

THE SOCIETAL IMPACT OF SOCIAL SCIENCE
KNOWLEDGE IN AUSTRIA: IMPACT
PATHWAYS, MEASUREMENT, POTENTIAL

An Explorative Study

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SUMMARY

Over the past two decades the question of the impact of scientific knowledge has been posed with ever increasing emphasis in a diversity of societal contexts. While the science and technology were the centre of focus for quite some time, the social sciences are now also confronted with this development. Correspondingly, we can witness a number of attempts to develop indicators and forms of representation, which should allow to show/measure the societal impact of the social sciences and, if possible, make it comparable as well.

This report is based on an **exploratory study on the societal impact of the university-based social sciences in Austria and on the possibilities to capture/measure this impact**. The goal is to provide differentiated input to the discussion on the societal importance of social science research in Austria. Our elaborations are based on a broad analysis of the relevant academic literature, on a series of expert interviews with people engaged in different national contexts with the issue of societal impact¹, and on an explorative, qualitative sample of interviews with experienced social scientists working in Austrian universities. The disciplines covered in the interviews are **communication science, political science and sociology**.

On this basis, we want to share the following observations with regard to societal impact, its categories, indicators and possible measurement and make some recommendations.

1. Social science knowledge **reaches society through multiple pathways, where it is taken up implicitly or explicitly in a variety of ways. This diversity is what ensures a sustainable relationship between social sciences and society on various levels**. However, these different categories of engaging with society do not enjoy the same attention in today's institutional perception. While media presence, for example, is closely documented, other important activities such as collaborative-participatory/action-oriented research with stakeholders or contributions in advisory boards relevant to society often disappear from the institutional perception. One important step in increasing the impact of the social sciences in society here is to achieve greater symmetry in institutional perception and appreciation.
2. **The societal impact of research is significantly more difficult to measure than the scientific impact** (although whether or not the indicators used are always meaningful and beneficial is also increasingly discussed in the latter case). There are a number of reasons for this difficulty, which apply for all sciences (among others, problems with the time horizon between the generation of knowledge and societal change; for further details, see chapter three). For the social sciences additional challenges arise from the fact that their knowledge for the most part is not converted into concrete objects or technologies, but rather used by societal stakeholders as **orientational knowledge**. In most cases it is therefore not clearly verifiable when and to what degree knowledge or the interaction with a social scientist has resulted in a specific change in a certain area of society. **This makes the causal attribution of societal changes to specific social science knowledge considerably more difficult**.
3. **Impact in the sense of actual changes in society**, which are associated with social science knowledge, **is not broadly ascertainable or measurable as part of existing indicator systems and methods**. In each individual case documenting impact requires extensive additional surveys, which entail significant resource costs. The measurement and documentation of impact can therefore not be performed exhaustively in a meaningful way, but rather must always be

¹ In this report we use the term "societal impact" to describe the effects of social science research. *Societal* refers to very different areas of society in which social science knowledge and interventions take place.

- restricted to selected examples (as also practised in the context of the British REF, for example). However, this also means that only a smaller portion of the actual impact gets documented.
4. **The prerequisites for impact are easier to ascertain and measure than the actual impact itself.** Specifically, the efforts of researchers to increase the **visibility** and **societal relevance** of their research are the **conditions for later potential impact**. This also highlights the investment of the researchers in the interaction with society. However, it is extremely important not to confuse/equate categories that describe preconditions such as relevance or visibility with actual impact.
 5. If we consider the currently **available documentation systems**, the **greatest potential** is seen in documenting **the creation of impact conditions**. These efforts in particular should include the work **with** societal stakeholders to improve the suitability and reception of knowledge.
 6. International experiences show that striking the **right balance between narrative approaches and quantifiable indicators** is important. National systems with longer-term experience in measuring societal impact in evaluation situations in particular give preference to a **narrative account of impact and only use quantitative indicators to support the narrative**.
 7. Prior to designing and implementing a system for **ascertaining the societal impact of social sciences** it is very important to ask **what specific goal** should be attained. Is it about a new type of resource distribution, such as the *impact cases* in the UK? Is it about creating incentives for a more *mission-oriented* focus in social science research and involving it more actively in working on societal problem areas? Is it about improving the integration of social scientists' knowledge into the shaping of society, as part of evidence-based policies, for instance? Or is it about publicly justifying why the social sciences receive funding and support? **Different types of documentation and measurement are required depending on the objective**. While narrative formats provide a clear advantage for communicating the performance of the social sciences, systems that have an impact on resource distributions require a significantly higher level of standardisation and trigger considerably stronger (and frequently undesirable) adjustment effects.
 8. In the concrete establishment of measurement and documentation systems, it is important **to first decide on which level of aggregation the societal impact of research should be measured**. Are faculties, individual departments, work groups or individuals the subject of the evaluation? Due to the high costs of appropriate impact documentation, but also because of the problems of a behavioural adjustment as a reaction to the measurement and general methodological considerations coming from research on indicators **a measurement at individual level is not recommended**. Internationally the measurement of impact in the context of evaluations almost exclusively performed on relatively highly aggregated levels (departments, faculties).
 9. The **diversity of scientific fields**, both in comparison to the natural sciences and within the social sciences, for example, **must be considered when measuring and documenting impact**. The results of our study show clearly that the paths through which impact happens and the effects knowledge has on society vary largely between different areas of the social sciences. There is also considerable heterogeneity within the social sciences, which cannot be reduced to differences between the established disciplines. This requires **the use of a broad range of indicators and types of documentation**, but also the **ability of assessors** (carefully-staffed interdisciplinary panels in the case of impact measurement as part of evaluations) **to productively deal with these differences – and do justice to diversity**.
 10. It is generally important to specify that **indicators for measuring societal impact require additional infrastructures and resources**. It is not beneficial to simply redefine existing indicator systems for measuring the public presence of science as systems for measuring impact. The measurement of activities that create the conditions for societal impact, but also and in particular the development of incentive systems and measures to further improve these impact

conditions, require additional resources to those currently available at the universities. Furthermore, the **creation of new institutional structures or an extension of the mandate of existing structures** seems necessary. With regard to impact, many universities currently concentrate on issues concerning spin-off and technology transfer, both topics being not very relevant for the impact of social science knowledge. Extending the mandate of these structures towards a broader understanding of the societal impact of knowledge, together with devoting additional resources, has the potential to significantly improve the visibility and impact of social science knowledge in society.

11. An **important limiting factor for the performance of social science research, which explicitly targets the creation of impact, are the scarcely available options for funding corresponding research projects in Austria.** The established funding bodies such as the FWF define their criteria strictly and exclusively in the area of scientific relevance. While there is indeed the option after an FWF project to get funding for an “outstanding science-communication measure” in connection to the project, this is by no means sufficient and always comes ex-post (after the research). Direct funding by interested stakeholders poses specific problems, especially with regard to the independence of the research. Institutionalised funding bodies that pay more attention to societal relevance (such as various foundations in Germany, for example), are entirely lacking for social sciences in Austria.
12. **In conclusion, it must be specified that some of the greatest potential for increasing the societal impact of the social sciences lies with the institutions, in particular the universities.** Our results suggest that researchers are often rather ambivalent with regard to the institutional appraisal of impact-relevant activities. This can result in these activities being somewhat minimised, as their value – compared to other activities, such as the generation of inner-scientific impact – appears unclear and may even be seen as negatively correlating by researchers. **Institutions such as universities also recognising and appreciating the performances of researchers in creating impact possibilities would be an essential requirement for further increasing the efforts of researchers to impact society through their knowledge and their expertise.**

1. INTRODUCTION

Over the past two decades the question of the impact of scientific knowledge in the most diverse societal contexts has been posed with growing emphasis. The increasing importance of research for social developments will therefore become an important theme of research and innovation policies. This development began in various national science systems at different times and also underwent a variety of specific transformations. All approaches to this challenge do however have the common denominator of having searched for ways to make the impact of research on society visible and measurable. Correspondingly, a number of attempts, indicators and forms of representation must be developed, which should make the societal impact of the social sciences visible/measurable and possibly also comparable (for an overview see, for example, Bornmann, 2013; Reale et al., 2017). The latter in particular is also due to the rising competition between scientific areas, but also between universities and individual scientists at national and international level. However, it can also be seen in the context of a broader societal movement towards introducing formalised assessment and evaluation structures in its sub-areas (Power, 1999; Dahler-Larsen, 2011). Savranski (2016, 122) describes the change aptly by emphasizing that, “in the many forms of research audit in universities [...] relevance tends to become coupled with notions of 'impact' and 'engagement'”, creating the appearance that knowledge production would have to be measured against clearly evident, direct and verifiable societal impact.

This report is based on an **explorative study of the social impact of the social sciences in Austria and the possibilities to ascertain/measure this**. The goal is to provide differentiated input to the discussion on the societal importance of social science research in Austria. The complexity of the modes of action of social science knowledge is worked out here, and the importance of “*Responsible Metrics*” (Wilsdon et al., 2015) is also referred to, when making/introducing indicator-based estimates of the socially-relevant performance of the social sciences. As Beck and Bonß (1989) already stated in their first writings, when thinking about the impact of the social sciences in society, we must always take into account that the use of knowledge is never simply its application. Rather it should be seen as a process of co-production or even as an act of creating new knowledge whose “practical relevance has to be created yet”. They continue: “As a rule, socio-scientific interpretations tend to become practically effective when they to blend in the consciousness of everyday life and politics seemingly 'without a trace' [...]”.

These considerations are key, because it is about more than just the design of an efficient management system, via which the societal impact of social science research must be documented, made visible and perhaps also measurable. “*Metrics hold real power: they are constitutive of values, identities and livelihoods*”², which signifies that they also change the system which they pretend to measure. Just like the persons that act within that system. In this context it must be emphasized that, while the natural science subjects can already draw on a lengthier discussion on their “transfer capacities” in society, such an in-depth discussion on the social sciences has not yet been held to the required extensive degree, and where it is discussed, it is in a very fragmented, intermittent way (see chapter 3). By comparison there is also far less systematic research on the social sciences and their role in society (across and beyond individual case studies).

This report must, however, also be understood on the basis of recent debates at European level on the role of social sciences in the development of an innovation-oriented society. The important role of the social sciences is referred to quite clearly, among others in the recent *Lamy Report* (EC, 2017), a report by a high-level expert group at European Commission level, which had the task of illustrating the

² <https://responsiblemetrics.org/about/> A multitude of articles, books and reports have also been compiled at <https://responsiblemetrics.org/resources/>, some of which have been integrated into this report.

challenges of the post-2020 period. The title alone, “*Investing in the European future we want*”, compels the question as to who should/will take part in this shaping of the future. In the “Adopt a mission-oriented, impact-focused approach to address global challenges” chapter, it then says that the so-called “missions” should not only develop transformative potential for science, technology, industry and society. Rather an extensive integration of the social sciences and humanities, including them assuming a leading role, must in particular happen in those areas in which it is all about the, “major social issues of our time” (EC, 2017, 16). High expectations of the social sciences are therefore formulated here; however, it remains largely unclear how this will be subsequently implemented in appropriate funding lines and how this role measures up to that of the natural science-technical areas (Felt, 2014). This raises the question of how social science knowledge finds its way into societal decision-making and developmental contexts, how this can/should be supported and how this can be made appropriately visible and therefore comprehensible.

The report is structured as follows: Following this brief introduction, we will present the design of the explorative study (chapter 2). In chapter 3, selected international discussions on this topic will be elaborated on; furthermore, two case examples are presented and discussed, and expanded on with findings from the expert interviews. This is supposed to create a framework, which, building on the interviews with university researchers, will help draw appropriate conclusions and make recommendations. The centrepiece of this report is then provided by the analysis of explorative interviews, which were held with experienced social scientists anchored in universities, from the areas of communication science, political science and sociology in Austria³. The objective of the interviews was to show the ways scientists themselves see the pathways of their knowledge to society, what activities they perform to have an impact on society, and what possibilities they see for documenting and measuring the societal impact of research. The analysis also showed their understanding of the university and its role in society. The results of the analysis of the interviews are presented from three perspectives in chapter 4: What are the pathways of social science knowledge to society (chapter 4.1); what understanding of impact do the researchers have (chapter 4.2); and which boundary conditions must be created to make impact possible in the first place (chapter 4.3). Building on chapters three and four, chapter 5 then reflects on the possibilities and limits of indicators to record the societal impact of social science research. The report then closes with conclusions and recommendations in chapter 6.

