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Societal Impact of Research

The Special Case of the Social Sciences and Humanities

Table of Contents

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1. Introduction

1.1. Why study societal impact?

The aim to quantify, rank, weight, legitimize and document the 'usefulness' of university knowledge production and science has been on the rise in recent years (Albert, 2003; Bulaitis, 2017; Spaapen & van Drooge, 2011, 2011). Today, this aim is institutionally embedded in the policies and practices of many research and funding institutions, and different forms of impact assessment and expectations have a strong grip on research. The measurement of the impact of research refers to the assessment of many aspects of scientific work which can roughly be divided into two categories: Internal – often referred to as academic or scientific – impact refers to the intellectual contribution to the scientific field within academia, i.e., the form of impact that influences future research or breaks dominant paradigms (Reale et al., 2018, p. 299) and is often measured using citation counts, journal rankings and research productivity (Bornmann, 2013, p. 217). However, researchers and research institutions must not only to account for their scientific production and its academic impact: increasingly, they must also consider how their research 'lives outside academia' (Bornmann et al., 2019; Ravenscroft et al., 2017). This form of impact, the external or societal impact, refers to the broader economic, social and political impact outside the world of academia (Penfield et al., 2014, p. 21; Reale et al., 2018, pp. 299–300). In this report we focus on the external societal impact. In addition, we put special focus on the case of the social sciences and humanities, in line with the profile of the ERUA partner universities. We address three dimensions of societal impact measure of research and science - the why, the how and the consequences of societal impact measures - to provide a thorough overview of the phenomenon of societal impact, specifically in the social sciences and humanities. We conclude the report with a discussion of what the findings entail for reform-type universities. Finally, we discuss them in relation to the mission of enabling research that aligns with the mission and values of the ERUA initiative.

1.2. The relevance of impact measurement to ERUA

The notion of impact is crucial to the core values of the ERUA universities: Cooperation with external actors, focus on enabling positive social change as well as providing optimal

conditions for critical thinking and an emphasis on broader societal impact lie at the heart of the project. As universities strong in social sciences and humanities, we ought to be extra aware of the political and practical movements and directions of policies in terms of societal impact, as the literature suggests that disciplines within these fields might be extra vulnerable to the consequences of difficulties in measuring societal impact which we will emphasize in the review of the literature. As we will show, difficulties measuring or capturing external impact often result in a perceived lack thereof.

1.3. Cases of societal impact measurement and use

In this section, we present three cases of the use of societal impact measures to evaluate and inform various aspects of research and university life. Although we only present a few cases, there are many examples of these types of systems in place not presented here.

1.3.1. The international level – EU Framework Programme

At the international, European level, impact has been worked into the EU research funding programmes in various ways. The current EU funding programme, Horizon Europe, which comprise € 95,5 billion in research funds, not only implements perceived or expected impact explicitly as one of three central factors (excellence, impact, implementation) on which the assessment of applications for funds is based on (European Commission, 2022), the programme is specifically anchored in various societal challenges such as climate chance, and the facilitation and strengthening of impact and collaboration in research is emphasized as a key element: The programme ought to ‘create jobs, fully engage the EU’s talent pool, boost economic growth, promote industrial competitiveness and optimise investment impact’ (European Commission, n.d.) Thus, impact is manifested not only in the concrete funding mechanism and selection of projects to funds; it is also articulated as the underlying principle of the programme.

1.3.2. The national level – Research Excellence Framework (REF)

In several countries, the measurement of impact has manifested itself in various forms of funding and evaluation structures. Examples include the Australian Excellence in Research for Australia initiative, New Zealand’s Performance-Based Research Fund, and the Netherland’s Dutch Research Agenda.

However, a large share of the literature on societal impact measures centres around the British 'Research Excellence Framework' which is perhaps an exemplary case of the ways in which researcher are measured on the basis of the impact that they and their research has on society (Benneworth et al., 2022, p. 46). The REF is a continuation of the preceding model, the Research Evaluation Exercise, which was implemented in 1986, and thus, the system was perhaps the first to implement societal impact as a key point in research assessment.

The REF is a national evaluation of research in UK universities taking place approximately every fifth years. The overarching aims are to provide accountability for public investments in research, to provide benchmarking information and to 'inform the selective allocation of funding for research' (Higher Funding Council of England, n.d.). The evaluation is carried out by means of expert reviews made up of subject based units of assessments. Three elements are assessed: Output (publications), impact beyond academia and the environment that fosters research. 20 % of the total score of research is based on the external impact (Bonaccorsi et al., 2021, p. 1). In the REF, the unit of assessment is departments or research groups at universities.

1.3.3. Times Higher Education Impact Rankings

Various forms of university rankings do not necessarily have a direct national institutional effect on allocations of funds as such, but they have been shown to have widespread consequences in terms of the behaviour of prospective students and staff as well as funders (Dill & Soo, 2005; Hazelkorn, 2011; Marginson & van der Wende, 2007; Saisana et al., 2011), and it has even been argued that they completely reconstitute the purpose of university (Lynch, 2015). In perhaps the most well-known university ranking, the Times Higher Education (THE) World University Rankings, societal impact is marginally implemented in the indicator, with 'technology transfer' making up a total of 2,5 % of rankings. However, THE has also produced a ranking that has societal impact as its' explicit focus: the so called 'Impact Rankings'[1], which globally ranks 1406 universities on the basis of how the live up to the UN Sustainable Development Goals (SDG's) based on their 'research, stewardship, outreach and teaching' (Times Higher Education, 2022). The desire and effort to rank

[1] See https://www.timeshighereducation.com/impactrankings.

universities based on their impact on society showcases the increasing awareness of the role of impact and the changed contract of society that we have already mentioned.

