford.ac.uk/data/assets/pdf_file/0005/399596/Data_review_WP3.pdf
- Castro-Martinez, E., I. Fernandez de Lucio and M. Perez-Marin (2008). La Transferencia de Conocimientos desde las Humanidades: Posibilidades y Características. Arbor 184(732): 619-636.
- D'Este, P. and P. Patel. (2007). University-Industry Linkages in the UK: What are the Factors Underlying the Variety of Interactions with Industry? Research Policy 36
- Economic and Social Research Council (N.D.) <http://www.esrc.ac.uk/news-and-events/features-casestudies/case-studies/impacts.aspx?page=1&pagesize=10>
- Etzkowitz, H. (1998). The Norms of Entrepreneurial Science: Cognitive Effects of the New University-Industry Linkages. Research Policy, 27(8), 823–833.
- Grimaldi, R., M. Kenney, D.S. Siegel and M. Wright. (2011). 30 Years after Bayh-Doyle: Reassessing Academic Entrepreneurship. Research Policy 40 (8), 1045-1057.
- Gustafsson, M. and T. Hansen. (2013) Work Package 1: Research Review. POCARIM. Available at: http://www.salford.ac.uk/data/assets/pdf_file/0011/399575/WP1_Literature_Review_final.pdf
- Hunter, E.M., S.J Perry and S.C. Currall. (2011). Inside Multi-Disciplinary Science and Engineering Research Centers: the Impact of Organizational Climate on Invention Disclosure and Patents. Research Policy 40 (9), 1226-1239.
- Kupiszewska, D., M. Kupiszewski and A. Kicingier. (2013) Work Package 3: Survey Report. POCARIM. Available at: http://www.salford.ac.uk/data/assets/pdf_file/0004/399577/WP4_Survey_report.pdf
- Lam, A. (2011) 'What Motivates Academic Scientists to Engage in Research Commercialization: 'Gold' 'Ribbon' or 'Puzzle'? Research Policy, 40: 1354-1368.
- Meagher, L., C. Lyall and S. Nutley. (2008). Flows of Knowledge, Expertise and Influence: a Method for Assessing Policy and Practice Impacts from Social Science Research. Research Evaluation, 17(3), 163-173.
- Merton, R. (1973). The Sociology of Science: Theoretical and Empirical Investigations. University of Chicago Press, Chicago; London.
- Molas-Gallart, J. and P. Tang. (2011). Tracing 'Productive Interactions' to Identify Social Impacts: an Example from the Social Sciences. Research Evaluation, 20(3), 219-226.
- Olmos-Peñuela, J., E. Castro-Martinez and P. D'Este. (2014) 'Knowledge Transfer Activities in Social Sciences and Humanities: Explaining the Interactions of Research Groups with Non-Academic Agents, Research Policy 43: 696-706.
- Perkmann, M., V. Tartari, M. McKelvey, E. Autio, A. Broström, P. D'Este, R. Fini, A. Geuna, R. Grimaldi, A. Hughes, S. Krabel, M. Kitson, P. Llerena, F. Lissoni, A. Salter, and M. Sobrero.

- (2013) Academic Engagement and Commercialisation: a Review of the Literature on University-Industry Relations, *Research Policy* 42: 423-442.
- Petruzzelli, A.M. (2011). The Impact of Technological Relatedness, prior ties and Geographical Distance on University-Industry Collaborations: a Joint Patent Analysis. *Technovation* 31 (7), 309-319.
- Rand Europe (2010) Assessing the Impact of Arts and Humanities Research at Cambridge University. Technical Report, prepared for the University of Cambridge and the Arts and Humanities Research Council, the RAND Corporation, Santa Monica, CA, Arlington, VA, Pittsburgh, PA and Cambridge, UK. Available at: http://www.rand.org/pubs/technical_reports/TR816.html
- RCUK. (2011). Types of Impact. Research Councils UK.
- Siegel, D.S., M. Wright and A. Lockett. (2007). The Rise of Entrepreneurial Activity at Universities: Organizational and Societal Implications. *Industrial and Corporate Change* 16 (4): 489-504.
- Shibayama, S. (2012) Conflict between Entrepreneurship and Open Science, and the Transition of Scientific Norms. *Journal of Technology Transfer* 37: 508-531.
- Williams, G. (2012). The Disciplining Effects of Impact Evaluation Practices: Negotiating the Pressures of Impact within an ESRC–DFID Project. *Transactions of the Institute of British Geographers*, Early View Online.