2. QUESTIONS AND METHODOLOGICAL APPROACHES AS PART OF THIS EXPLORATIVE STUDY

The explorative study, whose final report is presented here, examined the question as to how social science knowledge participates in the shaping of society and how this impact can potentially be made more visible and measurable. As this is an explorative study, which does not offer the option of addressing the social sciences in their full depth and complexity, three classic social science disciplines were selected, which are practised at Austrian universities at different locations: **Communication science, political science and sociology**. Why survey university researchers? Universities are key locations at which this question has to be asked. They are not only responsible for the production of new knowledge, but they are also the key institutions that train the researchers and knowledge workers of tomorrow (Felt et al., 2017). Universities – and social sciences in university contexts in particular – are, however, not only required to provide support with the realisation of a specific vision of societal development, but rather to also think contrary to the spirit of the times. This means asking uncomfortable questions, critically analysing

³ The authors of the study would like to warmly thank all experts and researchers interviewed for taking part.

existing orders and working out alternative concepts that question the current mainstream. This is particularly important in the context of this report, as societal impact always requires the cooperation of several parties: those that generate the knowledge and get to grips with societal needs, problems and stakeholders, and those that are prepared to allow this knowledge to impact their considerations and decisions.

This study started from the following basic questions, whereby it was clear that in a short explorative project, only basic clues and orientations can be provided for some of them.

- What are the (possible) pathways through which social science knowledge finds its way into society? How can the different forms of interaction between social sciences and societal stakeholders/areas be described and categorised?
- What main forms of impact are described in the three disciplines and what changes in society through social science knowledge are identified?
- What expectations of the social sciences are implicitly or explicitly formulated by the general public/politicians/the media/natural sciences?
- What does social science knowledge mean for social development in the region, so what role do proximity and distance to and from research institutions play to interact with societal stakeholders?
- How can impact be made visible and measurable and how can the effect of the social sciences on societal developments possibly be improved?

As the analysis in chapters three and four clearly show, the interviewees answered the questions in varying degrees of detail. This in particular applies to the questions on the expectations of external stakeholders and on the importance of social science knowledge in the region. While the questions about the impact pathways, impact forms and the measurability of impact produced empirically rich material, more comprehensive empirical work would be required for more extensive answers to the other two questions.

This study proceeded methodically as follows: In the first step comprehensive **literature research** was performed with regard to both the debates in the academic literature and the policy-relevant position statements on the evaluation of the role/performance of the social sciences.

Building on these insights, **nine expert interviews** were held, on one hand with people from the area of research administration and research funding in Austria, and on the other hand with international experts with special knowledge and experience with societal impact discussions in Great Britain, the Netherlands, Denmark and Norway.

In the next phase of the project **18 experienced researchers** from the above named three disciplines were interviewed, whereby the university locations (in alphabetical order) Graz, Innsbruck, Klagenfurt, Linz, Salzburg and Vienna were covered. 11 male and 7 female researchers were interviewed. The interviews followed a guideline oriented on the project questions and were digitally recorded (after the interviewees had explicitly given their consent). The interviewees were assured that the quotes would only be used anonymously. Each interview lasted one hour on average. Most of the interviews were held face-to-face, and in some cases via Skype or telephone as well. All interviews were transcribed and then analysed according to the study's questions.

In presenting the analysis in this report we have used representative quotes. The quotes are anonymized. Only the discipline is given after the quotes, but not gender and work location. The anonymization's main purpose is to focus on the statement instead of the person that made it.

Furthermore, when compiling this report we also drew on the experience of one of the study authors, who as a Dean of the Social Sciences Faculty of the University of Vienna performed a multi-year quality assurance project at the faculty, and also set up a societal impact platform⁴. In this context the topic of the mode of action of the social sciences in society has been very extensively discussed with very different groups of people in the faculty.

3. WHAT CAN WE LEARN FROM THE INTERNATIONAL DEBATES ON SOCIETAL IMPACT AND ITS MEASUREMENT?

The call to measure the societal impact of research has grown considerably louder over the last three decades and more; in this context, we can state that this discussion has only really begun to focus on the social sciences in the last ten years. In this section we summarise our analysis of the international debates on the societal impact of the social sciences. We refer here to both research presented in academic publication media and policy papers, as well as to interviews with international experts on this topic. The latter allowed us to also gain an explorative view of the actual implementation of efforts to evaluate societal impact in other European countries. This allows the results of the Austrian discussions to be better interpreted, understood and classified. It is important here to emphasize that particularly for the social sciences the national and institutional context they are embedded in plays a crucial role. Very often the social sciences deal with local/national phenomena in a broader regional/global context; the research funding at national level is organised and financially equipped very differently, and the work conditions (especially at universities) are also entirely different. Attempts to measure the *societal impact* of the social sciences and the experiences gained with them must therefore always be considered in a specific context and cannot (as successfully or satisfactorily as they may function at a specific location), be simply transferred.

We will proceed in four steps in the following. Firstly, the basic challenges for measuring societal impact will be identified. An overview of the more important lines being taken in the current debates will then be provided. In the third step the main features of two very frequently addressed case examples – the UK and the Netherlands – will be examined to illustrate both the positive elements and the problem areas using specific examples. The chapter concludes with two other important challenges from the expert interviews.

3.1. BASIC CHALLENGES OF SOCIETAL IMPACT INDICATORS

Referring to a presentation by Ben Martin⁵ for an FWF-ESF conference in Vienna in 2007, Bornmann (2012) very clearly illustrates the four major problem areas in the field of measuring societal impact.

⁴ The objective of the web platform is to show the social science research of the faculty and the interaction processes with societal stakeholders taking place within it, and by so doing to reflect with the researchers the pathways their knowledge takes into society and make this visible to outside actors. <https://impact-sowi.univie.ac.at/>

⁵ Martin (2007). Assessing the *Impact* of Basic Research on Society and the Economy. FWF–ESF International Conference on Science *Impact*: Rethinking the *Impact* of Basic Research on Society and Economy, Vienna, Austria, 11 May 2007. Conference Presentation.

While these do not relate specifically to the social sciences, they can be applied very well to the social sciences while considering specificities.

1. **Causality problem:** It should be clearly verifiable that a specific social science intervention or social science knowledge has resulted in a social change. As social change or the resolution of social problems often takes place in very complex and sometimes also unclear configurations, clear causal relationships are often neither convincingly arguable nor factually verifiable. This does not mean, however, that no impact has taken place. This point was also addressed again and again in the interviews. On one hand the question was asked here as to what would be considered sufficient to be able to make use of a causal relation. On the other hand it was also clearly emphasised that existing stable networks in a specific area of practice tend to result in the contribution of social scientists to the resolution of a practice-relevant problem also being acknowledged as such.
2. **Attribution problem:** Societal impacts can be diffuse, complex and contingent, and very often it is therefore unclear what must be attributed to the research and what must be attributed to other (social) inputs. This in particular applies for social science knowledge, which unlike the products of natural science-technical research is not diffused in society in the form of objects and technologies, but rather as concept and orientation knowledge. The successful integration of social science knowledge is often connected with the fact that it becomes invisible as specific social science knowledge.
3. **Internationality problem:** In times in particular in which the “grand challenges” are increasingly the focus of attention, it is important to consider that knowledge and interventions take place simultaneously on very many levels and at very many locations. In the case of global social problem situations in particular it is therefore scarcely possible to make clear attributions with regard to impact.
4. **Time scale problem:** If we ask the question about the impact of research too early, we run the risk of only determining those areas of research that bring short-term benefits, and research with possible long-term effects tends to be ignored. If we think about this question together with the fact that both funding programmes and evaluations often only consider a relatively short period, then completely new problem areas can develop here – a science system that is not sustainability-oriented, for example.

Whichever system is chosen for measuring impact, it is important to consider these four dimensions and develop appropriate methods of interaction with them.

3.2. THE DEBATE ON SOCIETAL IMPACT INDICATORS IN INTERNATIONAL LITERATURE

The international debate on measuring the societal impact of the social sciences has grown significantly in recent years. This is recognisable in the increasing number of papers in relevant journals (e.g. *Research Evaluation*), in the rising number of policy reports (at national and European level), and in the rising number of experiments to consider societal impact as part of evaluations. Before we trace the lines taken in the debate, we should mention a fundamental tension that can be perceived in the entire literature. While the most diverse attempts to measure societal impact with very different methods can be found in the literature, at the same time we also meet with quite a lot of “qualified scepticism” – so scepticism of the measurability of societal impact, which is based on very detailed considerations. In this phase of the debate the question is asked if impact can be measured at all in most cases and it is

often argued that, if at all, it would be significantly more promising to consider the conditions under which impact could occur and to subject them to a more precise analysis than the impact itself.

For the purposes of this explorative study we would like to draw on the most important elements of the debates and summarise them in a nutshell. In the interest of legibility we shall dispense here with the preparation of individual details and the description of individual experimental procedures (some literature references and details are provided in the footnotes). This decision is due to the fact that, before choosing a specific approach the stakeholders, who set up such as procedure for measuring the societal impact, must answer a series of fundamental questions. For further considerations on societal impact it is important to illustrate the major lines taken and problem areas of the debate and to identify important questions. **Three clusters of considerations** can be found in the literature; together, they result in a position with regard to the measurement of societal impact (see fig. 1).

Cluster 1: Framework considerations

This includes all assumptions in the respective articles on the meaning of the term “impact”, on the role of social sciences in society, and for justifying the relevance of the efforts to make impact visible and measurable.

Cluster 2: “Objects” to be measured

This in particular involves the definition of the key issues in the interaction between social sciences and society, which we would like to ascertain and have integrated into decisions/evaluations. The difference is essentially made here between interest in the process of the interaction with society and interest in a specific societal impact.

Cluster 3: Operationalization

The focus here is on the question of how, in accordance with the decisions taken in 1) and 2), we can make impact specifically visible and measurable. It must be taken into account that, depending on the chosen measurement methods, only certain aspects of the impact phenomena can be made visible and therefore, depending on the approaches, the results with regard to the societal impact of social science research are often incongruent.

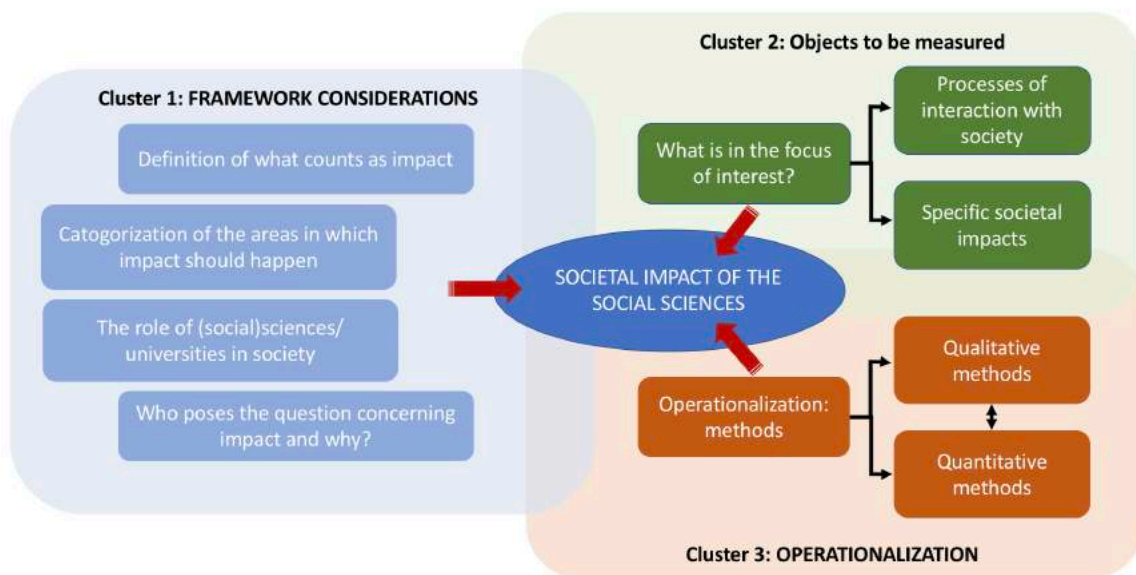


Fig. 1. Argumentative clusters in the literature on societal impact

What are the key points, where do opinions diverge and what has been learnt from previous attempts to define and measure societal impact?

