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POLICY BRIEF



POCARIM

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

FINAL REPORT

January 2015

This report has been compiled and edited by Dr Chris Coey and Professor Louise Ackers based on Policy Briefs which are available at <http://www.salford.ac.uk/nmsw/research/research-projects/pocarim-home/resources>. Sections of this Final report have been authored by the following: Professor Louise Ackers (The Role of Networking in the Social Sciences and Humanities); Dr Chris Coey (Internationalisation and International Mobility in Social Science and Humanities; Interdisciplinarity in Social Science and Humanities Careers); Dr Debbie Millard (Impacts of SSH), Professor Louise Ackers (Networks in SSH Work and Careers); Dr Dorota Kupiszewska (Internationalisation and International Mobility in Social Science and Humanities); Dr Marek Kupiszewski (Internationalisation and International Mobility in Social Science and Humanities); Dr Heloisa Perista (The Impact of Partnering, Parenting and Other Caring Responsibilities on SSH Work and Careers); Pedro Perista (The Impact of Partnering, Parenting and Other Caring Responsibilities on SSH Work and Careers); and Professor Dominique Vinck (Career Paths and Inter-sectoral Mobility).

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INTRODUCTION

In the context of a globalising knowledge-based economy and increasing competition from not only the US but from Asia, as well as demographic and environmental challenges, the European Union has asserted the critical importance of producing and circulating high-level skills within a single European space. In March 2000 the European Council published the ‘Lisbon Strategy for Growth and Jobs’, arguing that Europe must become

the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment (European Council, 2000).

The emphasis on skills and innovation in Europe’s future success was renewed in the Europe 2020 strategy (European Commission, 2010b). The Innovation Union element of the 2020 strategy focuses in particular on the central role of researchers and their mobility across disciplinary, sectoral and national borders (European Commission, 2010b). In addition, there has been a turn towards collaborative research which crosses these borders as it aims to address the ‘Grand Challenges’ or the ‘Societal Challenges’ facing Europe.

However, in policy and in practice the role of the social sciences and the humanities (SSH) is often downplayed in favour of subjects in the physical sciences, technology and engineering which can have more immediate and easily quantifiable impacts. Moreover, in the wake of the recent financial crisis cuts in funding have tended to affect SSH subjects more severely. In devising policy approaches which contribute to the achievement of European goals, therefore, it is necessary to understand more fully the ways in which SSH fields are organised and can contribute to Europe’s challenges, as well as the complex career paths and working practices of SSH researchers.

In order to contribute to the understanding of SSH research and research careers teams of researchers from 13 countries¹ came together between 2011 and 2014 to collaborate on the project ‘Mapping the Population, Careers, Mobilities and Impacts of Advanced Research Degree Graduates in the Social Sciences and Humanities’ (POCARIM). Across the 13 countries we reviewed existing statistical population data, research literature and policy, and carried out a large-scale survey and hundreds of interviews with PhD holders in SSH fields working in a range of sectors and organisations in a variety of roles.

In this Final Report we present the key findings and recommendations emerging from POCARIM. First we address the nature of SSH careers and movements between labour market sectors. Our research revealed that career aspirations amongst the SSH PhD population remain very much oriented towards academic and research careers. In fact, the doctoral training process appears to reinforce this tendency, with many who had not initially considered an academic career changing their minds during their studies.

Secondly, we look at the impacts of SSH PhD graduates’ work, both on their environments and on their own careers. We found a wide range of impacts coming from the work of the POCARIM population. Participants reported impacts which affected many different stakeholders at multiple scales and with a variety of timeframes. However, there was a clear perception that conventional ways of capturing and evaluating impacts did not take this complexity into account.

We looked, thirdly, at the nature and role of networking in SSH work and careers. Our research extends and reinforces an understanding of professional networks as crucial to the career development of researchers. Networks allow access to opportunities and to impact, and are especially important in early career phases. Therefore it is important to provide funding for researchers starting out in their careers to build appropriate networks.

Fourthly, we present our findings on the degree, nature and outcomes of cross-disciplinary activity in the POCARIM population. We report that interdisciplinary activity is a feature of the work of the vast majority of our participants. However, interdisciplinarity tends to occur between fields that are relatively closely related, whilst it was less common to find collaborations between, for example, SSH subjects and the natural sciences. Interdisciplinarity was perceived positively in terms of its intellectual rewards and its potential for impact. At

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.

the same time, there was concern that professional reward systems remain strongly defined by disciplines, and that deviating from conventional disciplinary identities could adversely affect career mobility.

The fifth theme we present looks at the degree, nature and impact of international mobility and other cross-border activities. There was a high degree of impact reported across the population, much of it of short to medium duration. International activity was a core part of the work of a large number of the participants, and it was recognised across the board as an important element of a successful career and of achieving impact. However, international activity, and in particular mobility, was for some participants difficult or impossible due to lack of time or funding, or because of family commitments.

The sixth theme looks at our findings with regard to partnering, parenting and other caring responsibilities. We found that certain aspects of academic and research work, for example excessive working hours and an expectation of mobility, had a discriminatory impact on participants with family responsibilities. These were particularly problematic for women, upon whom domestic and caring duties tend to fall disproportionately. The tensions between family and career were felt most severely at crucial points in early career, when a number of female participants reported the need to postpone or forego parenthood in order to pursue their careers. Others had downgraded or adjusted their career goals in order to accommodate family demands. In contrast, for men partners and families tended to provide a supportive structure.

Finally, it is important to acknowledge that many of the POCARIM findings, regarding for example career paths and mobilities, were both country and discipline specific. In addition, the interrelationships between the themes presented here generate complex pictures of, for example, the nature of impact and the ways it relates to cross-border, cross-sectoral and cross-disciplinary activity across the career path.

Ultimately, POCARIM found SSH researchers to be creative, enthusiastic and engaged in a wide range of activities resulting in meaningful impacts across a host of issues. The contribution of SSH research to the social and economic challenges facing Europe emerges clearly from POCARIM. Our recommendations will serve to address some of the issues we identified which affect not only the career paths and job satisfaction of SSH researchers, but also the degrees and kinds of impact they have through their activities.

The POCARIM study identifies 30 key recommendations for research policymakers and other stakeholders. We present them here organised around six core themes:

Inter-sectoral Engagement across the Career Path

- 1) National and European policymakers, institutional leaders, and training organisations should create opportunities to expose doctoral researchers to a diversity of environments through measures including:
 - Placements and secondments (block and day release) and through part-time research
 - Joint Supervisions
 - Access to funding to support face-to-face meetings and participation in conferences and events
- 2) Doctoral training institutions (and research groups) should build partnerships across sectors and develop innovative training programmes which provide opportunities for PhD candidates to explore non-academic career paths and settings.
- 3) Doctoral training institutions should support staff development opportunities designed to increase awareness of and confidence in impact-related activity. This might include writing and presenting for different audiences, Intellectual Property Rights, entrepreneurship, leadership, project management and other types of complimentary training.
- 4) National and European policymakers, and research institutions should increase funding to support the exploitation of the results of academic research, or the translation of academic results into products or programmes. This could include, for example, funding researchers' time beyond the life of a project.
- 5) Academic employers should review career progression systems to give greater weight to impact-related outputs to balance the emphasis on peer reviewed publications and research grant income. This may include recognition of dissemination in grey literature/policy reports; presentations to stakeholder communities and receipt of 'soft money' such as commissioned evaluations and consultancy funding.

Impacts of SSH Research

- 6) Institutional leaders, as well as national and European policymakers should recognise the complex nature of impact, and review impact metrics to account for the nature of different types of research, the nature of knowledge (applied/basic/conceptual/theoretical) and its application, the spatial scale and timescale of impacts, and the stakeholders on whom academics seek to impact.
- 7) Academic reward systems should be changed to also reward achievements other than peer-reviewed publications. This could be achieved in different ways, and might include developing different career paths where impact is rewarded alongside traditional academic careers. Another option may be to employ others to focus on developing impacts rather than expecting academics to do this.
- 8) Doctoral and in-house training and awareness of impact should be developed. Training should incorporate transferable skills and activities related to impact. This might include, for example, writing and presenting for different audiences, Intellectual Property Rights, entrepreneurship, leadership, project management and other types of complimentary training.
- 9) Incentives should be increased for academics to develop academic outputs into policy and other types of outputs, products and programmes where appropriate.
- 10) Funding should be increased for exploiting the results of academic research, or translating academic results into products or programmes, including both SSH and STEM subjects.
- 11) More extensive links with other sectors, and in particular businesses, would increase awareness of the contribution of social sciences and humanities. More extensive use of secondments would facilitate this.

