Evidencing Impact: A Case Study of UK academic perspectives on evidencing research impact.

Author

Dr Clare Wilkinson

Associate Professor

Science Communication Unit

University of the West of England

Bristol

UK

BS16 1QY

0117 32 82146

Clare.Wilkinson@uwe.ac.uk

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Abstract

The principle that research should demonstrate impact is now a central driver in UK research policy, with some describing the UK as having undergone a 'culture change' in regards to evidencing the value and contribution of academic research (Watermeyer, 2012). This article takes a case study approach, examining one university faculty in depth in relation to research impact. Comprising an analysis of 18 Research Excellence Framework (REF) impact case studies submitted by the faculty in 2014, alongside a survey of 68 faculty staff and PhD students, and interviews with four research centre or group leaders, the case study explores the perceived benefits and challenges of evidencing research impact amongst a range of disciplines, as well as the 'transferable' skills which researchers utilise in evidence gathering.

Keywords

Impact, research, engagement, evidence, assessment.

Introduction

Over the last ten years there have been increasing efforts in the UK to better understand, document and evidence the journey from research to impact. Illustrated by efforts including the 2009 introduction of 'Pathways to Impact' by Research Councils UK (RCUK) (RCUK, 2015) and HEFCE's (Higher Education Funding Council for England) decision to include 'impact' in the UK's main research assessment exercise, REF from 2014 (HEFCE, 2016), there has been an increasing focus on research's role in effect, change and benefit. This shared agenda was summarised in a joint statement from HEFCE, RCUK and UUK (Universities UK) in 2011:

> ‘We are committed to working together to continue embedding throughout the research base a culture in which excellent research departments consistently engage with business, the public sector and civil society organisations, and are committed to carrying new ideas through to beneficial outcomes, across the full range of their academic activity… The responsibility for achieving these outcomes is shared by both the funders of research and the higher education institutions where the research takes place.’

Thus from the first stage of the research process (funding application), through its duration (the university context), to completion (research assessment), impact is now firmly on the UK research policy agenda, and both efforts encapsulate a financial incentive for the elaboration of impact (Clarke, 2015).

UK higher education is not alone in this interest with impact; it is also being discussed at the European level as well as amongst funders and research policymakers in countries such as Australia and the United States (Marcella, Lockerbie and Bloice, 2016; Chowdhury, Koya and Philipson, 2016) but the UK is one of the few locations which has now experienced a national assessment of the relationship between research and its impact. Like many globalising educational developments; increased privatisation, the commodification of knowledge, advancing of audit, ranking and assessment cultures (Seddon, Orza and Levin, 2013; Amsler, 2013; Nygaard, 2017; Watermayer and Hedgecoe, 2016) which are altering academics professional capital, it is expected that consideration of impact will appear in other educational assessment and audit models around the world.

The influence of this agenda is worthy of exploration; it is bringing renewed emphasis to ways that researchers might work across disciplines, as well as communicate to non-academics and organisations (Bastow, Dunleavy and Tinkler, 2014), and providing credence

for activities that may otherwise be overlooked. Public engagement, for example, previously viewed as 'frivolous, faddish and tokenistic' in some university contexts (Watermeyer, 2012:115) now has the potential to contribute to societal and community impact. But there is a hesitation that drives for evidence may create a neo-liberal monitoring of 'impact' and that certain subjects will have advantages in demonstrating impacts (Ovseiko et al., 2012; Parker and Van Teijlingen, 2012; Hughes and Kitson, 2012). Impact accountability may further 'territorialize' and 'commodify' academics social and political practices and boundaries, 'life beyond university, is now part of the professional work for which they are contracted' (Clarke, 2015: 113) with universities seen to play a role in every aspect of public policy and in all sectors (Watson, 2013). Concerns have been expressed as to how impact is defined, or can be assessed, as well the budgetary implications to institutions in supporting and capturing impact (Watermeyer and Hedgecoe, 2016; Manville et al., 2015; Morton, 2015; Khazragui and Hudson, 2015; Hobolt, 2015; Watermeyer, 2012; Parker and Van Teijlingen, 2012; Ovseiko et al., 2012). The evidencing of impact was recently identified as one of the largest challenges in preparing impact case studies amongst institutions, case study authors and users of research involved in REF 2014 (Manville et al., 2015), effectively requiring universities to strategise 'in practice' (Sminia, 2016) as definitions, boundaries and assessment outcomes were yet to be set in stone. Watermeyer and Hedgecoe (2016:655) describe some actions, pre-REF, as a kind of 'second guessing' where much understanding as to what might be included in a high scoring impact case study was still embryonic.