Cluster 1: Framework considerations

At the beginning of most publications on the impact of social sciences in society is the question of the point at which we can describe something as impact. This in particular involves the question of verifiability. This plays a very important role in surveys, as with the British “Research Excellence Framework” for example (see chapter 3.3), and has also triggered a whole wave of critical discussions (see Penfield et al., 2013, among others). The problem referred to here is that, to clearly attribute impacts to specific research or specific knowledge, causal correlations would have to be proven. This is generally difficult, but scarcely possible with social science knowledge in particular. However, this certainly does not mean that there has not been any interaction or influence. As a consequence, only the impact on society that is explicitly recognised by the users of knowledge and is described in causal correlation with specific social science knowledge becomes/is made visible. It must however be assumed that this is only the case for a very small part of the impact of the social sciences in society.

The literature also includes significant difficulties in agreeing on the basic terms. We therefore find very different terms in the papers in relation to the term “impact”. It is mostly about “social” or “societal”, whereby the terms are not distinguished very clearly either; in other cases socio-economic consequences are focussed on more. And even more articles differentiate between “social” and “political/policy impact”⁶. In many cases they actually talk about social impact, but then it is the economic impact in particular that is argued. Joly et al. (2015) illustrate very clearly that the term *societal* actually incorporates very diverse fields, such as environment, social structures and relations, politics, culture, organisations, health and much more. In his extensive literature review Bornmann (2013) describes the situation by illustrating a series of terms used in the literature. These include third stream activities, societal benefits, societal quality, usefulness, public values, knowledge, as well as societal relevance. Without referring here to the insights behind the terms, it becomes clear that these different terms are often an indicator that, from the perspective of those doing the measuring or the analysts, certain social target areas are defined and highlighted, in which the social sciences should have their impact. What target areas these are precisely, however, differs entirely depending on the term and approach. The question of how the different terms are related also arises⁷.

The basic understanding of the science system and the position that the university takes on it in its relationship with society, for example, is also very closely connected with this.⁸ Many studies begin with an outline of how the science system has changed, why it has therefore become practically inevitable to have to discuss societal impact issues, and why indicators in particular also play an important role. In many cases these assumptions are not critically examined, and it is therefore assumed that the transformation of the science system has taken place in the same way everywhere. The “*The Metric Tide*” report, for example, begins as follows:

“There are powerful currents whipping up the metric tide. These include growing pressures for audit and evaluation of public spending on higher education and research; demands by policy makers for more strategic intelligence on research quality and impact; the need for institutions to manage and develop their strategies for research; competition within and between institutions for prestige, students, staff

⁶ For an analysis of the impact of social sciences on the policy field, see Macadam (2013).

⁷ Olmos-Peñuela et al. (2014) address the term, “knowledge transfer”, and examine how it relates to “societal impact”.

⁸ Gibson and Hazelkorn (2017) very clearly describe the impact-related considerations that took place in Ireland after the financial crisis.

and resources; and increases in the availability of real-time ‘big data’ on research uptake, and the capacity of tools for analysing them” (Wilsdon et al., 2015, viii).

Our interviews and the expert discussions, however, have shown very clearly that national and even institutional differences play a very important role here. Universities that are more regionally located therefore see themselves confronted with a specific assignment profile in which a strong interaction with society does actually assume an important position, but simply not in a form that would then be convertible into measurable indicators. One interviewee hit the nail on the head with the term “intellectual backbone of the region”.

Ultimately it is important to address the question of who commissions a study on the measurement of impact and which incentive systems or distributional logics this is connected with. In this sense there is no “free” question on its own about impact, but rather this is always connected with a specific knowledge interest. This pushes certain perspectives to the fore and others into the background.

Cluster 2: “Objects” to be measured

In two recent overview articles on the societal impact of social sciences (Bornmann, 2013; Reale et al., 2017) it becomes very clear that one of the most fundamental decisions is probably rooted in what should be measured and evaluated in the first place. Is it about **actually verifiable changes** that are to be measured or is it about **interaction processes that (could) gradually result in change**? Samuel and Derrick (2015) empirically illustrate this field of tension very clearly in a study, in which they ask panel members in the REF 2014 Evaluation in the UK about their definition and understanding of impact. This indicates that uncertainty about what precisely should be understood by impact and how it is verifiable is not only widespread among researchers (Wilkinson, 2017), but rather that entirely different positions also apply with those doing the assessing.

In a number of evaluations of the impact of social sciences the focus is on the **proof of an actual change** in society, e.g. in the *Impact Case Studies* in the REF in the UK (see chapter 3.3). In this case it must be proven, for example, how a policy area has changed (e.g. with a new regulation), how certain processes have been improved in the healthcare area, how the type and way to resolve social problems have shifted in a specific area, etc.

In other approaches described in the literature the focus is on the **processes of the interaction** of scientific stakeholders with societal stakeholders. Numerous studies on societal impact ultimately measure conditions of possibility for impact, as well as efforts to positively influence these conditions of possibility. Samuel and Derrick (2015, 237) describe this as follows: *“They perceived that the possibility of impact being realized was more related to a range of social factors, than adequately reflecting the nature of the research, or the efforts of the researchers themselves. This concept is built from the observation that the societal impact of science is not value-free and neutral and that science does not have an impact based solely on its particular capabilities”*. These and a number of other authors assume that interaction can be observed and measured better than actual impact. In this context, for example, Molas-Gallart and Tang (2011, 219) emphasize that with the evaluation methods of societal impact the processes in which knowledge has an impact on society should be focussed on far more, as only these would allow *“to identify how relevant research is conducted and the processes by which it is applied, or not”*. Understanding this in detail would also allow us to create a greater number of good impact conditions⁹, and therefore opportunities for societal stakeholders to access social science knowledge.

⁹ Robinson-Garcia et al. (2018) report an attempt to use *altmetrics* to perform the *“mapping the contexts of potential societal impact”*.

Cluster 3: Operationalization of societal impact

Given the previous explanations, it is not surprising that there is absolutely no agreement on the concept of operationalization either, i.e. the methodical approach to ascertaining societal impact. Put in simple terms, we see two major trends:

On one hand quantitative processes are described in the literature, which attempt to measure impact with the aid of **specific indicators**. The danger of a lack of coherency between what is to be measured and what will actually be measured by the indicators is referred to here in the literature (Barré, 2005)¹⁰. As we will later argue in detail, there is confusion between visibility and impact here in many cases. While it is potentially possible to measure visibility with quantitative indicators (*altmetrics* are such a method¹¹), this has not yet been convincingly possible for impact.

On the other hand a multitude of often experimental **qualitative processes**, that attempt to measure impact are also described in the literature. These approaches more or less assume that purely quantitative processes for measuring *societal impact* cannot be effectively used for the social sciences. Reale and co-authors (2017, 5) describe this in a nutshell with the following statement: “*because shortcomings affect the use of indicators, successful practices for assessing Impact are generally considered to be those that combine or integrate narratives with relevant qualitative and complementary quantitative indicators to grasp the multidimensional and contextual nature of complex societal phenomena.*” A basic set of methods is used within the qualitative methods: Case studies, qualitative interviews with researchers involved and users of the knowledge, document analyses, as well as qualitative network analysis. A *mixed method* approach is chosen with the different studies. Depending on the principals, issue, definition and goal of the measurement of societal impact, ultimately very different processes tailored to the case are used¹².

A review of the literature therefore clearly shows that the approaches and methods for measuring societal impact are highly fragmented and we currently find a number of more or less experimental methods, which all have limits and generally entail high costs. There are no more broadly accepted methods that would comprehensively satisfy the measurement of societal impact. Measurements of societal impact therefore require a precise understanding of the case-specific details and in this sense it is not possible either to identify one method that would be better than any others.

In this context it is especially important to keep the terms currently in use – **visibility, relevance and impact** – **carefully separated from one another**. While visibility is the clearest and focuses on an explicit

¹⁰ In their study, Gumpfenberger et al. (2016) refer to the developments of the publication output in the area of social and intellectual sciences at the University of Vienna to the importance of increasing the visibility of research. Reference is made here to the importance of social media and to the various efforts to develop alternative metrics, which better determine the research performance of the social and intellectual sciences. At the same time, however, they also emphasise that “*while these new approaches might not be appropriate for impact measurement, they will certainly enhance visibility, which is of major importance for the humanities and the social sciences*”.

¹¹ For a detailed discussion of *altmetric* approaches in relation to impact and visibility, see Ràfols et al., 2017; Wilsdon et al., 2017; Robinson-Garcia et al., 2018.

¹² As an example for a *mixed method* approach, we might look at the *Payback Framework*, which is based on an extensive modelling of the research process, as well as a series of categories that record the “payback” to various stakeholders (Donovan and Hanney, 2011). Klautzer et al. (2011) have applied this approach, for example, to examine policy changes caused by social science knowledge. This clarifies the strengths and weaknesses of the approach and the importance of adjusting methods to the situation to be measured.

Another example would be the SIAMPI (*Social Impact Assessment Methods for research and funding instruments through the study of ‘Productive Interactions’ between science and society*) approach, with which the observation of productive interactions between researchers and stakeholders is the centre of focus (Spaapen and van Drooge, 2011). For further applications, see de Jong et al. (2014) as well as Molas-Gallert and Tong (2011).

For the use of a qualitative network analysis, see Oancea et al. (2017).

perception of the knowledge and the researcher by societal stakeholders, both relevance and impact are significantly more difficult to determine. Relevance refers to the identification of social interest and problem situations, to which research should then be related. Impact on the other hand is a verifiable change caused by knowledge. In our perception, these terms in the literature do, however, become extremely vague and are sometimes used synonymously, which presents a fundamental problem. In chapter 4.2.2 we will therefore examine these distinctions from our empirical observations in the field even more explicitly (see also, fig. 4.).

3.3. ATTEMPTS TO MEASURE THE SOCIETAL IMPACT IN DIFFERENT NATIONAL EVALUATION SYSTEMS

We will address the question of how societal impact is handled in the context of evaluations using the example of the UK and the Netherlands, which have raised it again and again in discussions¹³. While the literature on societal impact reports time and again about experimental attempts to measure impact with indicators, we can see that as part of current formal evaluation processes, qualitative and broadly applied approaches to the question of the impact of research are chosen. In 2010, a report by a European Commission group of experts (EC, 2010) showed that only very few countries or individual institutions experiment with the measurement of societal impact, whereby there are entirely different approaches (see also the study by Technopolis¹⁴ from 2014). This tallies with the debates in the relevant research literature and still applies today – there are still no truly standardised procedures or indicators for the evaluation of this dimension in the international context. It is therefore all the more relevant to get to grips with the specifics and differences of individual national approaches.

UK — Societal Impact within the *Research Excellence Framework*

The *Research Assessment Exercises (RAE)*¹⁵ were introduced in the UK in 1986. They are held at regular intervals and form the basis for the distribution of funds in the higher education sector. It is a nationwide initiative to evaluate the quality of research at British higher education institutions. In 2014 these evaluations were renamed as the *Research Excellence Framework (REF)*, which was accompanied by a series of significant changes, which are especially important for the question of the societal impact of the social sciences in particular. For the first time as part of the REF 2014, in addition to the quality of the research, the broader societal impact of research and the vitality of the research environment were also integrated into the evaluation¹⁶.