Networking in SSH Work and Careers

- 12) Networks have a critical role to play in building research relationships and facilitating the kinds of boundary spanning activities that lie at the heart of the Innovation Union. However access to relatively small and flexible sources of funding to support meetings and attendance at events has declined in recent years. Research performing institutions should be encouraged to make funds available to support these activities (including attendance at policy-oriented or stakeholder events).
- 13) The development of joint doctorates or mechanisms encouraging joint supervision or placements at international, interdisciplinary and intersectoral level would significantly enhance research relationships at doctoral level with long lasting repercussions.

- 14) Networks undoubtedly play an important role in providing information about positions and facilitating applications. Whilst dissemination of opportunities via networks is valuable, it is important that all positions remain genuinely 'open' to candidates irrespective of their networks.
- 15) Engaging in the kinds of activities conducive to optimal networking involves time commitments that often challenge researchers with family or caring responsibilities with a particular impact on women as primary carers. Every opportunity should be taken to ensure that these researchers are supported to engage in network-building activities. This includes careful attention to the timing of meetings and events to avoid, wherever possible, anti-social times (evenings and weekends).

Valuing Inter-Disciplinarity in Practice

- 16) Academic employers should review career and reward structures to reflect the demands of policymakers for greater cross-discipline engagement. Currently, excellence metrics privilege single discipline outputs.
- 17) At institutional level, recruitment, reward and progression systems need to reflect the increasing number of researchers engaged in interdisciplinarity or who aspire to work across disciplines. Funders and policymakers need to put in place mechanisms which recognise the value of interdisciplinarity in individuals and in projects.
- 18) Effective interdisciplinary collaborations emerge from environments and activities – or interdisciplinary 'space' and 'moments' – in which opportunities for interaction are plentiful, and individuals find intrinsic motivation through shared interests. Institutions and policymakers should facilitate these encounters through interdisciplinary centres, departments and faculties, as well as 'seeding' events at which a mix of researchers explore the possibilities for collaboration. Policymakers could host workshops or conferences that focus on problems of interest and which enable new alignments of researchers to emerge. Groups that emerge could be encouraged to bid for funding.
- 19) Interdisciplinarity involves greater time and effort than single discipline work. Policymakers and institutions should recognise this through, for example, allowing relatively more research or writing time for researchers working across disciplines.

International Mobility in Social Science and Humanities Careers

- 20) National and European policymakers should recognise the influence of national traditions, resources, disciplines, career paths and labour markets on the complex and diverse patterns of international activity practiced by researchers. In practice this would mean supporting a wider and more complex range of international and mobility practices.
- 21) There is no single mode of international activity – mobility or otherwise – which is universally appropriate for all researchers or all research aims. Organisations should therefore incentivise the widest range of mobilities from longer through to short stays tailored to the needs of the research and the researcher and appropriate to the desired outcomes.
- 22) Institutional leaders, as well as national and European policymakers, should support the inward mobility of researchers through shorter (i.e. conferences) or longer (i.e. fellowships) visits. In this way relationships and networks can be established that provide essential connections to international fields, knowledge and skills, as well as career information and opportunities. Equally important, supporting inward mobility helps to counter 'brain drain' from peripheral institutions and regions.
- 23) Institutional leaders, as well as national and European policymakers, should support organised programs involving institutional collaborations, joint degrees or joint supervisions. These can play an important role in supporting doctoral researchers, leaving them less reliant on supervisory relationships.
- 24) The value of international experience is clear. However, SSH researchers should be fully informed of the opportunities and risks associated with international mobility, and provided with strategies to facilitate positive experiences. Such information would have greatest value at doctoral phase and early career stages, and should be incorporated into researcher training.

Gender, Family, Caring and Equality

- 25) Contractual insecurity (and unemployment) remains a major concern for researchers. Employers and funders of researchers should ensure that fixed-term status does not comprise entitlement to forms of leave (for reasons of maternity, parenthood and sickness).

- 26) Institutional leaders, as well as national and European policymakers should take steps to ensure that the professional evaluations/assessments which influence career progression take career breaks into consideration so that those using parental/care leave, and/or those with special caring responsibilities, e.g. for a child with a disability, are not penalised.
- 27) Institutional leaders, as well as national and European policymakers should value multi-tasking and organisational skills related to the articulation of scientific work and family life alongside other traditional indicators for performance metrics, such as publications.
- 28) Institutional leaders, as well as national and European policymakers need to acknowledge that the cultures of 'presenteeism' in academic workplaces, long working hours and frequent and/or long-term mobility may constitute a form of indirect gender discrimination. These practices, based on the assumption that 100% availability is a pre-requisite for career progression, do not affect women exclusively or by design, but contexts of family life, gendered roles and cultural expectations mean they are felt far less frequently and/or to a lesser degree by men.
- 29) Institutional leaders, as well as national and European policymakers should acknowledge that in a context of 'expectation of mobility', the consequences of immobility are in many cases to inhibit or bring to an end an academic career. International mobility practices and opportunities should be placed in context, taking into account that personal dispositions might inhibit or motivate mobility, as might family situations (children, elderly parents) at different times. These factors and others, with particular gender dimensions, can have a significant impact on mobility practices.
- 30) Opportunities to attract researchers from other countries and sectors into research institutions may be of particular value to those researchers who are unable to exercise mobility themselves. Institutional leaders, as well as national and European policymakers should encourage institutions to host researchers from other countries and sectors, and therefore provide opportunities for less mobile local researchers to build networks and collaborations.

1. SOCIAL SCIENCE AND HUMANITIES PHDs WORKING OUTSIDE ACADEMIA

PhD holders are a highly skilled population, and are seen to be a key component of the knowledge society and economy. The literature underlines the importance of knowledge flows between university and industry through the mobility of PhD graduates into the private sector. This has led the European Commission to launch programmes to support such flows for the benefit of Europe. Policies, among others the 'Lisbon Strategy for Growth and Jobs' in 2000, have been implemented to increase the stock of human capital in research and to facilitate its transfer into various sectors of the society. The supply of highly qualified researchers with doctoral degrees working in different sectors of the economy was then seen as the crucial way to achieve sustainability.

In 2010, the European Commission called for the strengthening of the capacity to train young people to become researchers and offer internationally competitive research careers. It was recommended that reforms in higher education focus on increasing the quantity and the quality of graduates, including doctoral graduates, and on strengthening the articulation between education, research and industry. Various countries set up policies regarding PhD education with a focus on developing the doctoral degree as a professional experience for a variety of perspectives beyond careers in teaching and research, which would improve employment prospects.

However, both academic literature and institutional reports underline the difficulties for PhD holders to find employment outside the academic profession in jobs corresponding to their qualifications and skills, in particular for SSH PhD graduates. Even if they leave the academic milieu due to the lack of employment opportunities, the attractiveness of jobs outside the academic milieu is not clear. This might lead to frustration due to their over-qualification for the job. It appears that improved career prospects and earning opportunities outside academia cannot explain the drop-out. The motivations for leaving academia also differ according to discipline based on the potential to apply skills in other sectors.

In fact, little is known about SSH PhDs leaving academia to work in private research or outside research activities: who they are, where they are going and into what type of positions, what was the process of moving from academia toward other sectors, what did they have to learn to succeed in these new activities, and what skills did they acquire during the PhD which was useful for that move?

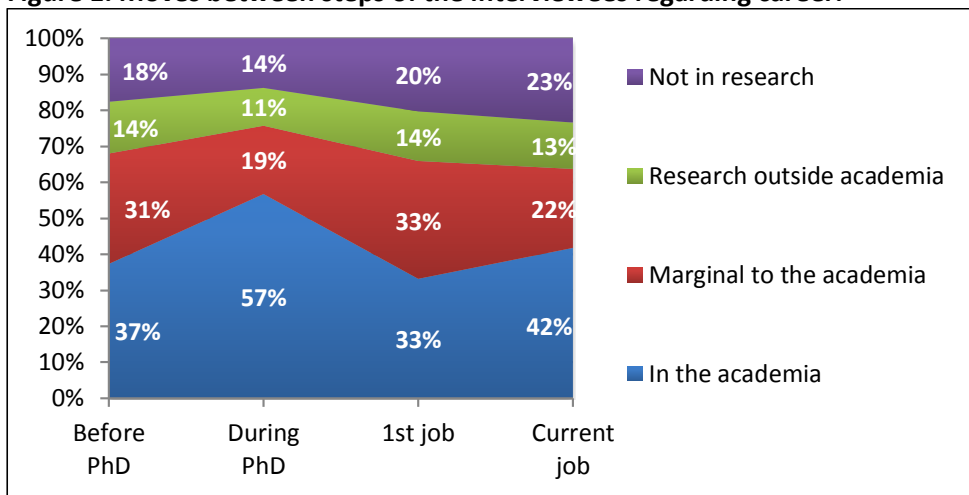
The POCARIM research improves the understanding of PhDs' trajectories in SSH and how these trajectories are shaped. It sheds lights on the learning processes of the PhD journey with a specific attention to SSH.