It may be assumed however that universities, home to a variety of types of researcher, gathering different types of evidence, are well equipped to capture impact, and from an evaluation perspective, the question of measuring and assessing longer-term and more challenging impacts has been apparent for a number of years (Chowdhury, Koya and Philipson, 2016; Hobolt, 2015; Morton, 2015; Hoggarth and Comfort, 2010; Scott, 2003;

Falk, 2000). Across disciplines researchers have been criticised for relying on the types of outcomes (whether short or long-term) which are most straightforward to map, neglecting indicators of broader social, environmental and cultural impacts or the 'serendipitous' nature of some research impact (Watermeyer, 2012). There is also an underpinning assumption that impact calls for 'change' be it behaviour, learning, attitude or awareness, which can be particularly challenging to evidence (Rossi, Freeman and Lipsey, 1999; Kushner, 2000) and may neglect the multiple 'contributions' which can play a role in generating impact (Morton, 2015). Whilst many universities house evaluation expertise, researchers will have their own perspectives on whether they would like their expertise applied to an impact agenda. In summary, the existence of expertise may not necessarily mean it is suited to articulating research impact nor that academics are prepared to strategically approach it (Watermeyer, 2014).

Bodies involved in these changes have acknowledged difficulties (HEFCE, Vertigo Ventures and Digital Science, 2016). In a recent RCUK (2015) review of Pathways to Impact, a series of recommendations were made including that guidance around their creation should be simplified and that the scoring of Pathways to Impact should be more transparent. It also advised 'that more needs to be done to build the sector's capacity and expertise in both enabling and generating impact' (RCUK, 2015:3). However culture change takes time and researchers face practical issues here and now, which require solutions to be found in regard to how to best evidence and evaluate the impact of their research. And whilst there have been well documented fears regarding impact and what it might mean (Watermeyer, 2012), as well as reflective analysis of current practices (RCUK, 2015), there are currently few studies that have captured the reactions of academic researchers post process (Marcella, Lockerbie and Bloice, 2016; Manville et al., 2015).

This research uses the CCP framework of organisational change (Pettigrew, 1987; Sminia, 2016) to examine the context of impact within one higher education organisation. In doing so it recognises that decision making within organisations is not always rational, it involves people, cooperation and social structures, and is therefore a constructed social-political process which can be complex, uncertain, conflicted and responsive to a number of peoples' demands (Sminia, 2016; Collins, 1998; Trowler, 1998), and where leadership forms only one of many ingredients (Pettigrew, 1987). The CCP model or 'triangle' focuses on content, context (both outer and inner) and process to investigate strategic changes within organisations over time (Sminia, 2016). The case study was orientated around three key research questions:

1) How was impact evidenced in the 2014 impact case studies presented by the faculty?
2) What do researchers perceive to be the benefits of evidencing research impact, as well as the challenges?
3) What are the disciplinary variations in how research impact is conceived and demonstrated?

These questions are then considered with regards to their relationships to CCP.

Methodology

This research examined one university faculty in depth in relation to research impact. It adopts Pettigrew's contextualist methodology, taking a case study approach and combining quantitative survey data with qualitative insight (Sminia, 2016). The faculty in question is based at a large UK university, UWE Bristol, home to approximately 27,000 students and 3,000 staff. The university offers over 600 courses and has four faculties. In the 2014 REF the university submitted to 17 UoA, including 323 staff (17% of whom were early career researchers). 57% of the research submitted was deemed to be world leading or

internationally excellent, and 75% of the research submitted was highly rated for impact. This case study focussed on a relatively large faculty, housing four departments and seven research centres or groups, it also contains a broad mixture of disciplines with coverage of science, social science and health.