Universities are called upon to submit REF articles with one of 36 specialist areas, which are referred to as "Units of Assessment (UOA)". This decision is not easy in any sense of the word, especially when interdisciplinary units have to decide which UOA their evaluation should be made in. The REF submissions are then evaluated by the sub-panel of experts of the respective UOA. These 36 UAOs are also summarised in four broader expertise panels. The societal impact was weighted with 20% of the total evaluation for 2014 and is therefore entirely significant for the financing of the universities.

¹³ The Australian version of the evaluation of *impact* is also discussed time and again in the literature; see Donovan (2008). For a study on Italy, see Bonaccoris (2018). A blog post which considers the Canadian situation: Severinson (2018).

¹⁴ Technopolis. (2014). *Measuring scientific performance for improved policy making*. [www.europarl.europa.eu/RegData/etudes/etudes/etudes/join/2014/527383/IPOL-JOIN_ET\(2014\)527383\(SUM01\)_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/etudes/join/2014/527383/IPOL-JOIN_ET(2014)527383(SUM01)_EN.pdf). Published for the European Parliamentary Research Service.

¹⁵ For a brief description of the developments in this area, see <https://www.ref.ac.uk/2014/about/background/>.

¹⁶ Many of the case studies named in chapter 3.2 also refer to REF 2014. For an extensive study on the impact of social sciences in the UK, see Bastow et al. (2014).

In this system, the societal impact is recorded with two types of documents: (1) With aptly-named *impact case studies* and (2) with *impact templates* (see fig. 2), which describe in detail how societal impact is institutionally supported and enabled.

Impact case studies: Each university is obliged to submit a selection of case studies for evaluation in the REF, whereby the required number correlates with the number of people (varies from at least two case studies with very small units up to six or more impact *cases*, depending on the full-time equivalent researchers). An impact case study is a four-page document that describes the influence of the research in a specific context in detail and highlights it with appropriate evidence. “Impact” is defined here relatively strictly as a truly recognisable and documentable change. It is therefore about a **narrative account of the societal impact**, which is subsequently evaluated by panels. These panels do not consist of academic stakeholders alone, but rather also include societal stakeholders.

The structure of the *impact case studies* is **highly pre-standardised** and includes the following components (for which word counts are also specified): Summary of the impact; basic research; references to the research; details on the *impact*; sources that confirm the impact. While the details for this report are not key, it is nonetheless interesting to take a look at the components of the *impact case studies* and their sequences. This is about a **linear narrative**: good research is first done in the academic system, impact is then produced in additional downstream processes. With regard to the time horizon, it is constantly emphasised how important it is to choose the time horizon of the impact case studies appropriately long, as it can now take a very long time until knowledge also finds its way into social correlations. In the REF 2014 case studies that described impact between 2008 and 2013 were approved; the underlying research could, however, be further back in the time horizon.

Institution:
Unit of Assessment:
Title of case study:
1. Summary of the impact (indicative maximum 100 words)
2. Underpinning research (indicative maximum 500 words)
3. References to the research (indicative maximum of six references)
4. Details of the impact (indicative maximum 750 words)
5. Sources to corroborate the impact (indicative maximum of 10 references)

Institution:
Unit of Assessment:
a. Context
b. Approach to impact
c. Strategy and plans
d. Relationship to case studies

Fig. 2. Forms of *impact case studies* and *impact templates* used in the REF 2014

The *impact templates* supplement the impact cases and explain the approach of the unit submitted to support and enable the impact of the research performed. This information should enable a more holistic and more context-related evaluation of the impact than would be possible from case studies alone. The structure of this description is also highly pre-standardised (see fig. 2.) and always consists of (1) the context for the individual case studies, (2) an explanation of the broader approach of the evaluated unit in conjunction with impact (going beyond the scope of the individual case), as well as (3)

a description of the broader strategy and the plans of how impact is supported and ends (4) with explanations on the relationship between this further impact support framework and the respective case study.

The REF 2014 has since been evaluated by RAND¹⁷. In addition to thoroughly positive facets that the *societal impact case studies* bring them with, the following problem areas are also referenced here:

- The costs of production are estimated at approx. £7,500 per impact case study and £4,500 per impact template¹⁸.
- The provision of evidence for the societal impact proves sometimes to be very difficult.
- There is no clear common understanding among researchers of what impact really means; it should be added here that this applies to both the researchers and the evaluators (Samuel and Derrick, 2015).
- The impact case studies in no way represent the breadth of the impact of any unit to be evaluated.

One of the experts from the UK that we interviewed said there had been attempts on the basis of a lexical analysis of the submitted case studies to develop a more uniform indicator system for impact. This attempt failed, however, because of the high heterogeneity of the case studies and their definition of impact.

“The conclusion was that the pathways to impact in those case studies were so diverse that moving to an indicator-based approach would almost inevitably force things into unhelpful, narrow categories. [...] An effort to sort of protect and defend diversity [...] led to that conclusion. And I think the related aspect is that while there has been, of course, a lot of activity with respect to metrics for Impact in general, particularly, you know, altmetrics as a field, most of those are not really measuring Impact in the REF sense.”

At the end of this quote the expert said that most existing indicators, in the *altmetrics* area, for example, would not measure impact in the sense of an actually verifiable change in society (REF definition). They would in fact measure the precondition of impact far more, such as the social visibility of research in new media, for example.

“Most of the metrics we have are really measures of attention and dissemination, if you think about all the altmetrics linked to Social Media; and, and there’s really very poor correlation or very poor evidence about their links between attention relations and traceable change in the world.”

The Netherlands — Societal impact in the evaluation protocol

The three most important Dutch organisations that are responsible for public sector-financed research — the universities, the *Royal Netherlands Academy of Arts and Sciences* (KNAW) and the *Netherlands Organisation for Scientific Research* (KNAW) — specified a **protocol for future evaluations of research** in

¹⁷ For an overview of the evaluation, see <https://www.rand.org/randeurope/research/projects/hefce-ref2014-impact.html>. The two evaluation reports: Manville et al. (2015) Preparing *Impact* submissions for REF 2014: An evaluation: Findings and observations. HEFCE (Higher Education Funding Council for England). https://www.rand.org/pubs/research_reports/RR727.html and see Manville et al. (2015) Preparing *Impact* submissions for REF 2014: An evaluation: Approach and evidence. HEFCE (Higher Education Funding Council for England). https://www.rand.org/pubs/research_reports/RR726.html

¹⁸ Ben Martin (2011) brings up the question of the cost-benefit analysis in an article on the REF as follows: “Yet if the ‘costs’ of an elaborate system for assessing ‘research excellence’ and its impact then exceed the benefits, the time may have come to re-examine whether a dual-support system still represents the optimum way of funding university research”.

2003. In this evaluation system every public sector-financed research unit is evaluated every six years. The research units compile a self-evaluation every three years, which serves alternately as preparation for the external evaluation and as internal half-time evaluation. The evaluation protocol is also revised regularly and changes and adjustments have since been made constantly.

The (self) evaluation is performed with a matrix¹⁹, which on one hand identifies two major quality areas — research and social relevance — and on the other hand consists of three evaluation dimensions — output, use of the output and recognition (see fig. 3.).

As part of the self-evaluation the actual research unit to be evaluated can essentially choose the indicators that are entered in this matrix, in agreement with their profile. It must, however, also be considered here that the decision of the research unit must be compatible with the agreement with the university in the respective research area, and this in turn must be in harmony with the framework conditions defined by VSNU. There are also proposals for possible performance indicators for the area of social sciences and humanities (see self-evaluation matrix); these must, however, under no circumstances be considered binding. It must in particular also be noted that “output” explicitly **does not only include countable output**, so, does not amount to a narrow quantitative definition of the measurement of research performance.

		Quality Domains	
		Research quality	Relevance to society
Assessment Dimensions	Demonstrable products	Research products for peers (e.g. articles in scientific journals)	Research products for societal target groups (e.g. reports for stakeholders, public lectures)
	Demonstrable use of products	Use of research products by peers (e.g. citation)	Use of research products by societal groups (e.g. patents, cooperation projects)
	Demonstrable marks of recognition	Marks of recognition by peers (e.g. science awards, research grants)	Marks of recognition by societal actors (e.g. membership in civil society advisory bodies)

Fig. 3. Self-evaluation matrix (Netherlands, Standard Evaluation Protocol 2015-2021)

Finally, this tabular illustration of performances, their quality and impact must also be given a **narrative part**. The purpose of this narrative is to explain the relevance of the work of the research unit for society and to position it in a greater context. This text is then supported by indicators from the tabular illustration. One expert describes this as follows:

“So the narrative is the main entrance of the assessment and everything else is only support, so to speak. So we are trying to move away from what you might expect that might happen: a counting exercise.”

¹⁹ For the most recent version of the Standard Evaluation Protocol 2015 – 2021 for the Netherlands, see https://www.knaw.nl/en/news/publications/standard-evaluation-protocol-2015-2013-2021?set_language=en; the interviews also confirmed this approach in practice.

Such narratives have about 3-5 pages and demonstrate the relevance, impact or value creation of the scientific work of the research unit for society during the evaluation period, possibly also in the near future. They describe research projects, people involved and their role, argue the relevance, refer to impact, describe how these were achieved, whether these are located on regional, national or international level and whether or not possible economic value creation has been generated. On the whole the period of the description is flexible, as the impact of research activity that is before the evaluation period can also be reported on. This reveals that the relevance of a specific research activity for society can only become clear years after the end of the research activity. **The objective of the narrative is to work out the most convincing examples of relevance, impact or added value of the research activities for society.**

It is important to note that the expert interviews show clearly that the question about the societal impact and the relevance of research is actually asked, the performances are determined and described in detail and also flow into the evaluation at general level, but that there is no clearly defined connection with the allocation of funds. Unlike the British example, the illustration of the interaction with society is applied considerably wider here and not only oriented on a few “success stories”. And nor is any portion of the budget linked with the performances in this area.

3.4. ADDITIONAL CHALLENGES

Via the aspects already addressed, the expert interviews revealed two more challenges, which must also be considered in the discussion on the societal impact of the social sciences.

Impact is frequently thought of as a linear process

Although there has been a discussion on the complexity of impact for some time now (see chapters 3.1 and 3.2.), the experts say they are confronted again and again with very simple and linear notions of how impact is produced. One expert describes from experience how he is met time and again with a linear “sales logic” in the narratives of researchers when thinking about impact:

“Well, you know, first you do high quality research and you get that published; and he said that’s like, you’re getting the product right and then you, you know, can go out in public and share your ideas, that’s like selling he said.”

It becomes clear here that, as before, it is assumed that it is enough to simply provide knowledge and not interact with societal stakeholders. At the same time, the responsibility is passed on to society here: The “product” is delivered and the societal stakeholders are now required to “make something out of it”.

This is also very closely connected with the continuing widespread opinion within institutions that research can differ between basic and applied research. One expert comments here as follows:

“I don’t think it’s a culture which is encouraging [... One] quickly gets trapped in this: are you talking basic free research or are you talking about applied research? And as soon as you formulate it in that way, you know, you’ve got an intellectual hierarchy, very obviously; and the smart thinkers want to do the free research.”

Furthermore, according to one result of the expert interviews, due to the underlying assumption of a linear transfer process in society, the role of societal stakeholders is often afforded very little attention in the transfer process. One expert, for example, criticised that it is often wrongly assumed that the

researcher is the key figure from whom *“a kind of mysterious influence goes out into the world, which then equally mysteriously changes the minds and hearts and actions and practices of, of policy makers or agencies. [...] that’s not how it works.”*

This quote also emphasises that in the discussion about societal impact the production context in the academic environment was often focused on too much or even exclusively. The processes in which knowledge is actually drawn on by societal stakeholders and in which it has an impact are not given sufficient attention in researching impact and in attempts to measure it²⁰ — which is also confirmed as the result of our literature overview. Starting here and better understanding these exchange processes would certainly be a worthy endeavour, particularly when the objective is to increase the impact of social science knowledge in society.