After PhD graduation, half of the POCARIM respondents were offered permanent employment, with 66% of these going into higher education and research. A further 10% ended up in higher education and research later on following a variety of alternative employment experiences.

One common characteristic for the vast majority of the SSH PhDs is the fact they are expecting to develop a career in teaching and/or in research in academia. Most of those who left academia say that it was mainly due to the fact their contract finished or because they were looking for better career opportunities. Those who left another sector to go back into higher education or research did so mainly because they were looking for better career opportunities.

Through the interviews, we can better understand the dynamics of the moves from one sector to another. A considerable change in career aspirations occurred during the PhD thesis. Before the thesis only 37% of the interviewees were thinking about an academic career, whereas at the end this had increased to 57%, including some who had no expectation to work in academia or who had no idea of what they wanted. Doing the thesis appears to increase the motivation to pursue an academic career (figure 1).

Figure 1. Moves between steps of the interviewees regarding career.



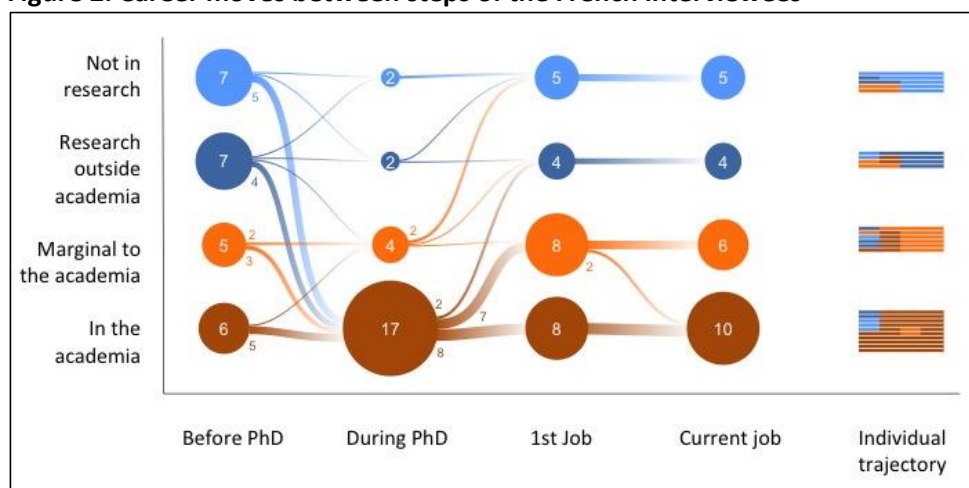
Source: POCARIM

However, the limited number of positions in academia leads many to work in insecure positions (for example on temporary research or teaching contracts positions), in marginal positions (for example in administration posts in academia), or in public research out of academia. At the time of the interviews most still aspired to a position in academia but were preparing themselves for the eventuality of never getting such a position and to the necessity of working out of academia or out of research.

It is also interesting to note that some were prepared to work in business (some of them were trained in engineering, business, health, agronomy, etc. before moving towards social sciences) but during the thesis changed their expectations. Furthermore, those who were thinking in terms of an academic career but who discovered the business or social and policy worlds during their thesis did not change their expectations. Finally, most of those who left academia still maintained some elements of academic work: participating in teaching at a university; still doing research in cooperation with academics; recruiting PhD students to their business and co-supervising the thesis; publishing, sometimes with co-authorship with academics, even if research is not part of their job.

However, there is some variation in career trajectories according country. In some countries, most of the PhD candidates were expecting to pursue an academic career and were already in permanent academic positions. In others, more candidates had no special expectation of an academic career, or were already working outside academia but became interested in and achieved permanent academic positions. In France, for instance, many of the PhD candidates started with the expectation of an academic career but only a few of them actual found permanent positions (figure 2). In Switzerland, half of the PhD holders stayed in the margins of an academic career with very few achieving stable positions. In Poland, many moved towards research out of academia, while in Germany many were moving out of research.

Figure 2. Career moves between steps of the French interviewees



Source: POCARIM

In terms of entry into an academic career or staying on the margins of academia, there is no difference between men and women in the first job after the PhD. However, after this first job more women PhD holders obtained a permanent position in academia.

The major differences appear between the main scientific domains. In the Humanities, there is a much greater expectation of an academic career but they are much less likely to obtain a permanent academic position than their colleagues; they are also less likely to find a position outside of research or in research outside the academy.

Finally, only a small number of interviewees planned or had begun a career outside academia. The move towards research outside the academia or towards another sector came mainly as a result of the combination of the uncertainty of obtaining an academic position and a growing knowledge of other sectors of activity. Moving outside academia is a process of progressive re-orientation. For some respondents, it was the discovery of the possibility to valorise the PhD for jobs like project management, design, consulting, innovation, etc.

But what emerges from the interviews is the learning process during which they discover both another world and the way to translate their knowledge for this new world. They also reshape the meaning of their research skills. But this process is very long.

Policy Implications and Recommendations:

- 1) National and European policymakers, institutional leaders, and training organisations should create opportunities to expose doctoral researchers to a diversity of environments through measures including:
 - Placements and secondments (block and day release) and through part-time research
 - Joint Supervisions
 - Access to funding to support face-to-face meetings and participation in conferences and events
- 2) Doctoral training institutions (and research groups) should build partnerships across sectors and develop innovative training programmes which provide opportunities for PhD candidates to explore non-academic career paths and settings.
- 3) Doctoral training institutions should support staff development opportunities designed to increase awareness of and confidence in impact-related activity. This might include writing and presenting for different audiences, Intellectual Property Rights, entrepreneurship, leadership, project management and other types of complimentary training.
- 4) National and European policymakers, and research institutions should increase funding to support the exploitation of the results of academic research, or the translation of academic results into products or programmes. This could include, for example, funding researchers' time beyond the life of a project.
- 5) Academic employers should review career progression systems to give greater weight to impact-related outputs to balance the emphasis on peer reviewed publications and research grant income. This may include recognition of dissemination in grey literature/policy reports; presentations to stakeholder communities and receipt of 'soft money' such as commissioned evaluations and consultancy funding.

2. IMPACT, CONTRIBUTION AND ENGAGEMENT OF PHD GRADUATES IN SOCIAL SCIENCE AND HUMANITIES

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 at the national and European level. 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 prioritising funding related to grand challenges in the EU and the UK. In the UK, impacts are being included in the Research Excellence Framework, which evaluates the quality of academic departments. Measuring impact has proved difficult. Even where academics are engaged with society, it is extremely difficult to assess the impact of these activities – in particular in the social sciences and humanities, where impacts are likely to be conceptual. This reports considers:

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

Academic impact and impact on society

A distinction noted by research policy-making organisations in Norway and the UK is that between **academic impact** and **impact on society** (Gustafsson and Hansen, 2013). According to RCUK for example, academic impact relates to the production of knowledge whereas societal impact includes a range of impacts, such as: enhancing cultural enrichment, quality of life, health and well-being contributing towards evidence-based policy making, influencing and informing practitioners and professional practice, changing organizational culture and practices, and contributing to regeneration and economic development (RCUK, 2011).

The literature review carried out in the POCARIM project revealed 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 Research Excellence Framework, for the first time, included societal impacts in the assessment criteria (Williams, 2012). In other countries too, many respondents were engaged in a range of activities where they impact on society, as shown by the following table:

Table 1. 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: from POCARIM prepared by D. Kupiszewska

Unsurprisingly, given that the majority of interviewees were academics, the vast majority (around 90%) had been involved in publishing and teaching, and a high proportion had managed or coordinated projects and supervised graduate or PhD students. More than half had also taken part in activities that involved engaging with society, in particular participating in policy-relevant conferences and giving media interviews. Direct impacts on policy such as advising policymakers and NGOs, sitting on committees or boards and developing products were less common, although still not insignificant.

In 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. A minority of interviewees questioned the need to try to impact on society, arguing that basic research or 'blue skies' research was perfectly acceptable as an end in itself, perhaps in countries where the impact agenda had not taken hold. Others made the case that academics should seek to impact on society.

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*'. This includes formal activities, such as collaborative research, contract research and consulting, as well as ad hoc advice and networking with practitioners.

Commercialisation involves the patenting and licensing of inventions and academic entrepreneurship. Perkmann *et al.* and others (e.g. D'Este and Patel, 2007) argue that, although engagement is far more common than commercialisation, academic research has focused on commercialisation. In social sciences and humanities, the nature of impacts is likely to be different, and commercialisation even less common than in science and technology.