The case study incorporated three methods. Firstly, a content analysis of the 18 submitted 2014 impact case studies occurred. One researcher coded the information presented within the case studies to examine and identify key themes regarding the types of evidence presented, the types of impact recorded and who was identified as being reached. A challenge in this process was the varying structures of case studies, as noted in previous analysis (Kings College London and Digital Science, 2015), and so the coding process assisted in standardising the information presented. Next a series of semi-structured interviews occurred with research centre or group directors in November 2015. All faculty research centre or group leaders were invited to participate in an interview and four out of seven agreed to do so. The interview questions covered topics including their area of research, how to capture research impact evidence, research centre strategies, and internal and external resources they had access to. The interview data were analysed thematically, with a series of codes drawn from the data itself. Finally, an electronic survey, in part informed by the semi-structured interviews, was distributed to all faculty staff and PhD students in January 2016. The survey included questions based on previous work (Manville et al., 2015), as well as a series of additional prompts or options tailored to the specific university context. The questionnaire covered topics including their research career, attitudes towards research impact, perspectives on evidencing impact, as well as support and training needs. Following the interviews, links to offer definitions of impact were added and some additional support options were also added. Statistical analysis was carried out using Pearson Chi-Square, with the Likelyhood

Ratio and Fishers Exact Test used when appropriate to cell size. An alpha level of .05 was used for all statistical tests.

The first request to complete the questionnaire was sent by the Associate Dean for Research and Innovation to encourage uptake, with a further reminder sent after two weeks by the investigator. PhD students were contacted via the Graduate School. Although PhD students are not currently included directly in REF case studies and are unlikely to author sections on impact within research applications until after their PhD, they were included to provide insights on the 'next generation' of early career researchers. To avoid neglecting those who may be carrying out research in a role associated primarily with teaching or management, the invitation to participate was sent to all staff distribution lists, so that any staff or PhD student could self-select to participate. Prior research has highlighted the need to extend research on the influence of impact assessment beyond senior researchers or those included in REF (Marcella, Lockerbie and Bloice, 2016) for fear of marginalising some researchers and creating an 'impact gap' (Watermeyer, 2014:371). 68 people completed the electronic questionnaire, a response rate of approximately 20% on the basis of the number of staff associated with a research centre and/or a current PhD student within the faculty. It should be noted that as some staff are associated with multiple research groups, the response rate may be slightly higher than implied by this percentage. However the response to the survey was still modest. Ethics approval for the research was granted by the University Research Ethics Committee.

< Table 1 about here >

68 people responded to the questionnaire, comprising individuals at all stages of their research careers as shown in Table 1. Though there was a spread of researchers from research centres and groupings, a high proportion came from the health and clinical research (n=26),

or public health and wellbeing (n=12) fields. There was a relatively even split between respondents that were new to the university (under five years) and those that had been working there for some time (over six years).

The respondents had differing levels of expertise in regard to their experience of 'impact'. The majority of respondents (n=51) had received no training, coaching or mentoring on how to prepare RCUK Pathways to Impact or REF Impact case studies. Those that had, tended to be early to mid-career, with almost a third of Research Associate/Fellows and Lecturers indicating they had received support of this nature, compared to a fifth of Associate Professors/Professors. Only five respondents had written a Pathway to Impact previously (all Senior Lecturers/Research Fellows, Associate Professors/Professors or Research Leaders), and six (one Research Fellow and the remainder senior academic staff) had authored a REF Impact case study though around a fifth (n=13) had contributed to them. It is worth commenting that eight respondents did not know whether their work had contributed to either, and these individuals were at a variety of career stages. Four Research Centre or Group Directors agreed to be interviewed, representing a range of subject areas including the social sciences, science and psychology.