2. Identification of literature

Initially, we defined an overall problem, based on which we carried out initial searches to map overall terms used in the literature. Based on these initial searches, we developed 3 primary keyword and 20 secondary keywords that were combined in various ways, resulting in 85 total search queries. We used the Scopus-database to conduct the searches. All searches yielded 71,440 results in total, of which 1,840 were unique. We manually assessed these results and selected sources for inclusion based on three selection criteria: 1) sources should, to some extent, focus on scientific production, i.e., not only on the role of universities as institutions, 2) sources should *not* exclusively focus on non-SSH scientific productions, i.e., not only on, for example, life or natural sciences, and finally, 3) sources should cover *external* impact measures, i.e., those that relate to societal, financial or policy implications. In total, this yielded 63 results. In addition, 42 sources were identified through snowballing and references in identified literature. These sources constituted the basis of our review.

3. Presentation of insights

3.1. Why is societal impact measured – political and institutional context

Before asking questions of *how* impact is measured and what the consequences are, it is fruitful to understand the political and institutional context that gave rise to these forms of measurements. At the heart of this question lies the notion of the changed 'contract' between science and society (Guston, 2000, p. 41; Lauronen, 2020): Earlier, in what is often referred to as the 'traditional contract of science', the economic and social impacts of science were considered to take place without any deliberate action on behalf of scientists (Esko & Tuunainen, 2019, p. 404). Thus, in many countries, science was largely autonomous to the extent that it was continuously focused on maintaining impactful and excellent research on its own terms (Bornmann & Haunschild, 2019, p. 611). However, in the context of broad political and institutional changes towards the increased entanglement of science and external actors – the political sphere, industry and civil society at large, this contract is being altered significantly (Esko & Tuunainen, 2019, p. 404). Additionally, this new form of

relationship between science and society also strongly relates to the increasing focus on reducing public spending (Bornmann & Haunschild, 2019, p. 611), and the underlying intention to define and measure the societal implications of science is that policy makers want to make sure that they use public funds to sustain 'good science' (Reale et al., 2018, p. 299). Now, increasingly scholars are expected to seek involvement with external partners in order to secure impact rather than taking for granted that the knowledge they produce will permeate in to society (Lauronen, 2020, p. 3), Neresini & Bucchi (2011, p. 64) point out that public engagement activities have now become routine in European research institutions. The move towards this 'new social contract' thus indicates a lack of 'automatic' trust in the economic and social benefits of science, giving rise to the demand to demonstrate an ability to convert results into marketable and consumable products (Bornmann, 2013; Sengupta & Ray, 2017). The perceived need to demonstrate external impact entails the need for appropriate measures to evaluate claims that scientific research actually ends up having an impact outside the world of academia (Reale et al., 2018, p. 305). But as we will show in this report, although there are increasing requirements for research institutions and individual researchers to be able to showcase potential or actual societal impact, the measurement of these aspect of science is extremely difficult, and particularly in the social sciences and humanities, it can prove almost impossible to map them.

3.2. How do social sciences and humanities have an impact?

Before proceeding to ask the question of *how* to measure societal impact, it is necessary to introduce how the social sciences and humanities make an impact outside the world of academia. In some STEM-disciplines, impact is often rather easy to measure, for example how many patients have used a specific form of medicine or how many firms have implemented a novel mechanical element because of scientific research, and often, it is clear who the end-users of research are (Bonaccorsi et al., 2021, p. 3). However, this is far from the case in the social sciences and humanities, where impact is often much more abstract in nature. Thus, different disciplines have different effects on society, and in the case of the social sciences and humanities, Reale et al. (2018, p. 299) point to the organizational and epistemic characteristics as well as the output type of SSH as central to what differentiates their impact from the STEM disciplines. Olmos-Peñuela, Benneworth, et al. (2014, p. 397) draw on a survey of researchers to examine the perceived difference between impact in SSH and STEM and find that the ways in which researchers in SSH disciplines produce impact is less formal than in STEM. In STEM, researchers often work directly with industry, whereas

SSH creates impact by, e.g., contributing to public debate, working with government and NGOs, etc.. Likewise, Severinson (2018, p. 5) suggests that SSH has an impact on three main societal aspects, namely, practice and policy, society and culture, and finally the economy. These types of impact are often indirect, with a focus on researchers participating in councils, as advisors or making media appearances as experts. Finally, the conceptualization of research use as a continuum put forward by Davies et al. (2007) shown in Figure 1 highlights that especially in SSH, research use is not merely instrumental but can also be much more conceptual in nature: An important aspect of the dissemination of SSH is that it also helps to raise awareness of specific subjects as well as other conceptual uses.