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

Practitioners

The interviews showed that many researchers in the POCARIM study have an impact on various types of practitioners, including those in business, public bodies such as schools and the police, and the NGO sector. Impacts were reported in the fields of law, psychology and psycho-analysis, primary and secondary teaching, businesses (through consultancy and supporting entrepreneurs), the police and libraries, and on music school directors. Academic work often encompasses working with research participants, for example interviewing and sharing results with businesses, teachers or other professions, as well as individuals.

Government and policymakers

It was common for respondents to be involved with policy advice at different levels of policymaking. The level of impact varies, with researchers seeking to impact at the municipal, regional, national or international level. Many respondents were fairly confident that their input had had an impact at the national, regional or municipal level, in particular in Northern European countries.

The public

According to the survey, just over 50% of people had given press interviews or had their work covered by the media. Most interviewees 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 by the media. Humanities scholars impact on the preservation of cultural heritage, including languages, documents, artefacts, buildings and less tangible aspects of heritage, as well as on media and entertainment (e.g. music, theatre) (RAND Europe, 2010). Some people working in the arts were involved in developing museums, exhibitions, some had staged plays or organised music or arts festivals.

Engagement and impact

There is a distinction between **engagement** and **impact**. Academics are involved in a range of academic activities that involve engaging with societal stakeholders, however, this does not necessarily equate to impact. The POCARIM project showed that it is very difficult to demonstrate impact, confirmed also by Rand Europe (2010). Impact is influenced by many factors, including whether the impacts are direct or mediated, what spatial level the impact takes place at (local, regional, national or international) and the time it takes to have an impact. The POCARIM interviews revealed that, even where researchers are engaged at various levels with other stakeholders, it is hard to evaluate the impact of this work. It was frequently pointed out that their voice is only one of many, and that their own impact is likely to be modest.

The spatial context and timing also influence the extent to which impacts are direct or indirect. Some 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 often unclear at the international level. However, some researchers could point to a greater impact at the national or regional level. It was pointed out by many interviewees that it takes years to produce results and to publish academic papers. A report by RAND Europe confirmed this, arguing that, *'Arts and humanities research impact tends to work cumulatively, through depth and/or breadth of research over many years'* (RAND Europe, 2010, page xiv of Executive Summary).

Policy Implications and Recommendations

- 6) Institutional leaders, as well as national and European policymakers should recognise the complex nature of impact, and review impact metrics to account for the nature of different types of research, the nature of knowledge (applied/basic/conceptual/theoretical) and its application, the spatial scale and timescale of impacts, and the stakeholders on whom academics seek to impact.
- 7) Academic reward systems should be changed to also reward achievements other than peer-reviewed publications. This could be achieved in different ways, and might include developing different career paths where impact is rewarded alongside traditional academic careers. Another option may be to employ others to focus on developing impacts rather than expecting academics to do this.
- 8) Doctoral and in-house training and awareness of impact should be developed. Training should incorporate transferable skills and activities related to impact. This might include, for example, writing and presenting for different audiences, Intellectual Property Rights, entrepreneurship, leadership, project management and other types of complimentary training.
- 9) Incentives should be increased for academics to develop academic outputs into policy and other types of outputs, products and programmes where appropriate.
- 10) Funding should be increased for exploiting the results of academic research, or translating academic results into products or programmes, including both SSH and STEM subjects.
- 11) More extensive links with other sectors, and in particular businesses, would increase awareness of the contribution of social sciences and humanities. More extensive use of secondments would facilitate this.

3. THE ROLE OF NETWORKING IN THE SOCIAL SCIENCES AND HUMANITIES

This section focuses on the subject of networking. Networks are critical to many aspects of the POCARIM project. On the one hand they play an important role in career development both in terms of disseminating information about positions and research opportunities. In many cases they lubricate access to those positions. In a more general sense they shape flows of knowledge and ideas, building bridges between disciplines, sectors and international actors. The role of networking in the promotion of knowledge exchange and the realisation of the 'Fifth Freedom' (Free Movement of knowledge) is clearly spelt out in the Commission Communication on the 'Innovation Union':

Increased mobility is strongly associated with the creation of knowledge networks, improved scientific performance, improved knowledge and technology transfer, improved productivity and ultimately enhanced economic and social welfare (European Commission, 2010, p. 21).

Given the significance of networks to critical processes that lie at the heart of POCARIM objectives, we have been interested to understand the dynamics of network formation, the characteristics and qualities of networks in the social sciences and humanities and factors shaping their growth, evolution, sustenance and demise. With these concerns in mind this sections addresses five questions:

- (1) How and when are networks formed?
- (2) What are networks like?
- (3) How are networks maintained and encouraged to evolve?
- (4) What obstacles exist to network formation and evolution and how can they be overcome?
- (5) What do networks achieve for the researchers involved and for research itself?

Network Formation Processes

The findings emphasise the importance of the early career stage to the formation of social capital through critical networks and the pivotal role that doctoral supervisors play in this process. Although individual doctoral supervisors play a particularly important role, respondents referred to a slightly broader group of key actors encompassing the wider doctoral committee including examiners, members of collaborating research teams and also the research environment, and general 'milieu' including peer friendships. Joint degrees and/or joint supervision (between countries, sectors and disciplines) play a valuable role in enhancing network formation.

Network Tenacity and Evolution

Many of the networks formed at early career stage persist and continue to play an important role in career progression and mobilities. Where the researcher themselves (or members of their network) relocate internationally or inter-sectorally this often results in network 'stretching' and extension rather than decay. Even where researchers move out of academic many retain links through doctoral supervision and project collaboration. Mobility between disciplines can have the same effect although, in some cases, it marks the declining significance of some networks. Many respondents referred to their engagement in complex multi-disciplinary networks.

Where researchers lacked opportunities to build relationships outside of the academic sector during their doctorate they felt less able to do so after their doctorate, emphasising the importance of creating opportunities for engagement during doctoral research.

The data also highlight the value of conferencing and business travel, both as a mechanism to facilitate network generation and an outcome of social capital. The data also point to the role that 'serendipity' or 'happenstance' plays in critical network formation indicating the value of facilitative and creative environments conducive to 'chance' encounters.

The findings emphasise the often very informal basis of networks emerging as 'friendships' over time. Having said that, some people felt that more formal and structured links between institutions and communities were necessary to facilitate and embed these personal relationships.

Co-Presence and Network Maintenance

Co-presence (and the ability to physically meet) plays a role in network formation but also maintenance. This is of particular importance when it comes to inter-sectoral relationships, many of which are grounded in

proximity (local geography). Many researchers cited the benefits of low cost travel in keeping networks fresh. In international relationships virtual communication can sustain active networks although even here regular visits were seen as highly valuable.

Although networks may often take a more 'dormant' character they often retain a latency which is quite easily stimulated when a specific need arises.

Obstacles to Networking

Obstacles to network formation and evolution were identified. These include accessing funding for active networking (and especially the co-presence aspects), the time they had available to them to invest in relationships – taking family and life course into account, the effect that language has on the scope of networks and, finally, the effect of disciplinary specialism or methodological approach to the need for and scope of networks.

Unsurprisingly, funding is a major factor shaping the ability to network and lack of funding, especially after the doctoral phase, is a critical obstacle to networking. Engaging in the kinds of mobilities, be they long stays or repeated (and often unpredictable) short stays presents particular challenges for researchers with caring responsibilities or disabilities. Respondents noted the impact of such situations on networking both internationally and within their institutional environment. This impacts particularly (but not exclusively) on women.

Language skills also present obstacles to a far greater extent than in the natural sciences given the nature of research in the social science and humanities (Ackers, 2013).

Respondents also identified issues connected to attitudes towards hierarchy or prestige that may promote a more elitist, territorial or competitive attitude towards networking. The European Framework for Research Careers report (European Commission, 2011) notes the continued impact of forms of hierarchy and 'feudal' relationships that continue to characterise supervisor/doctoral researcher relationships in some national contexts.

The Impact of Networks

Responses evidenced the disparate roles of networks, including the role they play in career building (through accessing positions, funding or teaching opportunities or opportunities for dissemination and publication), or from a methodological point of view, in accessing research populations and data and methods training or, more generally, in morale and confidence raising.

A very small minority described their networks as 'unproductive.' A significant number of respondents indicated that their networks played a major role in shaping their ability to access critical actors. In most cases, personal relationships intervene to undermine formalistic, purely merit-based, approaches to open recruitment.

One of the most commonly cited outcomes associated with networks was research dissemination. Conferences and events play an important role both in generating networks themselves but also in providing opportunities for researchers to disseminate their research. Networking development and dissemination thus go hand in hand in a circular and mutually reinforcing process.

Unsurprisingly, networks and relationships play a critical role in accessing opportunities for publication. And publications lie centre stage in terms of career entry and advancement. This may take the form of opportunities for co-authorship, relationships with journals or editors or peer reviewing papers.