Adaptation effects due to indicators

The interviewed experts point to a broad general debate on the use of indicators in measuring and documenting quality in research. In this context it appears essential to refer to the explanations on *“responsible metrics”* (Wilsdon et al., 2017), which can be found in the wider context of the European debates on *“Responsible Research and Innovation (RRI)”*. The following dimensions must in particular be considered here when creating quantitative indicators (Wilsdon et al., 2015, x):

1. ***Robustness***: basing metrics on the best possible data in terms of accuracy and scope;
2. ***Humility***: recognising that quantitative evaluation should support – but not supplant – qualitative, expert assessment;
3. ***Transparency***: keeping data collection and analytical processes open and transparent, so that those being evaluated can test and verify the results;
4. ***Diversity***: accounting for variation by field, and using a range of indicators to reflect and support a plurality of research and researcher career paths across the system;
5. ***Reflexivity***: recognising and anticipating the systemic and potential effects of indicators, and updating them in response.

The last point on reflexivity in particular is also strongly emphasised in the international literature (Espeland and Sauder, 2007; Fochler and De Rijcke, 2017, De Rijcke et al., 2016). As indicators often measure the activities of researchers and the result of the measurement is connected with success or failure in competition contexts, researchers will try to adjust the presentation of their activities or the activity itself to the indicators used. This can result in **desired effects** when, for example, researchers focus more on the societal impact of their own research, because it plays a role in indicator systems. One interviewed expert consequently said that academic researchers must first also learn and practice how to recognise and describe *impact*, and that reflecting on and describing *impact cases* also produces very positive effects in the self-awareness of one’s own research and higher awareness with regard to social responsibility. However, this also means investing time and energy in this pursuit. A British expert describes this as follows:

“So [the department] started two years ago already, identifying people, who potentially have impact cases and they had training courses, how to enhance their impact and how to write an impact case. And the first iteration is that you just put it on paper, the three steps: that’s my publication, that’s what it did, and this is the evidence. And then over three, four, five years you start to build that story, but the whole story is not very long.”

²⁰ For this, see also the opposite approach of the Oslo Institute for Research on the Impact of Science (OSIRIS), <https://www.sv.uio.no/tik/english/research/projects/osiris/>

Researchers with good potential *impact case studies* sometimes also receive some financial support for additional work or are advised how they should follow and document how their work is received so that they then also have sufficient documentation in case they are selected as a *case study*. This also involves a perceived necessity to market one's own research more intensively: *"So, dissemination, nobody tells you: you have to go on Twitter, you have to go on Facebook; but it's expected now, that you disseminate. [...] this is called dissemination, I think it's actually much more, you promote your own work."* Another expert formulated this a little differently: *"Self-promotion is now a requirement for a successful career, within the REF orbit."*

While we see a certain ambivalence in these statements, **negative effects** are also explicitly addressed, especially when stakeholders try to strategically improve their positioning with regard to specific indicators. There are therefore discussions, for example, about the fact that certain *altmetrics* indicators, such as the number of tweets, which refer to one person or one article, can be strategically manipulated with rather little effort.

From a system point of view a too rigid introduction of measurement systems for *societal impact* also produces strong adjustment phenomena, that do not necessarily support a positive development of the science system. For the British system of impact cases in particular it is emphasized again and again that this form of incentives also results in negative developments. One interviewee aptly described this as an "impact industry" that is set up here.

"It's probably not an exaggeration to say that it's an industry now, that focusses on writing Impact cases for universities, helping people to write Impact cases. Universities are putting money into departments to help people to enhance their Impact, meaning that you would actually write to people and say: please let me know what you did with my research, because it was so great, wasn't it? And then you get letters back and so it, it has become an art of [...] constructing, not forging in most cases, but constructing a story about something."

Another interviewee repeatedly described it as *"stretching the truth"*.

Generally speaking, the literature also describes that the measurement of *impact* also creates a tendency to focus on those interactions and processes that might deliver a clearly documentable *impact*. Broadly speaking, Ernø-Kjølhede and Hansson (2011, 136) emphasise that *"the obvious danger is that researchers and universities intensify their efforts to participate in activities that can be directly documented rather than activities that are harder to document but in reality may be more useful to society"*.

4. SOCIETAL IMPACTS OF SOCIAL SCIENCES — RESULTS FROM THE INTERVIEWS IN AUSTRIA

This chapter will present the results of our analysis of the interviews with researchers from the areas of communication science, political science and sociology in three parts. The first part is about tracing the different pathways of knowledge into society and argues that indicators must consider this diversity. The second part is then dedicated to the diversity of understandings of societal impact. The third part is about the framework conditions for societal impact, so about the institutional requirements, the relation of quality to impact, as well as the funding conditions for socially-relevant social sciences. Together with the key lines taken in the international debates illustrated in chapter three, the explanations in this chapter then form the basis for the considerations on indicators for societal impact, which is explained in chapter five

4.1. CATEGORISATION OF THE MULTIPLE PATHWAYS OF SOCIAL SCIENCE KNOWLEDGE INTO SOCIETY

In this section the following question is the focus of the analysis:

What pathways of social science knowledge to society are identified by the interviewed researchers?

It is essential to discuss this question, as the search for possible indicators needs to acknowledge the diversity of interactions with society, whereby both direct and indirect pathways were interesting for us²¹. This categorisation is one result of the interviews and shows clearly the understanding of university researchers of how their knowledge finds its way into society, and how social concerns play a role in their research. Generally speaking all researchers we interviewed can argue convincingly, using examples, that both their own knowledge and social science knowledge in general have multiple pathways to society and impact societal developments in very diverse ways. Several interviewees criticise in this context that the social sciences in this regard are often said to need to catch-up compared with other science areas. They consider this assumption unfounded; yet it generates the pressure to justify this kind of research.

Our material allows the following **categorisation of the pathways of social science knowledge to society**:

4.1.1. PRESENCE IN TRADITIONAL AND NEW MEDIA (BLOGS, TWITTER, ETC.)

All interviewees say they receive enquiries from journalists regularly and, depending on the time they have, they answer these enquiries in what are usually shorter or longer interviews. They believe these are an important part of the public role of social scientists. However, many also emphasise that, depending on the logic of the media, often only an extremely small and shortened part of their statements is taken up.

“Journalists always only take a fraction of what you say. We do an hour-long interview and at the end it’s no more than a sound bite.” (cs2²²)

Numerous scientists from different fields point out this problem. However, the social sciences are faced with the challenge that there are few to no concrete ideas on the part of societal actors about the social science working methods and processes of knowledge production. Too much of a reduction in content entails the risk that the recipient can often scarcely differentiate between social science knowledge and available everyday knowledge. This in particular applies for qualitative social sciences, as they cannot base their statements on quantitative indicators that are culturally perceived as objective and therefore qualify as trustworthy (Porter 1995).

Journalists would often also tend to expect the confirmation and expression of an already preconceived standpoint rather than being interested in the scientific opinion of the interview partner.

“[T]here are periods were someone calls three times a day [...] people who are doing an article and who then suddenly need a direct quote, yeah, in three sentences. And they know very well, or pretty well, [...]”

²¹ Direct pathways describe the interaction with the intended groups of people; indirect pathways describe the unintended reception of social science knowledge by societal stakeholders (see also Upton et al., 2014).

²² Explanation of abbreviations: *cs*: Communication Science, *ps*: Political Science, *soc*: Sociology. The number is for assignment in the interviews’ database.

what they actually want and they want you to deliver it, shall we say. I don't do that anymore, you know?" (ps2)

This is also closely connected with the fact that those asked consistently report that the majority of media inquiries do not relate to topics in which they themselves actively do research. More to the point it is mostly about topics, to which their scientific discipline has contributed something in the broader sense. One interviewee said how they describe their role in such cases to journalists: *"I don't do any specific research in the area that I could offer you. I can say something based on the knowledge in our field more broadly speaking."* (cs1) As part of the further elaborations the interviewee then also emphasises that, on the basis of his/her *"scientific-analytical approach"* allows approach these topics. But this would not be about the scientific knowledge that they actually produced themselves. The knowledge content itself is therefore not the priority in the media communication in the area of the social sciences, but rather the focus is on the role of the scientist as an expert. Most interviewees do not see this *a priori* as a problem. However, a specific problem of the social sciences is the fact that it would then be difficult to specify the societal topics where a person's scientific expertise actually ends.

"... and then of course there is the problem with the social sciences that it is very, very difficult to delimit what is still science from what is somehow in the area of statements made as a citizen or some other kind of statement, you know?" (soc4)

It would therefore also be difficult to determine whether a person is talking as a researcher with a scientific background or is expressing their opinion as a member of the general public. This therefore also poses the question as to how much the media presence can be used as an indicator for the impact of social science knowledge.

Ultimately, for example, it is emphasized for the political sciences that, *"there is a very strong disparity"* with regard to geographic distribution and the frequency of the media presence, *"with very few, which have a very high media presence"* (ps5). This refers to the importance of networks, which does not necessarily correlate clearly with the research performance or its social relevance.

Surprisingly the interviewees rarely named new media such as Twitter or Internet blogs as pathways of their knowledge to society. When they were named, they were basically seen similar to the traditional media with regard to their logic and their effects, as in this quote by a communication scientist:

"Communication science publishes in the media that we also research. Be it the traditional channels of radio and TV or the new methods as blogs or posts." (cs3)

More specifically, blog posts were seen as a further type of written publication, which are oriented towards specific target groups (see 4.1.2). Some interviewees saw Twitter as a medium that can actually increase one's visibility. However – and similarly to the traditional media –, due to the brevity of the messages it is hardly possible to truly communicate the content of the research.

In summary we can therefore say that interaction with the media was identified as the most frequent form of interaction with society. All other forms of interaction with societal stakeholders are distributed unevenly across our interviewees, depending on the area the research is based in and on the discipline in question. At the same time, it is also pointed out that media work can take on very different forms, be performed for very different reasons and that access to media is distributed very unevenly, so that a quantitative recording of media presence can hardly be used as a benchmark for impact.

4.1.2. PUBLICATIONS (BOOKS, ARTICLES) FOR SPECIFIC TARGET GROUPS

Some interviewees said that they write research related articles for specific target groups (e.g. professional groups for whom a topic is relevant). With regard to other pathways that the interviewees see for their knowledge to society, this form of communication has relatively low significance. One interviewee explained explicitly why this is the case:

“I think this is always a bit difficult because it takes time and is simply too far away from what we usually publish. If you actually want to publish Q1 [in top-quality scientific journals, note], then the question is always, can you still really afford to do this?”(soc2)

A specific exception in this context are books that are written in German and are oriented towards both a scientific and a broader educated readership. One researcher interviewed said that writing such books is key for both a scientific and a societal impact of one’s own research. Others said they also write policy briefs for specific readers in administration or civil society. The impact these types of communication could then specifically have in the respective areas are, however, considered very difficult to understand.

4.1.3. PRESENTATIONS/WORKSHOPS FOR GENERAL/SPECIFIC TARGET GROUPS

Presentations that aim for broader publics only play a limited role in the answers of the researchers interviewed, and when they do, then mostly in conjunction with the publication and the distribution of corresponding papers. Lectures for more specific interest groups are, for most interviewees, an important part of their influence in society. Interactive formats such as workshops or training courses that go beyond the scope of the purely linear presentation are also offered. On one hand these can be used to give back knowledge acquired in a project to the researched groups and to validate it interactively. On the other hand, workshop-type formats also allow the researchers to have closer contact with target groups. A considerable number of interviewees also say this is very important for their actual scientific work.

“This is the gateway to social reality; I lose contact with reality when I have nothing to do with those who actually have to deal with topics that I work on academically. So that’s why it’s rewarding, I think, even if we are now only talking about one presentation, if I take the time to consider what might interest people and then realize in the discussion: was I capable to anticipate [what people care for], or am I miles off course? And there are actually very different topics here, or there might be, I don’t know, critical points that I wouldn’t have considered to be particularly critical, or the like. I think this is really important.” (soc2)

4.1.4. WORK ON SOCIETALLY-RELEVANT ADVISORY BOARDS

A considerable amount of the interviewees named the advising and accompanying of stakeholders in advisory boards of associations, but also in committees that accompany political-administrative processes, as an important pathway for social science knowledge to society.