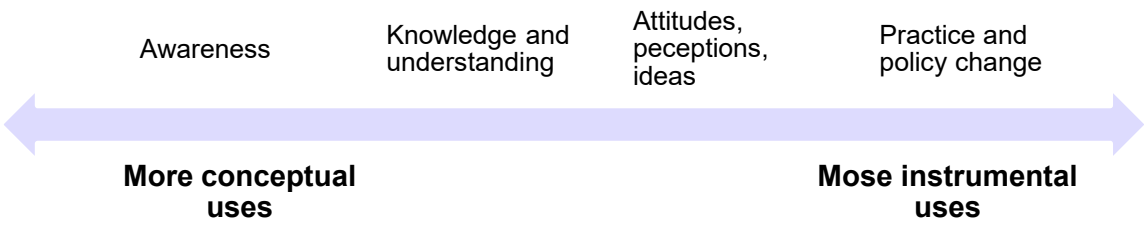

Figure 1: A continuum of research use (Davies et al., 2007, p. 51)

3.3. How are societal impact measurements different from other impact measurements?

As mentioned, the general trend towards a larger emphasis on impact measurements affects all branches of university research, and researchers are also increasingly expected to showcase the scholarly use of their research. However, we focus only on those impact measurements that address the external value of research, i.e., that which doesn't function on the terms and conditions of rigour contained within science itself. Despite the large institutional emphasis on and importance of societal impact, there is a lack of agreement as to how societal impact ought to be defined in the literature, and many studies completely refrain from defining societal impact. Thus, the literature is characterized by not only a lack of methodological but also theoretical consensus: however, in general the notion of societal

or social[2] refers to an array of issues comprising social, economic, health and legal aspects. The overall issue of societal impact goes by several different conceptualizations such as third-stream activities, productive interactions (Benneworth et al., 2022; De Jong et al., 2014; Kalliomäki et al., 2021), societal benefits (Cotos, 2019) and knowledge transfer (Coey, 2018; Olmos-Peñuela, Castro-Martínez, et al., 2014; Sengupta & Ray, 2017) which more or less refer to different models of assessing societal impact. Bornmann suggests a broad definition by pointing out that all conceptualizations of the notion of societal impact generally focus on 'social, cultural, environmental, and economic returns (impact and effects) from results (research output) or product (research outcome) of publicly funded research' (Bornmann, 2013, p. 218). It is worth noting that these aspects of impact are not strictly separate from each other and there is often considerable overlap – as pointed out by Bornmann, medical advances might both lead to an economic benefit in the form of a decrease in employee sick days; but also a social benefit in the form of improved quality of life (Bornmann, 2013, p. 218).

3.4. How is impact measured?

By now, we have established that the measurement of societal impact is complex and entails many methodological issues and considerations. This implies a high degree of methodological pluralism within the frameworks utilized for measurement because there is not yet consensus on how to measure the complex phenomena that constitute the societal impact of SSH (De Jong et al., 2014, p. 90). However, various frameworks are suggested in the literature. We will present some of these frameworks as well as overarching methodological considerations for measuring impact in general. A number of the frameworks presented in the literature originated as evaluation methods for the natural sciences and were subsequently adapted to fit SSH (Olmos-Peñuela, Castro-Martínez, et al., 2014, p. 697). In this part, we will present the key methodological differences and disagreements presented in the literature, which will provide an overview of the specific ways of measuring impact and their associated advantages and pitfalls. In addition, the most used methods will be presented.

[2] Societal and social are used as interchangeable by some, while others make a distinction (Reale et al., 2018, p. 300).

3.4.1. Methodological component

There are many different questions and choices involved in designing frameworks and approaches for measuring societal impact – *what* do we measure and *how* do we do it? In this section we offer an overview of methodological approaches found in the literature as well as the advantages and disadvantages of various methods.

Generally, there are many examples in the literature of trying to adopt or appropriate quantitative methods (Bonaccorsi et al., 2021; Pedersen et al., 2020), signalling an underlying preference for these types of methods to measure societal impact. This relates to the notion that quantitative methods are often considered more desirable in public research evaluation because they provide opportunities for various forms of benchmarking. Additionally, they are collected independently, and they are considered more transparent and verifiable (Donovan, 2007, p. 586). However, some question the ability to design an appropriate universal quantifiable measure due to the complex and intricate nature of the causality between research and its impact (Cherney & McGee, 2011, p. 157).

In contrast to the preference for quantitative methods, Pedersen et al. (2020) show in their literature review of approaches to impact measurement in SSH that qualitative methods are the most widely used methodological approaches. Figure 1 shows the share of documents on impact frameworks using various forms of methods as reported by Pedersen et al.