Results

A review of the impact case studies submitted by the faculty to REF 2014 presented a mixed picture of the evidence and impacts that were articulated. 18 impact case studies were submitted, to seven separate Units of Assessment (including Allied Health Professions and Nursing, Agriculture, Veterinary and Food Science, General Engineering, Politics and International Studies, Social Work and Social Policy, Philosophy, and Communication, Cultural and Media Studies). In total, the university submitted to 17 UoA in the 2014 REF, and these case studies represent approximately 40% of the impact case studies reported by the

University. It is important to note that a number of case studies also represented colleagues in other faculties, indeed 'impact ownership' has previously been flagged as problematic in such accounts (Watermeyer, 2014). Also, the case studies do not represent all impact generated by the faculty; a limited number are submitted for assessment and they are necessarily focussed on certain areas and research groupings (Kelly et al., 2016; Manville et al., 2015; Hobolt, 2015; Ovseiko et al., 2012).

A broad range of impacts were reported across the case studies, reflecting the differing nature of the related research. 10 case studies reported an influence on policy (including policy reports, guidelines or materials), 10 case studies reported an influence on specific information and advice (for instance information leaflets, online materials, or toolkits), and a further 10 case studies reported some kind of influence on the research field (for example influence on research agendas, approaches and clinical trial procedures). Nine of the case studies discussed implications in the context of healthcare specifically, such as impacts on patient interventions, protocols or standards of care.

Despite the varying disciplinary perspectives, the 18 case studies had testimonials in common. These were by far the most common type of evidence and were used widely, including supporting statements from individuals and organisations comprising policymakers, NGOs, industry, service users, healthcare professionals, educators and event attendees. Evidence such as websites (n=9), policy influence (n=9) and evaluations (n=8) were also common, whilst examples from the media, citation in government reports or other documents, meeting minutes, products and spin-out companies were also cited amongst smaller numbers of case studies. Unsurprisingly, the types of people reached varied amongst the case studies presented to different UoAs. For example Allied Health Professions and Nursing commonly reported impacts on health and social care professionals (five out of six case studies) and patients or service users (five out of six case studies), whilst those presented

in Politics and International Studies (two out of two case studies), as well as Social Work and Social Policy (three out of three case studies), most frequently reported impacts on policymakers.

It was notable that around 40% (n=7) of the case studies presented evidence they had gathered in the course of their research. In such examples, the case study authors had used information from evaluations, studies, audits and intervention trials as evidence of the impact their research was having on its users.

The survey data presents a generally high level of support for the impact agenda at the macro level with the majority of respondents (n=57) agreeing that it is important for research to generate impact (Table 2), though there are mixed views as to whether this has been influenced by the agendas of research councils and research assessment. There was no statistically significant variations in views depending on a researchers discipline area and their attitudes towards the importance of impact, whether it should be left to researchers to decide to generate impact in their research, or increases in consideration due to pathways to impact and/or REF. Similarly there was no disciplinary differences in regards to confidence in understanding what impact means or how to evidence it, though there was a statistically significant difference ($X2$ (2, N = 67) = 7.44, p =.024) when researchers had authored a REF case study before, with authors more likely to agree that they were confident in how to evidence impact. In regards to career stage, three questions showed a statistically significant difference. Responses to requirements to create Pathways to Impact ($X2$ (2, N = 67) = 11.6, p =.003) and changes to the Research Excellence Framework ($X2$ (2, N = 67) = 12.0, p =.002) showed variation, with senior researchers far more likely to say that these agendas had influenced, whilst they were also likely to be slightly more confident in terms of how to evidence impact and whether researchers should be left to decide ($X2$ (1, N = 68) = 10.7, p =.005).

< Table 2 about here >

Over 80% of respondents agreed or strongly agreed that the need to evidence impact embeds impact from early project stages (n=53) and that evidencing impact broadens the types of research impact captured (n=56), beyond academic impact. 48 survey respondents agreed or strongly agreed that impact reflects and affirms relationships with research users, encourages collaboration with other organisations and stakeholders (n=52), as well as inter, cross and trans disciplinary research (n=40). Though very few respondents (n=4) felt there were no foreseeable benefits in regards to evidencing impact, a number of staff stated that there could be an 'over emphasis on impact' which could be detrimental to fundamental science, and long-term impact (Respondent 312) and that 'research with no immediate impact' still needs to be supported (Respondent 778).