“That might also be the case when you’re in an association’s advisory board. I think this is a very important measurable indicator for the impact, isn’t it? Because when associations, a Viennese authority or the ministry, approach us and say: ‘We want you to also advise us in the process’, let’s say, of some

guideline or other [...], that is good of course; [...] it then means that the expertise that we have acquired is also recognized and will also have an impact via the person we consult.” (soc3)

Often, however, these activities are not very visible both within the university and in the outside world. Sometimes the researchers would not even actively make them visible on purpose, as there is still the impression that the university as an institution would not really appreciate this activity. One interviewee stressed that the actual interactivity of such advisory boards varies greatly from case to case and becoming used as a scientific “fig leaf” must be avoided.

“In my experience, on one hand there actually are advisory boards that essentially are such fig leaf advisory boards [...] They would indeed like to have big names on the board and people that have experience with the topic. But content-wise they actually are not really interested in it, but rather would simply like to get it done as quickly as possible. And then there are however also the advisory boards that really convene where we actually also work on content, so also with colleagues from the most diverse disciplines.” (soc2)

4.1.5. DIFFERENT FORMS OF POLICY CONSULTATION

Policy consultation as an explicit category played a more subordinate role in most of the interviews. A number of interviewees describe the consultation of political stakeholders in the broader sense, especially in the area of administration – e.g. at ministry level –, as an activity performed as part of the already named categories (advisory boards, for example) or in part within the scope of collaborative research (see section 4.1.6).

A number of interviewees, however, differentiate quite clearly between consulting of stakeholders that are part of political implementation processes as part of administration, and the consulting of political stakeholders in the narrower sense of political parties or individual politicians. In the latter area in particular many interview partners see the danger of the instrumentalization of university research and therefore tend to be rather reticent (see 4.2.4).

4.1.6. COLLABORATIVE RESEARCH WITH SOCIETAL STAKEHOLDERS

For a considerable number of interviewees, direct contact with societal stakeholders as part of the research process itself is an important pathway through which social science impacts society.

“So our subject matter is precisely the way the communication happens, and when you carry out such a research project, then you are in a constant exchange process with the object that you are researching. That is then, the discussions we have had or the participatory observation of the methods we have also always applied [...]. So this goes far beyond what we write and publish. It is actually a process of give and take, where we discuss with those affected and with those being communicated with and cooperate very, very closely with them. At the end this results in a research project or a research report, which is then published and is then also passed back again, and is actually a different story.” (cs3)

In addition to the ongoing interaction with the researched subjects as part of the process, a number of interviewees said that the passing back and discussing of research results are of key importance for their approach to the research.

“[...] as regards the impact it seems to me the relevant thing is not really that a result is running around somewhere (as a number, a date or a quote), but rather that there are occasions when we also work through these results together, and also interpret and determine their importance together.” (soc3)

Interviewees who work interactively with societal stakeholders describe the impact of their research as being especially strong in the context of long-standing relationship networks with societal stakeholders, who are also already participating in the problem formulation at the beginning of a research process.

“So there are obligations, as it were, obligations in the sense of a specific commitment, where we simply also process something together. And the [...] impact is already there – so at the beginning, let’s say, and not just at the end. [...] Research then becomes far more of a process, rather than simply product-oriented”. (soc3)

At the same time, we know that the time required for interdisciplinary and transdisciplinary research often does not flow into the evaluation contexts and there are therefore no appropriate incentives to engage with this form of knowledge either (Felt et al., 2016; Felt et al., 2013).

4.1.7. UNIVERSITY TEACHING AS PATHWAY INTO SOCIETY

As the last category it should not go unmentioned that a number of interviewees addressed university teaching and the work with students as one of the most important ways to bring their knowledge into society. This impact does not take place in the lecture room alone, but rather and in particular later on with the students as disseminators in their respective social environment. One sociologist, for example, said their knowledge also and in particular impacts on,

“the students and their disseminator effect if you want it to, in the family structures as well, yes, in their own families or their extended group of friends. They definitely are the most important contact partners for absorbing and critically reflecting on this knowledge that we have to offer, the problem-solution suggestions that we have, the social interpretative patterns that we offer and for them to contribute their part themselves.” (soc5)

With evaluations the number of graduations is indeed often queried, but this is rarely seen in conjunction with societal impact. In this context, it would be essential to also ask about the types of teaching and learning and how this contributes to an in-depth understanding of the relationship between science and society.

4.1.8. DO THE PATHS INTO SOCIETY DIFFER ACCORDING TO THE DISCIPLINES OR RESEARCH AREAS?

In this study the paths on which researchers believe social science knowledge finds its way into society were exploratively examined in three disciplines: communication science, political science and sociology. If we compare the paths into society that the interviewees describe, in our sample we can see no systematic difference between the three disciplines. Practically no interviewee could name basic differences between these three social science areas with regard to their societal impact when asked our explicit question in this respect. Our interviewees believe the heterogeneity of approaches within the individual disciplines is far higher than the difference between the disciplines.

Within this heterogeneity our interview partners saw two main structuring factors: On one hand specific methodological and theoretical approaches, which suggest a specific relationship with society and

therefore specific types of proximity or distance of society to or from the research process. In the area of action research, for example, the integration of society is therefore far more direct than in areas that would in particular be dedicated to the further development (more abstract) of social science theories.

On the other hand the pathways into society are often different depending on the research area and topic, as societies also exhibit different structures and different stakeholder configurations in different areas, which are more or less ready to absorb scientific knowledge. The self-image of the researchers with regard to their relationship with the researched stakeholders differs according to the area. One political scientist working in the area of election research, for example, therefore explains that a critical distance from stakeholders in the researched area, such as from political parties in their field, is considered indispensable. Little is therefore known about if and, if yes, how the research results are received by the stakeholders. This is different in other areas of political science.

“Conversely, when I examine policy making, regardless of whether it is the labour market, healthcare policy, social policy, or whatever, then I am of course in another conflict situation with the institutions than is the case with us.” (ps1)

Examining the degree to which the paths into society and the basic viewpoint of the societal impact differ between various topical research areas and methodical/theoretical approaches within the social sciences is beyond the scope of this explorative study due to the size of the sample. The two factors named can however be used both as the basis for hypothesising and developing samples for subsequent research, as well as guiding science policy considerations.

4.2. DIVERSE UNDERSTANDINGS OF SOCIETAL IMPACT

In the following sections we describe the understanding of the interviewed researchers of how impact of social science knowledge arises, and if and how it can be measured. We begin in 4.2.1 with a discussion of the different models of how impact is produced in interaction with society. In section 4.2.2 we analyse the interpretations of our interviewees with regard to the two terms, relevance and visibility, as preconditions for the generation of impact. In 4.2.3 we discuss the considerations of the term impact itself and its measurability. 4.2.4 finally discusses the drawing of boundaries between science and society, which the interviewees consider relevant with regard to impact relations.

4.2.1. HOW DOES IMPACT OCCUR IN SOCIETY?

The assumptions on how social science knowledge moves into society in the answers by the scientists we asked can be arranged on a continuum, along which the interactivity of science with individual social groups increases.

At one end of this continuum we find the position that it is the responsibility of science to generate knowledge and provide it in a publicly accessible form, such as form of publications. Interested public parties could then collect this knowledge, whereby the researcher often has no idea of how and why the knowledge is accessed. The removal of access barriers to knowledge plays a key role for researchers that take this position.

“This means a lot of the knowledge that we generate is intended to be received, but cannot be, because people that are interested in it have no access to it – a major problem.” (cs1)

Somewhat further on the spectrum towards interactivity is a positioning that assumes that researchers actively do translation work, and communicate the knowledge that they have produced in basic research, as part of presentations and publications, for example, to societal stakeholders. This involves the translation of knowledge to fit a societal context; knowledge which has not been produced a priori with the goal to have societal impact. One professor of communication science argues that sufficient financing of basic research is therefore also very important for societal impact, and describes this process as follows:

“How can we finance what we research in our work, for our own basic research area let’s say – how can we finance it so that it can then also be made useful in a second stage, for societal relevance as it were.”(cs3)

At the most interactive end of the spectrum are some researchers that say that, in their case the actual process of knowledge generation has already happened in interaction with societal stakeholders. Research and impact happen in this type of research simultaneously and are process-oriented. The scientific issues, but also their societal relevance, are constantly negotiated throughout the research process in communication. *Impact* is generated here in the research process of the basic research itself, not in the provision or communication of a result worked out beforehand.

“But in my situation it is not so much that the focus is on the expertise – as the report, shall we say – but rather over a long period, actually a set-up of a network of relationships, via which, already when preparing topics, in formulating questions, in the development of research design, in the mediation of the results, in the discussion of the results, an entirely relevant social relationship structure is in place.” (soc3)

4.2.2. VISIBILITY AND RELEVANCE:

TWO PRECONDITIONS FOR IMPACT AND THEIR MEASURABILITY

In the literature on the impact of scientific knowledge in society the three terms, relevance, visibility and impact have a key role, but are often not clearly delineated from one another. We therefore asked the researchers in our study, what these terms mean for them in their research work and how the quality of the respective work can be made visible and measured. A very different picture emerges here for the three terms, as described in the following (see also fig. 4).

Societal visibility

There was a fairly high degree of consensus among respondents when it came to defining the concept of visibility. Visibility is generally understood as being perceived by stakeholders in society as experts who generate knowledge on a specific topic. The term visibility can refer here to both the actual researcher, to a project or team or to the knowledge itself.

The interviewees agreed that visibility is often a precondition for societal impact. At the same time, it is also extremely important not to confuse visibility with relevance or impact. One professor of sociology expressed this as follows:

“I have been doing research on this topic for 15 years now and I know that the stakeholders know that I do it, so it is visible in the sense that, ... I think so ... yes, if you are in an area for long enough, and Austria is very small, then people know that something is going on and take a look at it. But visibility is not

relevance and nor is it impact. [...] It simply means that something is acknowledged. That's a very low threshold, I think, this notion." (soc5)

Some interviewees in particular said they were sceptical about the further impact of visibility in the mass media. Communication science experts said that the effects of media presence of scientific experts and of the communicated knowledge has so far not been researched extensively. Others appeared sceptical, especially about the sustainability of this form of communication of social science knowledge.

"So the impact is not necessarily a media impact. I have now become rather sceptical about this media impact, because it loses steam incredibly quickly – e.g. a newspaper article is already forgotten tomorrow [...]." (soc3)

A number of interviewees point to the fact that the researcher as a person often receives the media attention rather than the knowledge is and underline that this is an additional problem of visibility as an indicator for a possible impact of knowledge in society. However, the inquiries of the media in most cases would not address the person's current research, but rather a current societal topic, to which they can contribute from some more broadly-based professional expertise.

Some interviewees expressed a concern that the media often only wanted to "pick up" a specific statement already envisioned beforehand by them. This reduction to a simple "original quote" means the communication of more complex correlations is mostly no longer possible. With visibility it is therefore not so much about the quantity of media presences, but rather more about the quality that allows actual content from research to be communicated.

Some interviewees, who work in sensitive social areas, also indicate that the media visibility of a research process is not desirable in all phases. In delicate areas in particular, the intensification of media attention on the topic can also have very negative effects for the actual research processes.

With regard to the measurability of the visibility of a scientist, the interviewees agree that this is possible rather easily via existing indicators and measurement infrastructures. The media presence of scientists is recorded regularly as part of the documentation systems of the universities. Altmetrics, especially the presence in social media such as Twitter, are seen as indicators for visibility. Similar to the presence in traditional media, however, the interviewees also said they were sceptical about the degree to which this form of visibility actually results in further societal impact. It is important to handle visibility and impact clearly separated as categories, but at the same time to better understand the relationship between them.