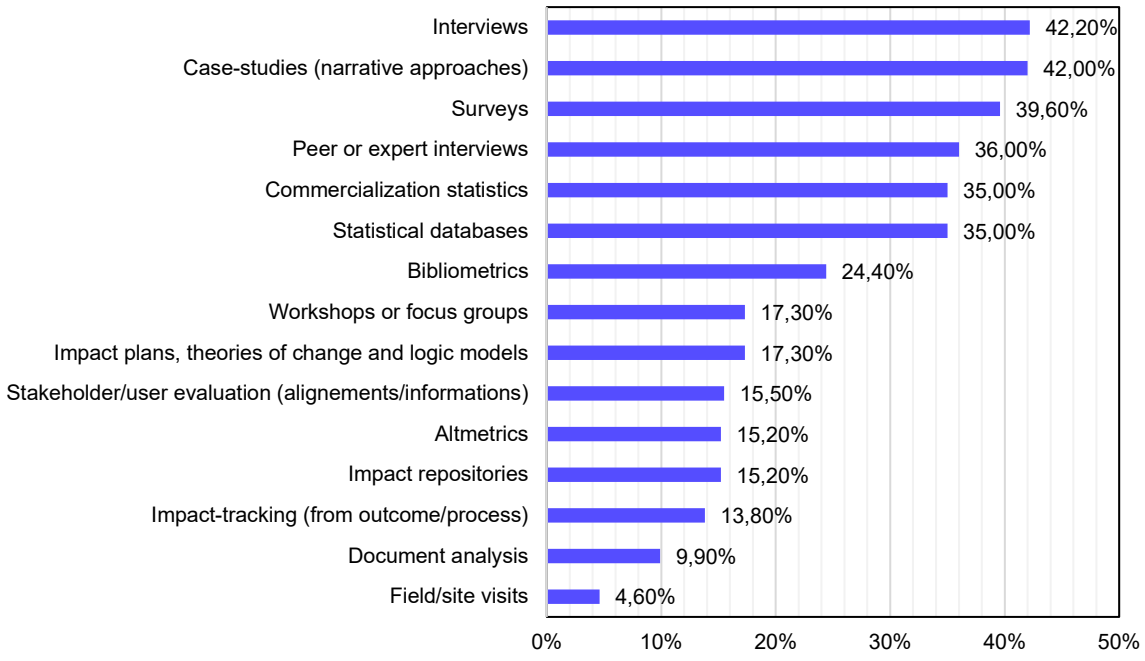

Figure 2: Share of documents mentioning the main methodological components in the literature corpus in percent (n = 283) (Pedersen et al., 2020, p. 10)

As shown in figure 1, interviews are the most widely used method to measure impact. Interviews are often conducted with non-academic partners or consumers but also sometimes include experts in research impact evaluation. The main strength of this method is that it enables evaluators to gain first-hand insights into the circumstances surrounding the creation of impact as well as comparability if structured interviews are used. However, the main disadvantage of interviews is that it is difficult to guarantee reliability and completeness of the results, and additionally, interviews are rather resource-intensive because they take a significant amount of time to carry out and analyse (Pedersen et al., 2020, p. 9).

Second to interviews, according to Pedersen et al., case studies are the most used methodological approach. The main advantages highlighted in this method is that case studies can capture the complexity which, as we have described, characterizes the assessment of societal impact specifically in the SSH (Pedersen et al., 2020, pp. 9–10). Likewise, they allow for a high degree of contextualisation, and they can draw on various data sources (Penfield et al., 2014, p. 29). Thus, they are well-suited to mapping the various pathways of impact across different institutions related to policy, health, industry, and culture. However, some critique the use of case studies as non-objective because it doesn't offer the opportunity to rank or benchmark various studies. Likewise, as is the case with interviews, it

has been criticized for maintaining a short-term focus. Finally, it requires significant resources in terms of time for both researchers and evaluators (Pedersen et al., 2020, pp. 9–10; Penfield et al., 2014, p. 29).

In terms of existing quantitative measures of societal impact, several different approaches are represented in the literature. Most commonly, surveys, various forms of statistical databases, bibliometrics and altmetrics are used. An obvious drawback of various quantitative measures is the assumption that the complex forms of impact pathways in the SSH can be observed in a quantitative manner. Pedersen et al. (Pedersen et al., 2020, p. 10) point out that quantitative approaches risk measuring the likelihood of impact rather than the actual, realized impact, because they count the number of interactions between stakeholders and researchers without elaborating the more abstract aspects of the significance of these types of meetings etc.

3.4.2. Time of measurement

Funding and societal impact measurement are intimately linked to funding structures, seeing as national and other agencies often emphasize the perceived or expected impact of projects in their decisions on whether to provide funding (Aiello et al., 2021, p. 133). However, in general, there is also a desire to measure the 'actual', realized impact of research. Accordingly, in the literature, a central methodological divide concerns *when* to measure societal impact of research. In overall terms, assessments mostly take place *ex-ante,* i.e., prior to the research process taking place, typically in relation to planning or applying for funding, or *ex-post*, i.e., after the research that is to be evaluated has been carried out (Aiello et al., 2021, pp. 133–134; Pedersen et al., 2020; Upton et al., 2014).

At the ex-ante level, societal impact considerations are useful in terms of mapping plans to achieve impact and dissemination, clarification of mission as well as identifying partners (Pedersen et al., 2020, p. 5). However, an obvious drawback of ex-ante approaches is that societal impact of research might not occur as expected, or it might not be intended – thus, it is extremely difficult to plan. Likewise, researchers might try to exaggerate the perceived societal impact merit of their proposed research. These perceived difficulties are also the background of the *productive interactions* approach present in many of the studies in the literature, where the focus is shifted towards the processes that enable or induce impact in order to recognize *potential* impact of research (Spaapen & van Drooge, 2011, p. 213).

Ex post assessment serves to demonstrate that past research engagement or involvement has succeeded in achieving societal impact (Upton et al., 2014, p. 11). This approach is also referred to as an 'outcomes-approach', and there are various disadvantages of such an approach: Upton et al. (2014, p. 11) argue that an outcomes-based approach is '*caught between excessive complexity on the one hand and a lack of comprehensiveness on the other*', and they point out that a potential risk of using ex ante assessments is that some research engagements or activities will never result in impact that can actually be identified. Additionally, they mention that the use of ex ante measures involves a risk that activities might be adjusted to be more readily amenable to impact assessment and observation (Upton et al., 2014, p. 11).