Other respondents referred to the role that networks played in enabling them to become involved in grant applications and funded research – another factor critical to career progression or teaching.

The role that networks play in supporting the research process perhaps through accessing data archives or populations for empirical research and also research training is perhaps less recognised but emerged as an important factor in the interviews.

Policy Implications and Recommendations

12) Networks have a critical role to play in building research relationships and facilitating the kinds of boundary spanning activities that lie at the heart of the Innovation Union. However access to relatively small and flexible sources of funding to support meetings and attendance at events has declined in recent

years. Research performing institutions should be encouraged to make funds available to support these activities (including attendance at policy-oriented or stakeholder events)

- 13) The development of joint doctorates or mechanisms encouraging joint supervision or placements at international, interdisciplinary and intersectoral level would significantly enhance research relationships at doctoral level with long lasting repercussions.
- 14) Networks undoubtedly play an important role in providing information about positions and facilitating applications. Whilst dissemination of opportunities via networks is valuable, it is important that all positions remain genuinely 'open' to candidates irrespective of their networks.
- 15) Engaging in the kinds of activities conducive to optimal networking involves time commitments that often challenge researchers with family or caring responsibilities with a particular impact on women as primary carers. Every opportunity should be taken to ensure that these researchers are supported to engage in network-building activities. This includes careful attention to the timing of meetings and events to avoid, wherever possible, anti-social times (evenings and weekends).

4. INTERDISCIPLINARITY IN SOCIAL SCIENCE AND HUMANITIES CAREERS

Mobility and interactions between members of disciplinary communities are seen to be one of the keys to mobilising knowledge and generating innovation in the knowledge-based economy. Whilst a good deal of policy and research attention has been given to the role of disciplinary border crossings in fields such as the sciences, technology and engineering, there has been less focus on the social sciences and humanities.

The European Commission's commitment to the development of interdisciplinarity in doctoral training and research funding is a core element of the strategy for addressing the societal problems Europe faces. Notably, the Communication 'Delivering on the Modernisation Agenda for Universities' (2006) asserts the need for a shift in research from disciplinary organisation, practices and goals to a problem-oriented, cross-disciplinary model.

One aim of the POCARIM project was to explore the extent and nature of cross-disciplinary mobility and collaborative research activity in the POCARIM social science and humanities (SSH) population. Specifically, we wanted to understand the motivations and outcomes of this activity in terms of careers, knowledge transfer and innovation.

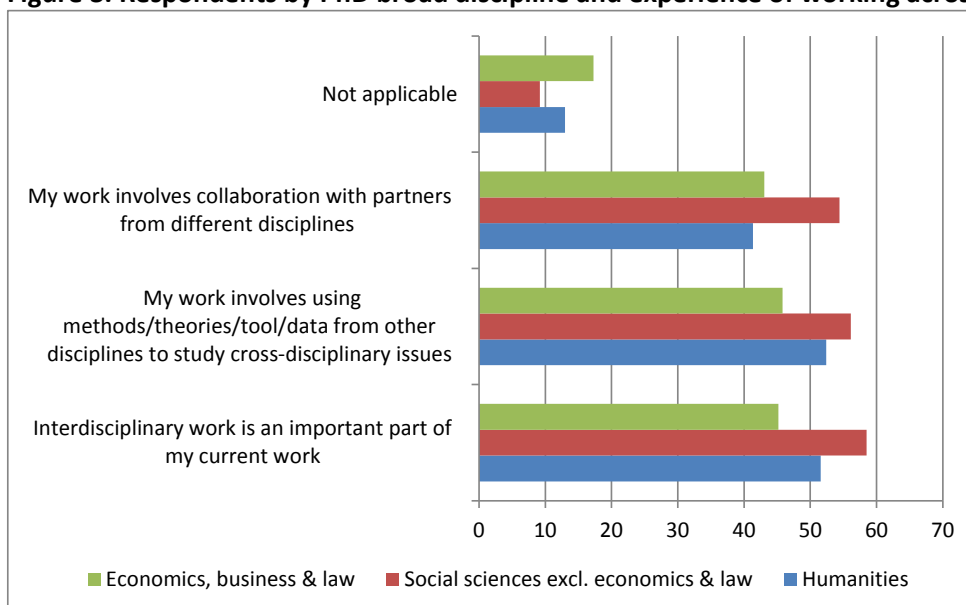
A number of possible frameworks for understanding disciplinarity and interdisciplinarity exist (Apostel *et al.*, 1972; Klein, 1990; Bushaway, 2003). However, in the POCARIM study we did not impose any understanding of interdisciplinarity, but interpreted it broadly to mean any cross-disciplinary activity conducted collaboratively or individually (through 'borrowing' from other disciplines or moving over time into new fields) (Strathern, 2007; Lacutta, 2003).

Interdisciplinary exchanges could include methods, concepts or subject knowledge, and could be between closely related subjects within the social sciences and humanities or between more distant fields. This view of interdisciplinarity enables us to identify a wide range of activities in which respondents undertake a degree of mobility between disciplinary communities which entails adaptation, learning and creativity.

We found that researchers in the POCARIM population are highly interdisciplinary, far more so than suggested in other research (for example ICCR Foundation, 2010; European Commission, 2009). However, POCARIM interviews suggested that most interdisciplinary activity was conducted between fairly closely related disciplines. In addition, our survey suggests that the proportion of SSH researchers who incorporate elements of another discipline in their work is greater than the proportion who is engaged in formally collaborative interdisciplinary work.

There were some significant differences between interdisciplinary activities according to both national and disciplinary location. Social scientists were most likely to report that interdisciplinarity was important to their work, and also that they engaged in both interdisciplinary collaborations and borrowing (figure 3).

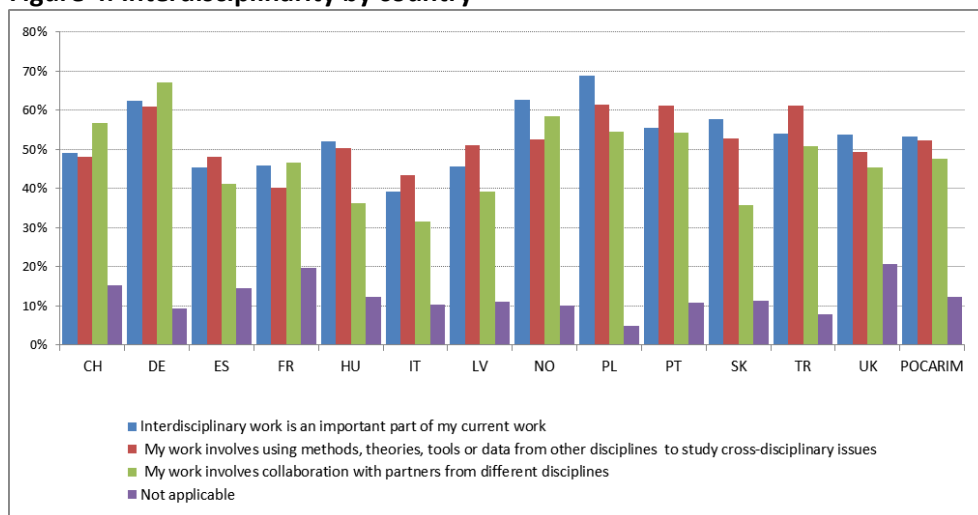
Figure 3. Respondents by PhD broad discipline and experience of working across disciplines (%)



Source: from POCARIM prepared by D. Kupiszewska

Much greater differences are evident in cross national comparisons. 68.9% of Polish respondents, for example, reported that ID was an important part of their current work, whilst this figure was only 39% for the Italian respondents. Interestingly, in six out of the 13 POCARIM countries women were more likely to be involved in collaborative modes of interdisciplinarity than men, and in six countries they were more likely to be involved in borrowing modes of interdisciplinarity (figure 4).

Figure 4. Interdisciplinarity by country



Source: from POCARIM prepared by D. Kupiszewska

There appears to be a gendered dimension to interdisciplinarity. 56.6% of male compared to 50.8% of female respondents overall reported the importance of interdisciplinarity to their work. The degree of collaborative interdisciplinarity (49.3% males and 46.4% females) revealed a difference greater than in the case of the 'borrowing' mode (52.8% of men compared to 51.4% of women). Overall, however, compared to national differences the gendered differences in interdisciplinarity are relatively slight.

Unpacking these patterns in cross-disciplinary activity is complicated, but it is evident that national cultures, funding and policy agendas play a role. For one thing, funding strategies are a major incentive to interdisciplinarity. However, some interviewees suggested that there was some risk that this can lead to strategic assemblages of researchers with limited added value to the substantive aims of a project.