However at the micro level of the individual university, the context of research impact meant impact was now seen to be on the university's agenda (n=49) and there was a better understanding of what research impact means (n=46), whilst impact evidence could also have a role for advocacy and marketing (n=41). A coordinating question asked whether there was the 'potential to favour research with "best" evidence, rather than representative of all impact' (Table 3). Here, over half of (n=37) respondents agreed or strongly agreed. However there was also a greater tension in terms of the role between research and impact expressed in a number of comments: 'this really misses the whole point - research should naturally generate impact, whilst impact policies/strategies etc. should not direct research' (Respondent 279) and 'it is not just about evidencing impact but creating it in the first place. We need to develop the skills for this as well' (Respondent 451). There were also a small number of comments suggesting the personal relevance of impact, regardless of its appropriateness, may not be clear; 'if I am not in the REF, I'm not sure how important it is that I evidence the work that I do for [the university]'.

< Table 3 about here >

Regarding disciplinary areas, over half of respondents (n=41) indicated that their research area links well to impact as it is applied. There was a statistically significant variation in responses to this question by discipline area ($X2$ (2, N = 65) = 6.87, p =.032), with those working in the arts, humanities, economic and social sciences more likely to strongly agree or agree that there are of work was applied. Similarly, those working in the arts, humanities, economic and social sciences were also slightly more likely to agree that the impact agenda may encourage better record keeping ($X2$ (2, N = 65) = 9.25, p =.010).

Within the interviews, individuals were easily able to identify how their research interests could link to impact despite the difficulty of evidence:

> 'We believe that our strength is applied research and we have, I think, a huge advantage…we worked on it, the close links with stakeholders, industry, government organisations, the NHS.' (Research Centre Director, Biosciences)

> 'Social policy is really difficult to pin down impact statements for…was it used in a White Paper? Were you referenced? Did someone quote you in a speech? Did you give a talk at the Houses of Parliament? So how do you construct impact on that and that's quite difficult to do… So I think there's still a lot of conversation to have around this, I don't think people know what to record, how to record it, especially when you go into a problematic UoA where actually it's challenging to define impact in social policy.' (Research Group Director, Social Sciences)

There are certain disciplines where links to impact may be less straightforward or obvious to evidence, and three quarters of respondents (n=48) agreed or strongly agreed that it was harder to evidence certain types of research impact (such as policy informing or confidential sales data). The small numbers of researchers who disagreed with this statement came from

the medical fields. When asked if evidencing impact 'undermines "blue skies" or basic research', 37 respondents agreed or strongly agreed, whilst most also (n=46) agreed or strongly agreed that evidencing impact can suggest a linear relationship between research and impact.

Despite the high levels of agreement around the value of impact, it was anticipated that it presents challenges for researchers, with high levels of agreement that the definition of impact, and more so, the time period provided for it are challenges. There was a statistically significant difference amongst research disciplines vis-à-vis the definition of impact ($X2$ (2, N = 63) = 8.11, p =.017) with those based in the sciences and medical fields less likely to agree that this was a challenge. Many respondents (n=49) were uncertain as to how impact is judged and weighted, and this was common across all career stages; from PhD students, to Senior Lecturer/Research Fellows and Associate Professor/Professors. There were high levels of agreement (n=49) that there is difficulty in evidencing impact, though there was less concern as to how it could be linked back to original research (n=31). With regards to both of these statements there were differences based on previous experience. Those who had authored a REF case study before demonstrated a statistically significant difference ($X2$ (2, N = 64) = 7.52, p =.023) in response to their agreement with the difficulty in evidencing impact, with authors more likely to disagree or strongly disagree that this was a challenge. Whilst authors of Pathways to Impact ($X2$ (2, N = 64) = 7.70, p =.021) were more likely to agree that it was difficult to link back to original research, and this was reiterated amongst some interviewee comments:

> 'I think our research is very impactful anyway, but for us the challenge is the evidence of it and sometimes things happen which… it's not necessarily linked to a particular piece of research here… you couldn't say well that is in there because of that specific

study that we did. You're on that because of your experience and reputation for that area generally.' (Research Centre Co-Director, Appearance Research).