In their identification of frameworks in the literature, Pedersen et al. (2020) found that two models measure impact ex ante exclusively, 5 measure it ex-post exclusively, and 3 measure both ex-ante and ex-post.

3.4.3. Cases of frameworks

3.4.3.1. Payback Framework

The 'Payback Framework', which is regarded by many (Penfield et al., 2014, p. 23; Searles et al., 2016, p. 4) as the most widely used model for societal impact assessment, was originally developed in the 1990's to evaluate societal as well as academic impacts of health science by attempting to link research with associated benefits in a systematic manner (Penfield et al., 2014, p. 23). It draws on two parts to assess impact in a linear representation (Pedersen et al., 2020):

1. A logic model mapping the research project process from topic identification to final results (Buxton, 2011)
2. The payback, divided into five categories: 1) knowledge, 2) benefits for future research, 3) benefits for policy and practice, 4) benefits for health and health systems and finally 5) broader economic benefits (Hourneaux Junior & Sandes-Guimarães, 2020, p. 428)

Although the framework has been modified in order to suit the evaluation of SSH research and is also being used in this context, for example in research assessment at the University of Cambridge, it still of limited use in SSH because it is largely based on a linear model that

cannot capture the high degree of complexity and interaction in SSH (Pedersen et al., 2020, p. 7).

3.4.3.2. SIAMPI

The SIAMPI (Social Impact Assessment Methods for research and funding instruments through the study of Productive Interactions) framework, introduced by Spaapen & van Drooge (2011) seeks to overcome the problems related to attribution, time-lag and causality through the introduction of *learning* rather than judgement as a central evaluation criteria. Thus, this framework focuses on a broad conceptualization of direct, indirect, and financial interactions between researchers and other actors, referred to as *productive interactions*. However, it is emphasized that it is not the interaction itself that is important but rather the role that it plays in the process of creating societal impact (Spaapen & van Drooge, 2011, pp. 217–218).

In contrast to the Payback Framework, SIAMPI is non-linear and emphasizes the dynamic nature and complexity of research impact (Spaapen & van Drooge, 2011, pp. 211–212). Although not originally developed for SSH, the model is particularly suited to SSH due to its inherent focus on addressing challenges of impact evaluation that are even more pronounced in SSH, (Hourneaux Junior & Sandes-Guimarães, 2020, p. 430; Pedersen et al., 2020, pp. 7–8). Methodologically, SIAMPI draws on interviews, focus groups, qualitative data and the analysis of annual reports and other documents (Pedersen et al., 2020, p. 10), and generally, the specific methodological approach is rather open to interpretation in terms of the specific context (Spaapen & van Drooge, 2011, p. 218). Accordingly, a significant drawback is that the approach requires significant commitment in terms of time and resources from evaluators.

3.4.3.3. Altmetrics

As scholarship and publications turn increasingly to digital platforms, new forms of impact measurement arise. According to the literature, altmetrics is perhaps the most successful proposition for a quantitative ‘catch-all’ method, i.e. the use of data covering the attention to research from non-traditional sources such as mainstream and social media, policy documents, patents, reference manager such as Mendeley and Wikipedia (Moed & Halevi,

2015, p. 13). The method is managed by a private company[3], but other similar approaches by other organizations such as Semantic Scholar[4] also exist. The goal is to paint a more nuanced picture of researchers' and universities' impact on society outside academia (Robinson-Garcia et al., 2018, pp. 2–3). Across various publishing sites for journal articles, readers can view the Altmetrics Attention Score for a particular article. This score is composed based on three factors: 1) the volume of mentions, 2) the sources that mention it, i.e., a mention in a newspaper article is better than a tweet, and finally, 3) the authors, i.e., often the author of a mention refers to the same articles (Altmetric, 2015).

3.4.4. Main problems in measuring societal impact

As mentioned, there is no consensus on how societal impact ought to be practically measured in the social sciences and humanities, and some question whether it is possible to provide a universal model that can capture the complexities of impact at all (Pedersen et al., 2020, p. 14). The difficulties in measuring the impact of social sciences and humanities can broadly be categorized according to three highly interrelated aspects: 1) causality, 2) attribution, and 3) evaluation timescale. These forms of difficulty are shown in Table 1. For all three aspects, the underlying cause of the problem might be identified as the high level of complexity of the relationship between research activities and societal impact (Robinson-Garcia et al., 2018, p. 3).

[3] See https://www.altmetric.com/

[4] See https://www.semanticscholar.org/

Causality
• Not clear what impact or benefits is caused by which research activity
Attribution
• Impact is complex and co-exists with other social processess, making it difficult to attribute research vis-a-vis other developments and processes
Evaluation timescale
• Evaluations often focus on a short timespan, but societal impact might take many years - this results in research resulting in short-term impact being over-emphasized

Table 1: Four problems of societal impact measurements (based on Bornmann et al. (2019, p. 330)

An interesting aspect that concerns the difficulties related to attribution and timescale of research impact assessment is brought up by Hughes & Martin (2012), who point out the negative correlation between ease of attribution and the effect of research – i.e., the more time passes form the publication or realization of a research project, the harder it will be to attribute possible impacts because the complexity and effect of other sources becomes increasingly more important.