Research career structures, funding and evaluation in SSH remain strongly disciplinary in nature, and this is a disincentive to interdisciplinarity. The two main concerns associated with interdisciplinarity reported by POCARIM interviewees were, firstly, that the value of interdisciplinary work is not recognised in terms of publications, grant applications or system level evaluations.

Secondly, there was a perception that researchers, in particular those at early career stages, could be less employable if they develop an interdisciplinary identity, largely because of the importance of teaching a range of discipline-specific undergraduate courses at these stages.

Furthermore, POCARIM found a concern that interdisciplinary work places greater demands of time and effort upon researchers. This includes reading up on unfamiliar concepts and methodologies, and developing a mutually comprehensive vocabulary through which to engage across disciplines.

Nevertheless, the value of interdisciplinarity is reported widely across the POCARIM study. The value is reported most emphatically insofar as it enables researchers to bring a range of perspectives to bear on a complex problem, build a fuller picture of the issue under study, and devise novel ways to approach and address it.

Interdisciplinary activity can expand the intellectual resources available to a researcher, as well as contribute to the development of broader and more varied networks and, consequently, opportunities. This finding lies in tension with the anxieties about employability which were also evident.

In fact, the impact of interdisciplinarity was strongly indicated by the survey findings. For example, respondents who indicated that ID was important in their work were three times more likely to also report that they had developed innovative products and 2.6 times more likely to have been a board

member/volunteer/advisor in an NGO. However, they were only 1.1 times more likely to have taught students or to have published textbooks, monographs, articles or books (table 1).

Table 2. Respondents by impact instrument/activity and experience of working across disciplines (%)

Impact activity	'Interdisciplinary work is an important part of my current work' (a)	None of the 3 options of interdisciplinarity is applicable (b)	(a)/(b) ratio
Developed innovative products	28	9	3.0
Been a board member/volunteer/advisor in an NGO	33	12	2.6
Been a board member in a company	14	7	1.9
Given interviews in media (radio, TV, newspapers)	60	34	1.8
Have participated in societal or political committees	40	23	1.8
Have managed/coordinated projects	74	42	1.8
Have advised to policy-actors on the local, regional, national or international level	41	25	1.7
Have taken part in in knowledge transfer activities	73	46	1.6
Have supervised graduate or PhD students	69	46	1.5
Have participated in policy-relevant conferences or events	66	50	1.3
Have taught students	91	79	1.1
Have published textbooks, monographs, articles, books	91	81	1.1

Source: from POCARIM prepared by D. Kupiszewska

POCARIM revealed some of the ways in which cross-disciplinary activity could come about. Interdisciplinary activity was found to emerge mainly from planned 'moments' such as conferences, or through repeated encounters in faculties and departments in which researchers from a variety of backgrounds work side by side.

Policy Implications and Recommendations

- 16) Academic employers should review career and reward structures to reflect the demands of policymakers for greater cross-discipline engagement. Currently, excellence metrics privilege single discipline outputs.
- 17) At institutional level, recruitment, reward and progression systems need to reflect the increasing number of researchers engaged in interdisciplinarity or who aspire to work across disciplines. Funders and policymakers need to put in place mechanisms which recognise the value of interdisciplinarity in individuals and in projects.
- 18) Effective interdisciplinary collaborations emerge from environments and activities – or interdisciplinary 'space' and 'moments' – in which opportunities for interaction are plentiful, and individuals find intrinsic motivation through shared interests. Institutions and policymakers should facilitate these encounters through interdisciplinary centres, departments and faculties, as well as 'seeding' events at which a mix of researchers explore the possibilities for collaboration. Policymakers could host workshops or conferences that focus on problems of interest and which enable new alignments of researchers to emerge. Groups that emerge could be encouraged to bid for funding.
- 19) Interdisciplinarity involves greater time and effort than single discipline work. Policymakers and institutions should recognise this through, for example, allowing relatively more research or writing time for researchers working across disciplines.

5. INTERNATIONALISATION AND INTERNATIONAL MOBILITY IN SOCIAL SCIENCE AND HUMANITIES CAREERS

The Innovation Union Communication asserts the need for researchers to be able ‘to work and cooperate across the EU as easily as within national borders’ and for the development of ‘frameworks for a truly free movement of knowledge’ (2010b). In this way policymakers aim to establish Europe as the most advanced knowledge-based economy in the world.

Against this background the POCARIM project explored the movement and engagements of social science and humanities (SSH) PhDs across national borders. Specifically, we aimed to understand the motivations behind and the obstacles to international mobility, as well as its consequences and impacts not just for the individual but for social and economic communities on multiple scales.

The POCARIM team found that, in all countries of the study, international mobility and engagement were common policy themes from the doctoral training phase onwards. Motivations for this included enhancing international networking and knowledge exchange, as well as more market-focused responses to funding crises. However, compared to science, technology, engineering and mathematics (STEM) fields, subjects in SSH were more likely to have experienced funding cuts and to be less valued in policy and public discourses. This situation had implications for patterns of international mobility and engagement.

POCARIM also revealed a high level of international mobility amongst SSH researchers in the sample, with short-term mobility in particular being commonly undertaken. With the exception of Spain, France and Poland, for example, around 80% or more of respondents from all countries had engaged in short-term mobility (a POCARIM average of 82%), with 62% doing so regularly or frequently. This high degree of international mobility and other types of cross-border engagement suggests that there is a transnational space of SSH research which encompasses the POCARIM countries and others. This space is primarily European, with the UK and Germany playing central roles. However, the United States is also a significant destination for all types of mobility and international engagement.

For countries which are relatively peripheral or in which funding for international activity is limited, welcoming foreign researchers to conferences and workshops or to longer-term fellowships was reported to enable relatively immobile researchers to build networks and play a role in international communities.

The place of each country in patterns of international activity are shaped by a number of factors: cultural, linguistic and historical legacies; research and academic career paths, practices and expectations; and the availability of financial, infrastructural and other resources (including people and reputations). To varying degrees disciplinary traditions can also be associated with particular countries. Country-specific factors influence the international activity of SSH researchers in two key ways. Firstly, mobility of shorter duration is enabled or inhibited by funding and other institutional or national structures (such as time off for travel), the overall internationalisation of an academic or research system, and the geographical proximity from key centres (and therefore costs of travel).

Secondly, mobility of longer duration, and in particular cross-border career moves, can also be problematic in country-specific ways. For example, a professional profile established over time in one country may not translate to another country. This may be because a narrower set of interests or different activities is valued, or because an incoming researcher lacks the necessary networks to be able to identify or be considered for opportunities. Therefore, whilst there is evidence of a transnational labour *pool* in SSH research, labour *markets* remain in many ways nationally specific. The UK’s very open labour market, for example, contrasts dramatically with the closed labour market in Italy, in spite of the fact that both countries could potentially draw on the same population of mobile researchers.

National characteristics and traditions are not determining, however. We also find evidence of changes in patterns of international activity occurring in both ‘bottom up’ and ‘top down’ ways. For example we found evidence of a reorientation of researchers in former Soviet Bloc countries which reflects wider national and European trends; and we found numerous examples of the influence of European funding on the geographies of interactions in large-scale research projects.

The most commonly reported forms of mobility amongst the POCARIM respondents were of short to medium duration. These included travel for conferences and workshops, fieldwork, and in order to conduct cross-

border collaborative search. There were fewer instances of mobility of longer duration or which were open-ended or permanent.

It is clear that experiences of international mobility at early career, PhD or pre-PhD phases contributed to a positive view of the value of mobility later on, and a predisposition towards international activity. The POCARIM survey revealed that respondents with experiences of international mobility were more likely than their immobile peers to have reported a range of impacts from their work. They were, for example, more than twice as likely to have had experience with the media than those without international mobility experience, and almost twice as likely to have advised policymakers at some level (table 3).

Table 3. Relationship between international mobility and impact

Impact activity	Mobility experience		Yes/No ratio
	Yes	No	
Given interviews in media (radio, TV, newspapers)	58	27	2.2
Have advised to policy-actors on the local, regional, national or international level	40	22	1.8
Have supervised graduate or PhD students	71	44	1.6
Developed innovative products	25	15	1.6
Been a board member/volunteer/advisor in an NGO	30	19	1.5
Have managed/coordinated projects	71	48	1.5
Have participated in policy-relevant conferences or events	66	45	1.5
Have participated in societal or political committees	37	28	1.3
Have taken part in in knowledge transfer activities	71	54	1.3
Been a board member in a company	12	10	1.2
Have published textbooks, monographs, articles, books	93	77	1.2
Have taught students	91	82	1.1

Source: from POCARIM prepared by D. Kupiszewska

In the interviews, too, numerous positive outcomes of international mobility were reported. These included straightforward knowledge transfer and acquisition, an understanding of different perspectives and academic cultures, and the establishment and maintenance of networks.