Societal relevance

In contrast to the term "visibility", most of interviewees found it difficult to clearly define the term "relevance" per se and for their work. The meanings of the relevance term that the different interviewees named were also very heterogeneous. Some said they believed social science research was a priori socially relevant due to its subject matter. It therefore makes no sense to talk about more relevant or less relevant research or to want to measure the relevance of individual research efforts.

"Everything our colleagues do is just as relevant as what I do. I don't see any gradation here. You can't say: 'Your research is more relevant than mine' – no, that is, we are all anchored in social sciences, we have one very clear socio-theoretical background and it plays a role here in different contexts [...], that

is actually it for me – it is relevant for different social sub-areas. That actually is the basic requirement for me, for social science research. We don't investigate anything that isn't relevant.” (cs2)

The majority of interviewees did, however, differentiate between research that is more relevant for societal issues than others. One communication scientist, said it was very important to differentiate clearly here between social and scientific relevance. It was also seen as extremely important to support those research areas that currently have fewer social reference points, but are all the more scientifically relevant.

“This happens in all sciences and is also the topic, that is to say, it is due to scientific character of our work [...] that we shouldn't simply address topics that also generate impact; rather it is also our task to work on topics that we as scientists consider to be relevant – of which, however, we know that they are less important for society.” (cs3)

In all of its different meanings the term “relevance” expresses a potentiality, in the sense of potential to contribute to current social discussions and problems and/or bring benefits for specific societal stakeholders.

“I mean, just off the cuff, I would say relevance is the issue: Is what I do important for anyone out there in society? [...] Does anyone benefit from it? Or is it simply an academic consideration, which is fantastic if someone thinks about it theoretically, but remains without relevance for what actually plays out in real life. [...] Whereby of course it is always questionable where the differentiation is – where does real life begin, and so on.” (soc2)

What is important for society can be justified here in the answers of the interviewees from out of two basically different contexts. On one hand this can emerge from the definition of societal stakeholders, when, for example, social science research is entangled with the *grand challenges* currently discussed in the political arena, or when the relevance of some research work results from its contribution to currently perceived problems of social groups.

On the other hand, a number of the interviewees also claim for social sciences the power of defining which forms of knowledge are relevant to a society. This is in particular emphasized by interviewees that believe a critical attitude is key for a useful relationship of the social sciences with society. Unlike the first type of relevance construction, which essentially delegates the attribution of meaning to society and therefore indirectly also accepts existing power structures, a critical perspective is about questioning existing hegemonic structures and pointing to alternatives.

The interviewees believe research that formulates relevance from a critical perspective will, however, be more difficult for societal stakeholders to take into consideration. Some, however, combine both forms of relevance, as one sociologist explained in this quote:

“Social relevance is another story, as we actually also have a very clear formulation here, at least for us. For us research is always about inequality. And our social relevance always means something has to address reducing social inequality. [...] So we set out all our projects so that they must support elderly people in their precarious, difficult life situation.” (soc1)

With regard to the difficulty in defining relevance clearly, practically all those interviewed find it almost impossible to find indicators to measure relevance. A number of them say a fundamental problem is that the measurement and comparison of relevance always requires a value frame. However, one

cannot assume that there would be consensus on this value frame within the social sciences or even within individual disciplines. A sociologist expresses this as follows:

“I don’t think we could agree on three topics at a gathering of all Austrian sociologists. (.) And, if so, they would be three very banal ones, right? Be nice to one another, or the like, yes.” (soc4)

It is possible within the value frame of a person or a project to specify which efforts will be initiated to determine relevance with regard to the corresponding social topics. The interviewees appear to believe, however, that a comparative measurement of the relevance of research is impossible.

In summary, relevance and visibility are both considered preconditions of the societal impact of social science research. Relevant research articulates possible social connection points. Whether or not these connections are actually updated, however, and research has an impact on society is beyond the concept of relevance and within the realm of the concept of relevance.

4.2.3. WHAT IS SOCIETAL IMPACT AND (HOW) CAN WE MEASURE IT?

The researchers we asked unanimously define impact as actual changes of social structures, practices or attitudes that are set in a demonstrable correlation with a specific research action and the knowledge resulting from it. Practically all named examples from their own experience in which they believe their research has had impact. At the same time, however, they also emphasise that the causal assignment of a specific societal impact to a specific output from research in almost all cases is extremely problematic. The following two quotes explain these problems, each in the context of policy advice and the compilation of reports for specific social institutions.

“[F]or 15 years we have requested the very same and nothing actually happens. But then there are certain things, [...] where something that we asked for, was actually implemented in policy, maybe, a year or two later. A small legislative amendment, but which had big consequences [for specific groups of the general public]. But you couldn’t even say that it happened because of us. So you can’t even attribute it clearly [...]. Of course it would be nice to say that we wrote it [...] and then the politicians were happy to take it up and implement it immediately. But these things happen sometimes. This would also be impact then, but you really just can’t measure it so easily.” (soc2)

“[W]hen we write reports for a specific institution and later it’s clear in the further work of this institution that it used findings from the report, then you can say – that had impact.” Cases in which you can see a causal correlation are, however, the big exception, “because in the process in-between, in the negotiations, in the committees to which I then perhaps was invited, where I have given a statement somehow, which might have had an effect somehow or not and which is not recognisable – that is hard to measure. So, there are those highlights, where you can actually prove it and can say: ‘Okay, now I’ll pat myself on the back, because that did make its way into some paper or other’. But generally speaking I think that social science knowledge simply is, let’s say, a basis and is used as basic knowledge, where you simply cannot actually define the causal correlation.” (cs3)

On one hand those interviewed argue that in most cases the processes in which knowledge actually has impact, or perhaps doesn’t, are invisible and inaccessible to the researchers. On the other hand, for example, policy decision-making processes are so complex that an attribution of a legislative change to an individual social science intervention would be an inadmissible reduction.

One sociologist adds that in the 70s and 80s already, the idea that the impact of social science knowledge on society could be predicted or understood was abandoned. Rather we assume now that social science knowledge in society has complex and often unintended effects.

“[...] that is, because this long phase of thinking in terms of social technologies, where we thought, well, the social scientists know better and provide solutions and then society will also be better; that simply entirely disregarded the fact that society changes and that it also changes via interventions, but that the consequences are never those that we wanted, right? And we have to see this realistically.” (soc3)

At the same time actual changes in society often happen over very long periods, which would be far beyond the temporalities of the standard observation and evaluation of research. One political scientist said that they continue to receive letters from the general public on changes that were connected with publications from a project 25 years ago:

“It is quite nice for someone in research when you then get a letter and a photo 20, 25 years later, that’s really good, but the point is that, let’s say, the impact is real here, so it’s not based on innovation or is short-term, but rather that it’s here for the long haul.” (ps2)

Correspondingly, many of our interviewees are rather sceptical about the ability to measure the actual impact of research, while some think it would be entirely possible to measure the effects of research to a certain degree. However, this would not be possible on the basis of previously existing indicators or measurement infrastructures. Rather specifically focused and quite extensive research would be required to determine the impact of specific interventions. This would be interesting for individual projects, but it would certainly be costly to do this for all social science fields.

Another problem for the measurement of Impact, which was addressed by several interviewees, is the question of who would be able to evaluate if there was impact according to which standards, and what quality it would have. Unlike with scientific impact, science lacks the competence to evaluate societal impact. An evaluation of actual impact is therefore only possible with the integration of societal stakeholders (similar, for example, to hybrid committees, which do the impact assessment in the British REF). This would make appropriate evaluation processes quite expensive.

“So, what are the guidelines?” How do I proceed? Isn’t it? What are the quality criteria here?” This could then no longer be those valid within science, we could no longer determine quality based on our qualification, on that which we are trained for, whatever it might be. [...] So which committee evaluates it then? Really, we can only do this as joint ventures, with other groupings.” (soc1)

A number of interviewees are basically very wary of the measurability of impact in the sense of actual changes in society for the two reasons mentioned earlier. They believe it is significantly more realistic to measure things that can be observed in the scientists’ actual work, such as the efforts to create good conditions for generating *impact*, for example.

“I think what we can show is this – the relevance, the visibility and the effort. I can show that very well. But then to actually also prove this impact, if I too was being measured along this criterium – that makes me very sceptical that it would actually work.” (cs2)

4.2.4. SOCIETAL IMPACT AND THE NEGOTIATION OF BOUNDARIES BETWEEN SOCIAL SCIENCES AND SOCIETY

An important topic in the discussion of impact relations for many of the researchers we asked was the independence of social science research. Researchers from all disciplines and with very different approaches to society thought it was extremely important to emphasise, that in influencing society it cannot be about simply “serving” the existing interests and values of societal stakeholders and generating knowledge that legitimises the behavioural patterns of these stakeholders. One sociologist who has collaborated over many years in their research with stakeholders from the worlds of politics and administration therefore explained as follows:

“This means at the beginning, it was kind of funny. Aha, these people always think they can order something from me, right? Until it finally became clear that they cannot ‘simply place orders’ with me. So either there is a clear relationship in which every party has their competences – in which, ideally, there can potentially be some kind of compromise, which you collaborate in elaborating the results”. (soc3)

Several interviewees also quoted recent negative examples at the interface between politics and society, such as the “Kindergarten Study”, to show that they believe it is key that the independence of social science knowledge production also be maintained when it comes to its societal impact. The high-quality production of new knowledge must be the centre of focus in every case, and the normative interests of societal stakeholders involved must not influence the results of research work. One sociologist, for example, clearly formulated:

“Yes, so I have a very clear line here - also based on concrete experiences. I think everything where a client begins to get involved in what he would like to have as a result (.) And partly in the survey design let’s say, and how to perform this study - that’s such a clear limit for me, [...] this is a kind of contract research that (.) does not interest me and which I also think is not (.) scientifically honest.” (soc2)

In this context it is also key to secure the financing of societally-relevant research, that enables the independence of the research, and which is not tied in with the interests of the financing stakeholder.

With regard to impact relations, some interviewees expressed concern that an implementation of the measurement of impact that was not critical enough could result in research whose outcomes are better suited to the values of political and societal stakeholders are seen as having a greater impact. They say it is more likely that societal stakeholders would accept recommendations that corresponded with their existing thought patterns and values. For a number of interviewees this significantly contradicted the task of the social sciences to generate knowledge that also critically reflects on and questions existing social structures. The acceptance of such critical knowledge in society is more complex and must be considered in longer time horizons. This must also be considered with the measurement of impact.

One sociologist for example describes the task of the sociologist as follows:

“... to point out that the hegemonic orders or dominant structures, indeed, are not the only way to think about things, but rather to say: ‘We can be entirely critical, yes, when looking at social phenomena, we look behind the scenes, check hidden power structures’ [...] so these are the things we look at. But of course this isn’t always so pleasant for society.” (soc5)

4.3. BOUNDARY CONDITIONS OF SOCIETAL IMPACT

4.3.1. THE ROLE OF THE UNIVERSITY AS AN INSTITUTION

The majority of interviewees spot a certain ambivalence with regard to the question of what value universities as institutions ascribe to the societal impact of research. In their perception buzzwords such as “third mission” were used increasingly in recent years and the societal relevance of university research gained prominence, at least discursively. However, this discursive commitment is largely not translated into incentive and evaluation structures. Activities for promoting the *impact* of social science research would get little consideration.

“But I do think that it actually receives very, very, very little appreciation; it is so double-edged. On one hand there is little appreciation for it, and on the other hand, however, we have the big “third mission track” and everything that comes along with it, in a way that we really should attend to this. I would say it really is rather ambiguous. [...] I would like to see it getting more appreciation.” (soc2)

Those asked believe the issue of institutional appreciation is not merely symbolic. A number of them emphasised that the implementation of their knowledge in society and the maintenance of relations with societal stakeholders would entail considerable time investment. This time could not be invested in the production of scientific outputs in the narrower sense, in high *impact* publications, for example. One communication scientist believes this would also have to be recognised and taken into consideration by the institution.