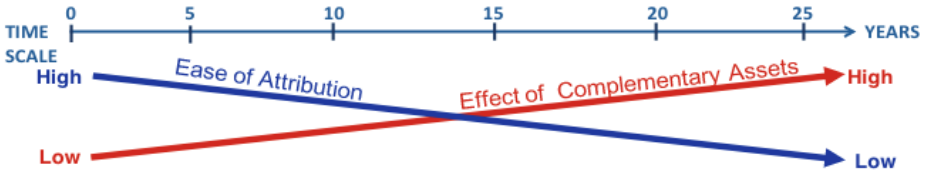

Figure 3: The correlation of ease of attribution and effect of complementary assets with time, Replicated with modification from Hughes & Martin (2012, p. 19)

4. Discussion: Consequences of impact measurement and lack of methodological consensus

As we have shown, the literature on societal impact measurements showcases many methodological disagreements and potential pitfalls. In this section we present the consequences of impact measurements and the lack of methodological consensus in the field and practice.

Generally, the causal empirical evidence on the consequences of impact measurements on the structure of scientific research is lacking, because – as is the case with societal impact

– it is extremely difficult to attribute specific consequences of traits of the contemporary scientific system specifically to the increasing demand for impact measurements. Thus, most of the points presented here are theoretical or hypothetical in nature, drawing on aspects we might expect.

4.1. The increased focus on societal relevance

To start off with, although many aspects of the current state of impact measurement systems leave a lot to be desired, a strong focus on societal impact, notably in the SSH, is a core value in the ERUA project, and part of the goal of the alliance is to further the contribution of the members to European societal challenges and the UN SDGs. Thus, the underlying basis for the increasing need to demonstrate societal impact of research is entirely in line with the values of the alliance. Although we have not identified research that provides causal empirical evidence that the increased focus and demand for societal impact measurements have changed attitudes among individual researchers towards a larger focus on impact, it has obviously manifested itself on the meso-level, seeing as universities have embraced their 'third mission' through various impact and entrepreneurial activities (Albert, 2003, p. 148; Fini et al., 2018, pp. 5–6; Perkmann et al., 2015, p. 381). We believe, in line with Penfield et al. (2014, p. 22) that the justification of universities lies in the connection between society and the institution – in the imparting of information in a creative way. However, much of this important task also lies in the dissemination of contemporary research through teaching and learning – an aspect of impact that is often forgotten in the literature. As such, as reform universities, we welcome the increased focus on establishing a culture of dissemination and collaboration and participating in networks. However, we also see a need to proceed with caution to avoid structural marginalization of specific forms of research. In the following, we will elaborate these concerns.

4.2. Relevance and rigour

Often, the tension between internal and external quality of research is described using the balance between *rigour* and *relevance* – the former pertaining to traditional, internal quality measurements of scientific research while the latter addresses the core goal of external quality measurements. A crucial part of the societal impact discourse concerns inclusion of external stakeholders and partners in the form of various actors in different stages of the research process. However, often, the concerns of academics and practitioners differ, with

academics roughly speaking being concerned mainly with methodological rigour and practitioners focusing on practical relevance (Jarzabkowski et al., 2010). This provides cause for possible tensions in the inclusion of non-academic stakeholders in research projects (D'Este et al., 2013, p. 494), seeing as researchers might feel or fear that their academic expertise or sovereignty will be challenged and that they should tone down certain results (Martin, 2010, p. 213). This is important, as the involvement of external stakeholders is seen as a keyway to achieve societal impact in the social sciences and humanities. In this context, an interesting point regarding rigour is brought forward by Gutiérrez & Penuel (2014, p. 22) who argue that relevance to practice should be a key criterion for rigour, which significantly challenges the notion of a hard divide between rigour and relevance.

4.3. Critical and novel research

At the heart of ERUA is the shared tradition of critical thinking, interdisciplinarity and disruptive approaches. Thus, an important aspect of the approach to societal impact is whether or how it can enable these forms of research. In general, the increased interest in the measurement of different aspects of society, can lead to questions of whether research patterns change. Specifically, we are interested in whether researchers refrain from conducting critical research that challenges existing norms and discourses because of increasing measurements – i.e., are researchers more prone to making 'safe choices'? As mentioned, this is extremely difficult to measure empirically in a rigorous way. However, some studies in the identified literature provide theoretical perspectives that might shed light on potential consequences. Several scholars and studies have concerns about the impact agenda and its effect on critical research (Pedersen et al., 2020, p. 16; Smith et al., 2020, p. 3), and one of the main concerns is that focusing on research impact will likely prioritize "safe" research, where impact is easy to demonstrate (Machen, 2020, pp. 329–330). Accordingly, Machen (2020, p. 331) argues that there is a negative correlation between the potential for change and the ease with which the change can be realized: The frame of assessment, focusing on the rather short term benefits of a few years, cannot grasp radical social change because it doesn't fully manifest within these time frames. Likewise, these types of impact are hard to capture by means of economic-centred models and ought to draw on a wider concept of impact (Machen, 2020, pp. 331–332).

Drawing on existing REF impact case studies, Machen (2020, p. 332) identifies five forms of critical research impact, which are presented in Figure 5. These might prove useful for future

impact assessment models inspired by the values central to ERUA or to assess critical research in general.