Moreover, we found that researchers who were internationally mobile were more likely to be engaged in international collaborations. Therefore, countries with a high proportion of internationally mobile researchers are also more likely to have a high level of international collaborations. This was found to be the case for all countries except Turkey, which had a lower than expected level of collaboration.

Different durations of mobility are related to different outcomes. For example, frequent, short trips enable networks to be established and to grow. Longer-term trips are associated with greater embedding in, and understanding of, host academic cultures, although there is a limit to the degree to which additional time adds additional value. However, in order to maximise the knowledge and network returns from longer international stays, mobile researchers must develop positive social and professional relationships with peers.

One caveat in this discussion is that it is difficult to say what direction the influence travels – it is important to note that the development of networks, professional reputations and impacts, and international activity are parts of a circular process through which careers are established. In other words, as careers progress, publications lead to reputation and networking which, in turn, leads to opportunities for international activity and higher profile forms of impact.

The role of mobility in the lives and careers of SSH academics is not uncomplicated, however. For some interviewees mobility was more forced than desired. In terms of long-term mobility this could be the case if there is a strong expectation or a formal requirement for foreign experience in order to secure a job at home; or where the national labour market is effectively closed and researchers are forced to go abroad for work.

Shorter trips were also reported as being disruptive to personal and professional lives. A common problem was the inadequate support at institutional level or at home to enable mobility when it was desired. This was particularly problematic for researchers in geographically peripheral places. It is also likely to be a factor in the relatively lower levels of mobility amongst women.

Policy Implications and Recommendations

- 20) National and European policymakers should recognise the influence of national traditions, resources, disciplines, career paths and labour markets on the complex and diverse patterns of international activity practiced by researchers. In practice this would mean supporting a wider and more complex range of international and mobility practices.
- 21) There is no single mode of international activity – mobility or otherwise – which is universally appropriate for all researchers or all research aims. Organisations should therefore incentivise the widest range of mobilities from longer through to short stays tailored to the needs of the research and the researcher and appropriate to the desired outcomes.
- 22) Institutional leaders, as well as national and European policymakers, should support the inward mobility of researchers through shorter (i.e. conferences) or longer (i.e. fellowships) visits. In this way relationships and networks can be established that provide essential connections to international fields, knowledge and skills, as well as career information and opportunities. Equally important, supporting inward mobility helps to counter ‘brain drain’ from peripheral institutions and regions.
- 23) Institutional leaders, as well as national and European policymakers, should support organised programs involving institutional collaborations, joint degrees or joint supervisions. These can play an important role in supporting doctoral researchers, leaving them less reliant on supervisory relationships.
- 24) The value of international experience is clear. However, SSH researchers should be fully informed of the opportunities and risks associated with international mobility, and provided with strategies to facilitate positive experiences. Such information would have greatest value at doctoral phase and early career stages, and should be incorporated into researcher training.

6. THE IMPACT OF PARTNERING, PARENTING AND OTHER CARING RESPONSIBILITIES ON SSH WORK AND CAREERS

Partnering, parenting and other caring responsibilities constitute a serious challenge to the careers, mobilities and impacts of PhD holders involved in scientific research in the Social Sciences and Humanities (SSH).

The thorough review of existing research at national, European and international level that took place as part of the POCARIM project identified as an issue the extent to which women (and other groups to a lesser degree) were disadvantaged in research careers in a number of ways. In terms of who drops out from scientific careers, it was pointed out that some authors specifically highlight that gender shapes success in academic labour markets, women tending more than male researchers to drop out both after completing PhDs and in the post-doctoral phase (Velichová, 2003; BMBF, 2008; Chlosta, Pull et al. 2010). This is due to key decisions related to the establishment of a family, as well as job insecurity and unclear prospects (BMBF, 2008).

Female as well as older academics, without academic family backgrounds, living in partnerships, in dual-career constellations and with children, are less frequently supported by mentors, have low funding support and are disadvantaged in the labour market in terms of recognition and academic promotion (Leemann, 2010).

Furthermore, women show a slower progression in their academic careers and lower job satisfaction compared with men (Casaca and Lopes, 2008; Perista, 2013).

A further important dimension of career progression requirements in scientific work relates to the expectation of mobility and the ability to travel frequently. Previous research (e.g. Ackers, 2005; Ackers and Gill, 2008) has stressed that career progression in scientific research demands a very high level of mobility in order to achieve the level of international experience necessary for progression. This high 'expectation of mobility' associated with science careers is discussed in the literature mainly in terms of its interplay with family status and parenting in particular (e.g. Perista, 2013).

According to Ackers (2010), the growing pressure on researchers to be mobile as a necessary step toward internationalisation and excellence in research is likely to produce discriminatory outcomes for women, given their disproportionate caring responsibilities. Temporary and short-term stays can diminish women's personal risks by making careers international without forcing relocation and significant disruptions to family lives (Ackers, 2008).

Research has thus shown (e.g. Ackers, 2004, 2005, 2008, 2010; Ackers and Gill, 2008; Perista, 2013) the relevance of placing emphasis on the importance of gender and life-course, partnering and parenting in particular, in the migration decision-making processes of male and female scientists.

Evidence from the POCARIM survey and qualitative interviews contributes to further explore how these family-driven gendered dimensions, parenting in particular, actually impact differently on men's and women's migration decision-making processes, and how this gendered differential ability to respond to the 'expectation of mobility' represents a key factor in understanding the progression and impacts of women and men in science careers in the SSH.

Partnering, Parenting and other Caring Responsibilities

Partnering, marriage and parenting have strong impacts in the lives of women and men in science careers in the SSH. It is almost as if having an 'abnormal' life, i.e. being single and childless and having no personal life, was a pre-condition to be able to fully commit to scientific work. One key implication of partnering was that it shaped the location and mobility decisions of the respondents. This became more prominent with the birth of children. In particular, the freedom to undertake work-related mobility was curtailed. At the age when it is common to start a family, women scientists have to decide whether to postpone the beginning of their career path until after raising children, or to try to combine the two. Only a few of the respondents decided to postpone starting their family because of work. Even when the children have grown, other family-related responsibilities, domestic work and household tasks in particular, traditionally imposing on women, still have an impact. For men, instead, family acts as a supportive structure rather

than an inhibiting one. In order to manage the necessity of mobility in their professional lives, some respondents reported spending extended or frequent periods away from their partners or families, that is, 'living apart together'.

As well as parenting and partnering, other caring responsibilities also had an impact on the work and career of some respondents. As respondents reported, elderly parents or a serious health problem in the close family may constitute a difficult challenge.

The Work/Family Articulation

At certain times along the life course, the family influences the flow of work of everyone. At these times people change their life priorities, work responsibilities and their career ambitions. Only a few PhD holders in SSH who participated in the research did not intend to have a family in the foreseeable future. This decision was closely linked with career paths and a fear of complications that could occur with childcare.

Time and temporalities emerge in complex and multi-faceted ways in the interviews. Time use and time pressure are often intertwined in the respondents' reports, also among married men with children.

On top of practical problems were perceptions of cultural expectations of mothering which placed the burden of care on women. Some respondents who are mothers talk about the difficulty of finding the balance between family and professional life and suggest this is a particular problem for women. These responses echo the sense of guilt and self-penalisation many professional women express in relation to their mothering.

In some countries, such as Slovakia, motherhood and maternity leave were associated with the loss of work and exit from academic careers, due to the fact that contracts were short-term and institutions were not obliged to hold positions open.

Personal Social Networks

Personal social networks may be an important way of securing informal support. The POCARIM respondents mentioned their parents most frequently in cases of helping with children's' upbringing. This family support is even more crucial for single-parents. Respondents often stayed close to their families and used the possibility of support from parents. Despite the importance attached to personal social networks, and to the role of grandparents/grandmothers in particular, the impacts of the current economic and social crisis in terms of job precariousness and unemployment may lead some PhD holders in the SSH to reconsider their former options and to move where to a job is available.

Family and Mobility

Mobility, and/or immobility, was the most frequent issue when the POCARIM respondents talked about family.

The majority of the POCARIM survey respondents, both male and female, were occasionally in contact with colleagues abroad, followed by a large minority who were in regular contact with colleagues abroad, and also quite a large minority who were never in contact with colleagues abroad. Having a partner and especially having children has some impact on the frequency of international collaboration, which tends to be more occasional or even to never occur.

The impacts of family on international mobility were also highlighted by most POCARIM interview respondents. Our respondents who were single and had no caring responsibilities at the time of research did not see any obstacles with mobility. In contrast, if our respondents had a family, they had limited options to undertake these work stays. Medium and long-term mobility present specific challenges.