Over half of respondents (n=36) agreed or strongly agreed that there were challenges in knowing when to collect evidence of impact; at the time or retrospectively. There were also high levels of agreement that this could imply costs; to individual researchers (n=49) (such as time), and to a lesser degree the institution (n=38) and to external groups and organisations (n=36). Over each of these three statements there was a statistically significant difference amongst career stages, with senior career researchers more likely to strongly agree or agree that there were costs over each of the three groups. Not a single respondent agreed that there were no challenges in evidencing research impact. Additional comments suggested concerns regarding 'overcentralised' and 'bureaucratised' processes, whilst at the same time others commented that 'researchers do not necessarily have the appropriate skills and expertise to drive or evidence impact' (Respondent 451) and 'it is draining a vast amount of time and other resources, and thus detracting from getting on with research' (Respondent 312).

Whilst respondents were then generally supportive of efforts to evidence impact, there are also clearly burdens which might be supported in Figure 1 and a Fishers Exact Test performed on these results showed no significant variations by discipline areas. This was also the case regarding stage of career, with the exception of responses to having an 'improved understanding of impact' whereby early to mid-career researchers were more likely to agree *(P = 0.27, Fisher's exact test)*.

< Figure 1 about here >

There were very high levels of support for the allocation of resources to support research impact (such as staff workload, and funding for impact activities), access to materials such as impact evidence examples and exemplar impact case studies. Increased information on what

evidence to collect was also seen to be helpful, over all career stages and echoed by the interviewees despite impact becoming more embedded in the groups' research 'culture':

> 'Maybe to explain to them [researchers] one more time what impact is in terms of the REF, because we have been explaining this constantly and also what kind of evidence can be viewed as impact, because some researchers are not quite clear about this …and maybe who can assist with collecting this particular evidence.' (Research Centre Director, Biosciences)

In general, most other support options were also seen to be useful, however there were a few categories that were slightly less popular. This included a number of 'systems' which may be seen to centralise impact, including a system to record research impact and impact peer review processes, as well as impact support groups. It is possible that people are wary of additional processes, with further implications for researchers time, though there was more support for the involvement of dedicated staff to assist in the collection and verifying of evidence. It is also possible that the intricacies of research contexts are lost by such mechanisms, as this interviewee alluded to in a commercially sensitive environment:

> 'All of our researchers are members of academic staff... they engage in hundreds of other activities… So we need some practical assistance to capture this information and present it in a certain way, researchers will not be doing it and they don't know how to do it… Now the challenge is some of our research is commercially sensitive so we cannot put it in an open repository or somewhere else in the public domain.' (Research Centre Director, Biosciences)

Questionnaire respondents also raised similar tensions, for instance respondent (282) stated 'A lot of impact in our area relies on close working relationships and building trust. Having an "outsider" requesting data for you is likely to be less fruitful'. Whilst others felt additional

support mechanisms are warranted: ‘definitely we need dedicated support for the collection and analysis of evidence as this is usually generated out of our own time’ (Respondent 931) and ‘assessing impact is a research project in itself’ (Respondent 149).

Finally, the questionnaire asked respondents if their own research area was in any way advantageous in evidencing research impact. A high number of comments indicated that people did not understand this question, though 30 researchers indicated ‘Yes’, 23 were ‘not sure’. Anticipating that this might be a complex point for respondents, there was a chance to elaborate with comments. Some commented that the skills required did not have a relationship to their research, that they would be confident in data collection but not analysis, or could not separate themselves from their research and its impact; ‘I find it very difficult to evaluate the impact of research that I am involved in... I do not feel that I am the best person to do it’ (Respondent 778). Others however could see a relationship; as their research area was very applied, because they were involved in action research, or that they had previous evaluation experience which they could in some ways transfer. However some still expressed difficulties in knowing how to translate this to the research and impact evidencing process, as summed up by this PhD student: ‘I have experience of collecting qual/quant info but would be unclear about how I would go about this with regards my current role and project (and when would be best time to do this in my PhD journey)’ (Respondent 404). This point also arose in one of the interviews, whereby the leader of the Social Science research group discussed competing academic pressures:

> ‘We’re empiricists, we are social scientists, so actually understanding the role and function of it [research] is important and we do a lot of evaluation work. So the group is equipped to research this and understand it. I do genuinely think that impact isn’t very well understood because the academic journey is a bit of a falsehood... you get a job where it’s like you have to work as a member of a team, research is important but

> you need to teach, publications are important but actually how are you doing engagement outside of that, oh well impact's important but we don't mean impact in terms of journal citations and we don't mean impact in terms of quality of journal we mean public impact, what do you mean you don't know what we are talking about? So we've never really geared people up for this.' (Research Group Director, Social Sciences)

Thus whilst this question would benefit from some re-phrasing, respondents appear to be identifying their research and its impact as quite distinct phases.

Conclusion

Before turning to the conclusions of this research it is important to highlight weaknesses in the data that was collected. In the spirit of Pettigrew's organisational research this data can only be treated as a starting point for reflexivity and consideration, from one point in time and does not offer 'universal truths' (Sminia, 2016). It would be beneficial to compare this data with other university settings and/or over a longitudinal period. This research was based in a university that has a number of interventions in place (for instance supporting 'impact lunches', resourcing impact activities, training workshops, discussing impact in official strategies and documentation, and having impact champions within the faculty) and it would therefore be fruitful to compare responses to this set of questions with other university contexts. The numbers of interviews carried out, and survey respondents, could also be helpfully extended to improve the qualitative analysis, and statistical power of the data.

However, the results presented in this case study paint a complex and, to some degree, messy picture of the various content, contextual and process related factors which have come to influence researchers' perspectives on research impact at one point in time (see Figure 2). Alongside a significant desire to value and achieve impact amongst researchers in this case

study, there is the underlying sense that processes to articulate and evidence impact remain challenging.

< Insert Figure 2 about here >

In regards to research question one, as to how impact was evidenced in the 2014 case studies presented by the faculty, the *content* of the impact cases studies demonstrated multiple impacts and evidence emerging from a single faculty's REF 2014 case studies, including on healthcare interventions, policy and research practice. An equally wide range of stakeholders and users were also reached. This supports evidence that data presented in case studies can be diverse (Kings College London and Digital Science, 2015; Khazragui and Hudson, 2015). Researchers clearly felt confident in utilising testimonials, despite the fact that the questionnaires and interviews suggested when and how to obtain testimonials could pose challenges, and smaller numbers used evidence from research or evaluation itself. Evidence from public engagement and media coverage was significantly less obvious than might be expected at a university which is well versed in public engagement (Watermeyer, 2012). This might be a consequence of the case study selection, but it is also possible that it is more difficult to map impact from public engagement or was seen to be more 'risky' to include (Watermeyer and Hedgecoe, 2016; Kings College London and Digital Science, 2015; Manville et al., 2015), therefore more commonly forming 'a road to impact' (Watermeyer, 2012:118; HEFCE, Vertigo Ventures and Digital Science, 2016; Manville et al., 2015) rather than a destination. The data collected here would certainly support an argument that for the time being at least, it will be challenging to standardise impact evidence further as this would neglect the distinctions that a researchers' narrative provides (Kings College London and Digital Science, 2015), and potentially disrupt the networks which they mobilise (Morton, 2015).