Figure 4: Five Modes of Critical Research Impact (Machen, 2020, p. 332)

In addition, an aspect of the relationship between critical research and the strong focus on stakeholders' involvement in impact measurement is that results might meet negative reactions on behalf of the 'recipients' of research, i.e., the external stakeholders. Critical research is likely to go to the heart of structural aspects of various sectors, and senior external stakeholders might be hesitant to adapt or even accept the results if they challenge what is seen as a natural aspect of said field. This is of course only the case if stakeholders are explicitly part of the process throughout the course of research (Colley, 2014; Laing et al., 2018, p. 174). As such, an aspect to be aware of is making sure that stakeholders do not try to limit the dissemination of results if they do not agree or have different reasons to oppose them (Colley, 2014, pp. 671–672).

Finally, an important aspect of concerns over the call to provide evidence of impact relates to novel and basic research, i.e., open-ended, experimental, or theoretical work specifically aimed at creating knowledge about underlying foundations of phenomena, i.e., without any specific use or impact in mind (OECD definition): Inherently, impact is extremely difficult to prove in these types of research projects. The impact agenda puts this approach under

scrutiny (Bornmann, 2014). Penfield et. al. (2014, p. 31) accordingly point to an important limitation of impact measurements: in some areas of basic research, the impact is far removed from the actual research, making impact measurement extremely difficult, leading them to argue that these forms of research ought to be considered as exceptions for impact measurements.

4.4. Consequences for Early-Career Researchers

ERUA seeks to offer various possibilities for early career researchers (ECRs), and therefore, it is worth noting that some attention is given to the connection between societal impact and ECRs in the field: Specifically, for ECR's, the pursuit of demonstrating the societal impact of their research is particularly difficult, seeing as they not only have lesser academic reputation than senior staff, they also have fewer incentives to actually focus on societal engagement, seeing as this is often dealt with by more senior researchers, according to Friesike et al. (Friesike et al., 2022, p. 240). Likewise, Machen points out that some raise the concern that impact measurements reward academic elites over ECRs and international researchers (Machen, 2020, p. 330) because they do not yet have established networks and expert authority, and specifically in the SSH, impact often manifests through these means.

Finally, a further point relating to ECRs is that the structure of impact measurements, especially if measured through case studies, might reward those that can write in a convincing way about their perceived impact (Penfield et al., 2014, p. 29) in funding proposals and evaluations. In that regard, it is worth mentioning that several private consultancy and PR companies have started offering various services related to the demonstration of research impact.[5] In this regard, concerns should be raised about the consequence of external experts taking over the role of writing various form of impact assessments, plans, and evaluations, as this might favour larger institutions as well as established researchers and research groups, seeing as they can be assumed to have better chances of funding these types of activities.

[5] See for example https://www.bulletin.co.uk and https://sirisacademic.com/

4.5. The balance of research and teaching

One aspect which concerns both the generally increasing degree of various forms of evaluation in publicly funded research as well as societal impact specifically is the balance between teaching and research. The underlying cause of the importance of this balance in relation to societal impact measures is that when researchers are increasingly assessed on some parts of their tasks, in this case research, they might pay less attention to organizing and conducting teaching (Severinson, 2018, p. 15). For ERUA, innovative pedagogy and strong attention to students is crucial, and thus, this issue is important to shed light on. Likewise, teaching can be argued to be an integral part of societal impact, seeing as university and other forms of higher education make up a substantial share of educational attainment in most countries. Thus, in terms of mere numbers of 'end-users', students are perhaps the single greatest channel of societal impact, the research disseminated to students through teaching will permeate into society through the various forms of employment that students will embark on post-graduation, where they will draw on the scientific knowledge acquired in their studies (Pedersen et al., 2020, p. 7). We call for a further inclusion of this aspect in societal impact literature.

Almost no frameworks incorporate teaching explicitly into their models. However, in this regard, it is worth paying attention to the so-called 'Standard Evaluation Protocol' used by various institutions in the Netherlands. This is a sophisticated model comprising many different aspects, the baseline being that it evaluates research groups based on research quality, social relevance and viability (Universities of Netherland, n.d.). Pedersen et al. (2020, p. 7) point out how it addresses teaching and training as part of its assessment indicators. Thus, it might be of interest to draw inspiration from this model in future impact assessment models when trying to include the important aspects of teaching and learning.

4.6. Specific consequences of impact measurement for SSH

We have already shown that there is widespread agreement that the societal impact of social sciences and humanities is inherently different to that in STEM disciplines. However, until now, we have not discussed the specific consequences of the widespread use of societal impact measurements and what this might mean for these disciplines. Thus, in the literature, there is broad consensus on two main aspects of societal impact in the social sciences and humanities: First, the impact and value produced in disciplines within these types of sciences is different than in STEM disciplines due to a higher degree of complexity and integration in

various political and institutional processes. Secondly, this also entails that the impact and value produced in these types of disciplines is significantly more difficult to capture and measure than the impact produced in the disciplines within STEM.