The extent of international mobility is thus shaped by having a spouse/partner and parenting in particular, as well as by gender, as shown by the outcomes of the POCARIM survey. Many of the female respondents to the interviews rejected the alternative of migration abroad because of the need for stability when raising a child. Nevertheless, they did not give up their career plans, rather they just postponed them to a later stage in their life course, a time when their children will be grown up or more self-sufficient.

Respondents who had refrained from travelling due to family reasons are well aware of the negative impact this has on their image as an 'excellent scientist', as well as on their ability to network and publish.

Caring, Gender and Working Conditions

The interplay between family care work and scientific careers shapes working conditions in a number of ways.

At the most immediate level, respondents refer to the tensions during the typical working day. Here we see discussions about long (daily) working schedules and overtime or anti-social working hours, especially at the end of the working day when parents and especially mothers have to collect children from nursery and school.

A common concern was not simply that work may continue into the early evening, but also that the nature of the work commitments at that time of the day may be of particular significance. The practice of calling meetings at the end of the day is frequently referred to.

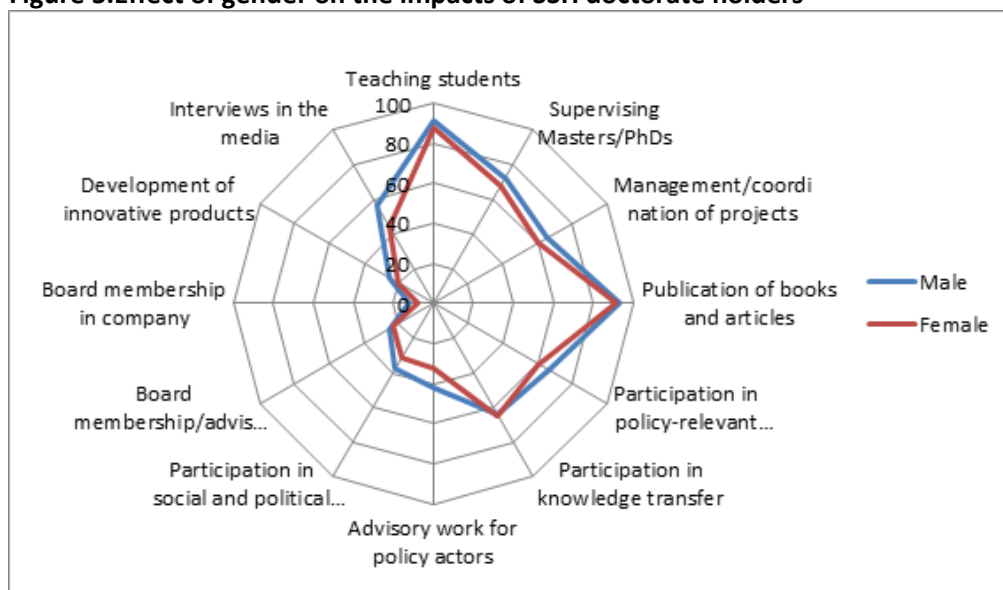
In addition to the structure of the working day, respondents note pressures across the typical working week. These include an expectation of very long working hours (well in excess of the European Working Time Directive) often involving evening and weekend working, but also serious concerns about the impacts of part-time working. This includes the importance attached to attending conferences either nationally or internationally (business-stay mobility) in performance management systems (for networking and/or dissemination).

A number of obstacles to network formation and development were reported by the interviewees. Inhibiting factors included family and time. The combination of academic workloads and family obligations, for example, left little time for travel or other non-essential activities.

Moreover, the effects can be cumulative and become part of a circular process, with limited access to networks and opportunities resulting in lower profiles, further exclusion and limited impacts.

One of the aims of the POCARIM study was to identify the impacts SSH PhD graduates had through their work. The gendered nature of the impacts is clearly evidenced by the POCARIM findings: men report greater impacts than women in all the types of impact considered, except for participation in knowledge transfer (figure 5). The gender gap is particularly significant regarding supervision of Masters/PhDs; management /coordination of projects; participation in policy-relevant events; advisory work for policy actors on the local, regional, national or international level; participation in social and political committees; and interviews in the media (radio, TV or newspapers).

Figure 5. Effect of gender on the impacts of SSH doctorate holders



Source: POCARIM

Surprisingly, according to the responses to this quantitative survey, parenting and partnering do not seem to have a negative influence on the impacts of SSH PhD holders, in fact they have the opposite effect, i.e., respondents with a partner and/or children tend to report greater impacts. However, due consideration should again be given to age as a key factor, because the likelihood of having positive impacts, regardless of the type of impact, tends to increase over the life course.

Differences in terms of working conditions between academia and private sector organisations were reported in the POCARIM interviews. For several respondents, differences between universities and the private sector reflected favourably on academia. They reported having more freedom to pursue their interests, less pressure and more flexibility.

On the other hand, the PhD researchers who stayed in academia often emphasised the fact that excessive workloads have an impact on the quality of their work and of stays abroad without adequate financial reward. The nature of their responsibilities is often not delimited by their workplace: it is common for them to take their work home, and their personal and professional lives merge into each other.

Respondents also indicated the importance of stable work and job security. Securing stable and long-term work was an ambition for many, and was particularly important for women. In addition, whilst travel and other experiences may be desirable (or even a professional necessity), the priority once children are born becomes stability of income and location. It was common for various kinds of arrangement, such as part-time work, to be in a place which allowed women to combine careers and caring. Broader issues of welfare and social benefits were also noted, for example those associated with children, disability or age.

Another requirement for academic career progression is publication. Again here more female respondents acknowledged the difficulties in combining publication with caring responsibilities.

Policy Implications and Recommendations

- 25) Contractual insecurity (and unemployment) remains a major concern for researchers. Employers and funders of researchers should ensure that fixed-term status does not comprise entitlement to forms of leave (for reasons of maternity, parenthood and sickness).
- 26) Institutional leaders, as well as national and European policymakers should take steps to ensure that the professional evaluations/assessments which influence career progression take career breaks into consideration so that those using parental/care leave, and/or those with special caring responsibilities, e.g. for a child with a disability, are not penalised.
- 27) Institutional leaders, as well as national and European policymakers should value multi-tasking and organisational skills related to the articulation of scientific work and family life alongside other traditional indicators for performance metrics, such as publications.
- 28) Institutional leaders, as well as national and European policymakers need to acknowledge that the cultures of 'presenteeism' in academic workplaces, long working hours and frequent and/or long-term mobility may constitute a form of indirect gender discrimination. These practices, based on the assumption that 100% availability is a pre-requisite for career progression, do not affect women exclusively or by design, but contexts of family life, gendered roles and cultural expectations mean they are felt far less frequently and/or to a lesser degree by men.
- 29) Institutional leaders, as well as national and European policymakers should acknowledge that in a context of 'expectation of mobility', the consequences of immobility are in many cases to inhibit or bring to an end an academic career. International mobility practices and opportunities should be placed in context, taking into account that personal dispositions might inhibit or motivate mobility, as might family situations (children, elderly parents) at different times. These factors and others, with particular gender dimensions, can have a significant impact on mobility practices.
- 30) Opportunities to attract researchers from other countries and sectors into research institutions may be of particular value to those researchers who are unable to exercise mobility themselves. Institutional leaders, as well as national and European policymakers should encourage institutions to host researchers from other countries and sectors, and therefore provide opportunities for less mobile local researchers to build networks and collaborations.

The findings contained in this brief 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.² We draw out the implications of our findings for policymakers.

The research 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 (Ackers *et al.*, 2013).

² A fuller account of the research strategy can be found in the Work Package reports on each phase of the research (Bitusikova, 2013; Canibano *et al.*, 2013; Gustafsson and Hansen, 2013; Kupiszewska *et al.*, 2013)

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PROJECT IDENTITY

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WEBSITE	http://www.salford.ac.uk/nmsw/research/research-projects/pocarim-home
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FURTHER READING	Ackers, H.L. (2013) Mobility, Co-presence and Purpose: Contextualising Internationalisation in Research Careers, <i>Sociology and Technoscience</i> , Vol 2, No 3, Special Issue ‘Women in Movement’. Ackers, H.L. (2013) From ‘Partial Migrations’ to Mundane Transnationalism: Socio-legal (Re)conceptualisations of Contemporary Intra-EU migration, in FMW – Online Journal on Free Movement of Workers within the European Union, pp. 7-20. Available here Ackers, H.L. and Coey, C. (2013) Accessing Doctoral Training, in <i>Doctoral Education Bulletin</i> , Autumn 2013 Reale E., (2013) National projects on SSH. Final Report of the project METRIS-Monitoring European Trends in Social Sciences and Humanities, CNR, Consultation on the role of SSH in Horizon 2020, Rome, 7 June 2013

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