As to research question two, and what researchers perceive to be the benefits of evidencing research impact, as well as the challenges, a wide range of issues were highlighted many of which related to the outer and inner *context* infringing on research impact evidencing, as well as the *process* and procedural aspects determining its collection. Despite the challenges of evidencing impact, it was seen to raise the profile of individuals, groups of researchers and the university, and to encourage collaboration with external parties. It offers a good fit to many areas of past, ongoing and future research that the faculty is involved in, and there was a wealth of examples of applied research that participants drew on. However there remains a wariness, regardless of whether one's own research area is applied, that it may in some ways curtail the unexpected or conflict with academic integrity (Chubb and Watermeyer, 2016; Hobolt, 2015; Watermeyer, 2014). It is possible that such comments come more to the fore as universities increase their knowledge, systems and expectations around impact (especially so if impact comes to represent an increased percentage within the next REF) which, without careful consideration, may distort its relationship to research overall. One interviewee summed this up in relation to the context of REF impact:

> It struck me in conversation yesterday that there has been so much talk about impact that sometimes they [researchers] have actually got the message that impact is important but we have to remind them that the REF isn't only about impact, you've still got to get the good papers out first. (Research Centre Co-Director, Appearance Research)

Other concerns regarding impact relate to the time period for evidencing it, the 'impact window' (Manville et al., 2015; Morton, 2015; Kings College London and Digital Science, 2015), and it is possible that this is becoming more complex in regards to REF as impact case studies are being prepared for a second time. Likewise in relation to Pathways to Impact, people are now likely to have multiple projects which require the tracking of impact. Time is

of course a considerable concern, and whilst researchers (depending on their career stage) did not appear unduly worried about the time commitment of others (for instance stakeholders contributing evidence), they did express difficulties in how best to elicit this sort of data. There were high levels of agreement that evidencing impact poses burdens (Manville et al., 2015), as well as a lack of transparency regarding how it is judged and weighted, echoing previous work in the field (Chubb and Watermeyer, 2016; RCUK, 2015; Manville et al., 2015). Themes which have been noted in recent research, including the propensity to sensationalise, over-claim or create 'falsehoods' around impact (Chubb and Watermeyer, 2016) did not arise in this data but nor was it specifically probed in the research design.

It was noticeable that the support most popularly requested included resources, exemplar materials and advice on evidence versus those of a more bureaucratic nature. Steps are already being taken to make previous impact case studies searchable and useable (HEFCE, Vertigo Ventures and Digital Science, 2016; Kings College London and Digital Science, 2015), but concern regarding the introduction of systems and processes may reflect a broader wariness amongst the research community that the measurement of impact symbolises a 'performance and audit culture' driving short-term impacts at the cost of richer, nuanced illustrations of influence (Watermeyer, 2012:126; Chubb and Watermeyer, 2016).

Finally, in terms of research question three, and the disciplinary variations in how research impact is conceived and demonstrated, many of the expectations and challenges regarding impact were shared across disciplines which suggests, whilst there are disciplinary nuances (Digital Science, 2016), much can be shared and learnt by and amongst researchers in different settings regarding impact best practice and its evidencing. In some cases, however there were small differences, around how applied a subject area was perceived to be and how it might affect practices like record keeping. Some recent evidence has suggested there may be differences in how factors (such as income, number of researchers included, evidence

included) contributed to impact scores across case studies submitted by different disciplines (Chowdhury, Koya and Philipson, 2016) which suggests this point is worthy of continued research.

Though many researchers might identify 'transferable' skills which they could utilise to evidence research, they rarely had the time, desire or sense of objectivity to apply such skills to their own research impact. Previous research has suggested intermediaries or 'impact officers' are most effective when close working relationships are cultivated, thereby deepening knowledge amongst both parties (Manville et al., 2015) and that academics alone cannot be responsible for research impact as 'the distribution and use of knowledge would be top-down and autocratic' (Watermeyer, 2012:120). This case study also contributes to such recommendations. Whilst there is a desirability for outside assistance to collate impact evidence, the necessities of having an insider's perspective and knowledge requires sustained relationships to be established between researchers and those in any type of supporting role. This complexity reflects the conjoined, complex and muddled relationship to impact which much research continues to have (Parker and Van Teijlingen, 2012) and thus whilst this broad and diverse faculty has its commonalities in regards to the opportunities, insights and challenges that research impact presents, protecting and respecting disciplinary differences also remains important.

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