In that regard, Reale et al. point out that the predominant methods of measuring societal impact presented in the literature 'tend to underestimate the value of SSH research outputs because efforts fail to properly take into account the distinctive features of SSH research that differ from the natural sciences' (Reale et al., 2018). A pitfall of the measures to identify suitable indicators is presented by Olmos-Peñuela, Benneworth, et al., (2014) who argue that the lack of indicators has been used to defer that research produced within SSH disciplines has no impact. Research evaluation has a methodological bias towards the natural sciences, but they are being applied to SSH and technical sciences (de Jong et al., 2011; Olmos-Peñuela, Castro-Martínez, et al., 2014; Reale et al., 2018).

An important objective of this report is to examine the challenges presented in the literature related to societal impact measurements that exist specifically for disciplines within the social sciences and humanities. Across several OECD countries, financial support is increasingly channelled away from SSH in favour of research within the natural, technical and life sciences, and Bonaccorsi et al. (2021, p. 2) suggest that the perceived difficulty in identifying, observing and measuring the impact of this type of research is one reason for this trend. In an EU-context, the funding of SSH was even at risk of being eliminated in the Horizon 2020 Programme (H2020) (Flecha et al., 2015), an important blow to the perception of the merits of SSH, seeing as H2020 with its budget of nearly €80 billion constituted one of the largest publicly funded research programmes across the globe (Fini et al., 2018).

5. Recommendations

5.1. General recommendations

5.1.1. Create awareness of methodological difficulties

As this report has shown, the task of measuring and evaluating societal impact might present an array of methodological difficulties. Thus, we call for a general awareness of these difficulties. It is crucial to be aware that to this day, no 'one size fits all', universal measure or method of measuring and evaluating societal impact exists. Likewise, as we have shown, this is particularly true for the SSH disciplines, because of the complexity and multitude of actors, and it is easy to draw the conclusion that they simply do not have an impact on society. As universities strong in SSH, we ought to reject crude, overly simplistic and linear definitions of impact in sciences and research which cannot account for the effects that much of our research has on a multitude of actors.

5.1.2. Invest in support systems

When implicit or explicit systems to measure and allocate funds or positions based on societal impact exist, the composition of competences needed to be successful as a scholar is altered and broadened: At a general level, we call for general support for scholars to navigate in articulating and showcasing the possible or achieved societal impact. As we have seen exemplified by the emergence of companies offering 'academic consulting', societal impact measurement and evaluation often rest on a specific underlying narrative. Many national states have worked out strategies for the participation in EU Research Funds and/or set up various forms of national support systems to help scholars participate in EU framework programmes[6]. However, some scholars still feel that they lack competences to showcase the societal impact of their research, and this ought to be addressed at an institutional level.

[6] See for example the German 'Netwerk der Nationalen Kontaktstellen' (Network of Contact Points) (https://www.horizont-europa.de/de/Netzwerk-der-Nationalen-Kontaktstellen-1732.html) and Poland's National Focal Point for Horizon Europe (https://www.kpk.gov.pl/)

5.1.3. Foster public interest in SSH

Finally, although somewhat peripheral to the question of how to measure societal impact, we propose to explicitly foster public interest in research within the SSH as well as the impact that it creates and has created historically. This relates to the public understanding of SSH and is important in the light of the context of research assessment, which is often anchored in the desire to highlight public value of research.

5.2. University and department management

5.2.1. Foster impactful research environment enabling and conditioning societal impact

At the university and department level, we recommend the focus on establishing and fostering impactful working and research environments rather than focussing on achievement of individual researchers. Specifically, this entails the explicit signalling of appreciation of the involvement of external actors and the awareness and communication of results to the broader society outside academia and valuing a greater range of academic activities (Perkmann et al., 2015, pp. 200–201).

5.2.2. Work strategically to highlight the impact of SSH

In addition to the furthering of an environment that favours impactful research, one approach that we see as fruitful in terms of increasing the awareness of the impact that SSH creates, is to work strategically to highlight the impact of SSH research taking place at individual apartments. Thus, apartments and universities can work to communicate the role of not only research but also the significance of students using their degree in society.

5.2.3. Defend possibilities to engage in critical, novel, and basic research

In the context of the increasing significance and use of various forms of research assessment indicators, including those measuring performance based on societal impact of research, universities and departments most work to defend the possibilities to engage in the types of research that are likely to be undermined and marginalised by these indicators: Namely, they should be aware of the importance of securing spaces for critical, novel and basic research and be aware that these might not necessarily result in high impact for external actors,

although they might have great significance in further theoretical work and thus might have a derived societal impact not instantly visible.

5.3. Individual researchers

5.3.1. Striving towards dual impact

For individual researchers, especially in the SSH, impact should be seen as integrated, not separate from the societal dimension. Scholars should think about how scientific production can be used in a wider societal context and vice versa, how interaction with a wide range of societal interests and actors can benefit scientific production.

5.3.2. Benefiting from social engagement

In view of the changing assessment criteria for academic promotion and publication, scientists should consider and plan for how to engage relevant stakeholders. Not least, scholars should consider how interaction can provide important assets for academic work, e.g. in the form of empirical material, access, funding or other forms of collaboration.

5.3.3. Long-term planning

Societal impact is often not linear and should be viewed in a long-term perspective. Scholars should take this into account when planning research projects and societal outreach. This also means that previous research, too, can be of relevance and should be considered an asset for societal engagement. As we have shown, critical and novel science can suffer from narrow measures of societal impact. As universities with a legacy of novel and critical research, EURA universities and researchers need to adopt a long-term perspective on achieving societal impact.

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