“This would then of course also include the hope that it would simply also be honoured, when we actually invest this time – and it is clear that certain other things cannot be done or cannot simply not be done in the same amount. So we would just also have to know – what value does it have? So if this was clearer, that it is also recognised as significant if you engage.” (cs5)

Some interview partners say the unclear role of social commitment with regard to one’s own research would also result in researchers tending to not invest their time in this area. This would in particular apply to the younger generation, which many of interviewees believe they can currently only advise as mentors to concentrate primarily on publication activity in the narrower scientific sense and to disregard other activities. One political scientist commented:

“That’s how I see it. Perhaps I’ll know more in five years and it will be different, right? But right now what I’m seeing is how the processes run, what matters, especially at our faculty. What matters, that is very, very clear, right? These are the journal publications I’d say, and very specific ones. [...] [T]he current development at universities and in research, yes, I think there’s so much good in it – but it is also a development which reduces the potential for society.” (ps2)

In order to counteract these developments, it is important to prioritize work on impact on society in internal institutional evaluation structures, in line with the externally performed importance of impact.

4.3.2. SCIENTIFIC RELEVANCE AND SOCIETAL IMPACT

The researchers we asked differ greatly on the issue of how well scientific relevance and *societal* impact could be compatible within a research project. Some researchers working more quantitatively and based on hypothesis-testing say that in their area it is practically impossible to publish in top-quality

scientific journals from a project that concentrates more on the societal impact. Other researchers, especially those that are more qualitative-oriented, however, also spoke about high-ranking publications, which were later produced from the data acquired as part of such projects. One communication scientist summarised this area of tension as follows:

“If we do the research really well and truly work according to high scientific standards, then we can also place it quite well [in very good journals], because my field is also a highly applied field; so it often works very well when we also examine phenomena directly in practice as it were. [...] you can of course also get with very, very good applied research, if you want (.) into these, let’s say, very selective scientific-theoretical journals; but this is of course very difficult. There is a certain hierarchy, yes, where the applied research perhaps is not valued as much.” (cs5)

A number of other interviewees reported there are difficulties in scientifically validating results provided in more society-relevant projects as well. These difficulties are connected on one hand, with the lack of time, as the respective projects mostly do not earmark any resources for scientific processing and publication. On the other hand, they say it is often difficult to reach the level of generalisation required for an international scientific publication beyond the scope of individual cases.

As part of our explorative sample it is, however, very difficult to make specific statements on the relationship and compatibility of scientific and societal relevance in research practice in the social sciences. This would require more in-depth surveys and analyses.

A number of interviewees say, however, they fear that the perceived ambivalence of the institutions with regard to the appreciation of societal impact described in chapter 4.3.1 could unreflectingly add the measurement of impact activities simply as another category for assessing the performance of individual researchers. Most interviewees believe that the impact on society does not automatically happen as part of the generation of excellent scientific knowledge itself. For an influence in society they say it would be necessary to invest time and take further actions. If this is not considered, a number of researchers rather see a threat in the prospect that societal impact will be recorded more systematically by institutions. One sociologist expressed this as follows:

“We already have to be a bit careful here that we don’t say, ‘okay good, now this is added on top here as well’. So, onto what we have to do anyway, and with everything and constantly, because otherwise you can no longer exist scientifically. That really would be a frightening situation.” (soc2)

Like this researcher, a number of others asked said the institutions also had to provide them with appropriate time and human resources, if they expect an increase in impact and visibility.

4.3.3. FUNDING CONDITIONS FOR SOCIETALLY-RELEVANT SOCIAL SCIENCE RESEARCH

The funding of research by different funding bodies is also a further important institutional framework condition. All those interviewed share the view that, as this interviewee put it, in international comparison *“drastically low funding”* (soc3) is provided for problem-related social science research at universities. The fact that the FWF as the main funding body of university basic research is not considered as likely to fund projects which primarily target societal impact is given as an important reason for this. This is due to the fact that, for decisions within the scope of the FWF, the key criterion is not international scientific quality alone, but rather broad relevance as well. This criterion they say is not always easy to combine in a project with national/local social relevance. One sociologist formulated this as follows:

“... because (.) the FWF usually doesn’t care at all about the fact that something has not yet been researched for Austria. However, a number of stakeholders here in Austria do.” (soc2)

While there is indeed the option after an FWF project of looking for funding for an “outstanding science-communication measure” in conjunction with the project, under no circumstances is this sufficient and it is always ex-post (after the research), and therefore does not allow to make the knowledge production itself more interactive²³.

Some interviewees in our sample indicate they are able to conduct research of societal relevance in the context of EU *Horizon 2020* projects. This possibility is, however, restricted to those areas that are in line with the themes specified within the scope of European research themes. These themes are, however, primarily oriented towards an idea of scientific-technological innovation and problem solving, and therefore only offer limited opportunities for connecting many forms of social science research.

Regional funding options play a role to varying degrees for those interviewed in our sample. However, generally speaking none of the respective federal states appear as a funding body for societally-relevant social science research in the region. Whether or not and how research is funded depends far more on the topical area and the stakeholders in administration that are responsible for this. Some interviewees believe this form of financing is important in the absence of alternatives; practically all, however, emphasise that it entails specific problems. These are on one hand the independence of the research financed in this way (see chapter 3.2.4), and on the other hand on who decides on the thematic prioritisation. In many cases the political stakeholders insist on the right “to determine what is important and what is not” (soc3). This would then entirely restrict the freedom of the researchers in choosing societally-relevant topics.

A good deal of the researchers interviewed criticised the lack of research funding institutions in Austria in this context, which would fund the explicitly societally-relevant research in a funding line independent from the specific interests of individual societal stakeholders. Such a role is often played in other countries, such as Germany, by foundations. These are lacking in the Austrian funding landscape.

“... I am on this council of experts in Germany, [...] and see how many possibilities, so how many foundations are at work here. Foundations that do purely science research as it were, but which also do applied, or extremely problem-related research. From experience I would say there is nothing comparable in Austria, I can’t think of anything, nothing at all.” (ps2)

The call for societally-relevant research that also has the potential to bring about changes is therefore considered to be connected with corresponding funding structures.

5. POSSIBILITIES AND LIMITS OF INDICATORS FOR THE SOCIETAL IMPACT OF THE SOCIAL SCIENCES

In chapters three and four we discussed the various pathways of social science research to society as well as issues surrounding the possible impact of this knowledge. This all happened against the background of considering the possibilities and limits of indicators that make this effect visible.

²³ For information on the “WissKom” programme, see <https://www.fwf.ac.at/de/forschungsfoerderung/fwf-programme/wisskomm/>. The programme was suspended in 2018 and is currently being revised.

Furthermore, we presented some key elements of the international discussion surrounding the measurement of societal impact of social sciences.

This chapter now draws together the different observations made so far, with the aim of illustrating the complexity of the situation and, at the same time, showing where there may be opportunities to make the impact of the social sciences more visible. We have schematically summarised our observations in figure 4. The graphic defines relevance, visibility and impact, situates them towards each other along the process of impacting society, and specifies our most important findings with regard to the measurability of the respective term. In our model, relevance and visibility are preconditions for social impact, but they do not describe any actually identifiable changes in social structures, practices or positions. In addition, based on the interviews and the literature analysis, the graphic introduces the creation of impact conditions as an essential category between the preconditions and the actual impact.

This clearly shows:

1. It is of key importance to carefully differentiate between the terms, **relevance, visibility and impact**, and thereby to better understand the **knowledge dynamics** at work at the interface of universities and society. The three terms are often used overlappingly in the debate on impact, if not even interchangeably in places. Our analysis shows, however, that they have a very different meaning in the practice of the researchers interviewed. They locate these concepts at very different moments in the process of the interaction of social sciences with society, which then suggests very different indicators for measuring the respective terms.
2. Consequently, it is essential to **consider and better understand the interaction of the notions relevance, visibility and impact**. Relevance and visibility are the prerequisites for the generation of impact. Visibility in the sense that societal stakeholders recognise that a specific person or institution generates knowledge on a specific topical area. This is a precondition for this knowledge to be received and taken up. Relevance relies on the effort of researchers to articulate the knowledge they generate about societal issues and debates. This articulation work increases the fit for societal actors and therefore the probability that impact is generated in further processes. The processes in society that lead to the emergence of impact, however, can only be influenced to a limited extent by the scientific community. Our interviews have nevertheless shown that active work by researchers in the generation of good conditions for impact can make a significant contribution to the impact of knowledge in society. This work on creating impact conditions can take place as part of participatory research as well as in a variety of “translation activities” in the context of participation in advisory boards or other direct work with societal stakeholders.
3. At the indicators level, it is extremely important to **be aware of which indicators measure which of these terms**. There is, for example, an already well-developed indicator system for measuring the societal visibility of science. On the one hand, most universities record media presence routinely as part of the intellectual capital report. On the other hand, new indicators (*altmetrics*) allow the visibility in digital social media to be measured. Both are indeed preconditions for impact, however differently to what is sometimes wrongly implicitly assumed these indicators do not measure societal impact in the sense of an actual change of social structures, practices or standpoints. If visibility indicators are wrongly used for measuring impact, this can result in researchers concentrating in particular on the media “marketing” of their own research, but disregarding other important aspects of the creation of impact conditions, especially the time-intensive direct communication with societal stakeholders.

4. Both the literature review and the interviews with experts and researchers suggest that **the measurement of actual societal impact is extremely difficult, and if at all possible, then only with the use of considerable resources**. This is due on the one hand to the fact that the processes in which impact is generated in society are not easy to understand and often have very long time horizons. On the other hand, the causal assignment of societal changes to the knowledge of individual researchers or institutions is seen as problematic and, if at all, only imaginable in specific configurations. It follows that the measurement of actual impact on the basis of a few indicators cannot be achieved in a meaningful manner in a comprehensive manner and covering all fields; rather it should focus on specific examples, which institutions consider to be especially relevant (see also the impact cases with the British REF). When selecting such examples, however, it must also be remembered that this is often the result of pre-existing networks and therefore also reflects the power of individual researchers or institutions.
5. In contrast to measuring impact itself, however, the **measurement of activities that contribute to the creation of better impact conditions** is entirely possible. This is the greatest catching-up requirement when it comes to potential implementation of documentation and indicator systems. Interactions with societal stakeholders that go beyond the scope of science2public presentations, for example in the context of advisory board activities or participatory research, are currently not well recorded institutionally and occupy little to no space in academic performance evaluations.
6. In developing systems for documentation and measurement, which contribute to the creation of better *impact* conditions, it is **important to rethink the relationship of numerical indicators with the narrative reconstruction of impact stories**. Numerical indicators are an important basic framework to provide an overview of the activities at a faculty, for example. When it comes to the communication of the societal impact in particular, be it as part of evaluations or in the communication to the general public, narrative formats and case studies are, however, far better positioned for illustrating the societal impact potential of social science research. In this context, it should also be noted that the identification and description of impact stories, however, is in no way part of the researchers' basic skills. As one expert emphasised, successful universities, for example, do indeed offer researchers training courses in which they learn about the ways to think about their own research in society and to describe it. The Societal Impact Platform of the Social Sciences Faculty at the University of Vienna is such an attempt to contribute to researchers' ability to write about their research practice and to also communicate the numerous configurations in which they interact with society as part of their research.
7. The international experiences with the impact of indicator systems on the practices of individual researchers show that **scientific institutions should consider in detail which attributes should be measured on an individual level and which should be measured with regard to collectives such as institutes or faculties**. In the British REF, the evaluation of actual *impacts* through case studies, for example, is performed exclusively at the level of departments, and not that of individual researchers. When measuring visibility, relevance and activities to create impact conditions at individual level it must be considered that researchers today must already satisfy a multitude of requirements defined in indicator systems in research and teaching. If the researchers are not given additional resources for these activities, an increase in the evaluation

load will very likely result in the fact that the additionally required categories in the area of societal impact will be addressed rather pragmatically and superficially rather than substantially (see Felt et al., 2013).

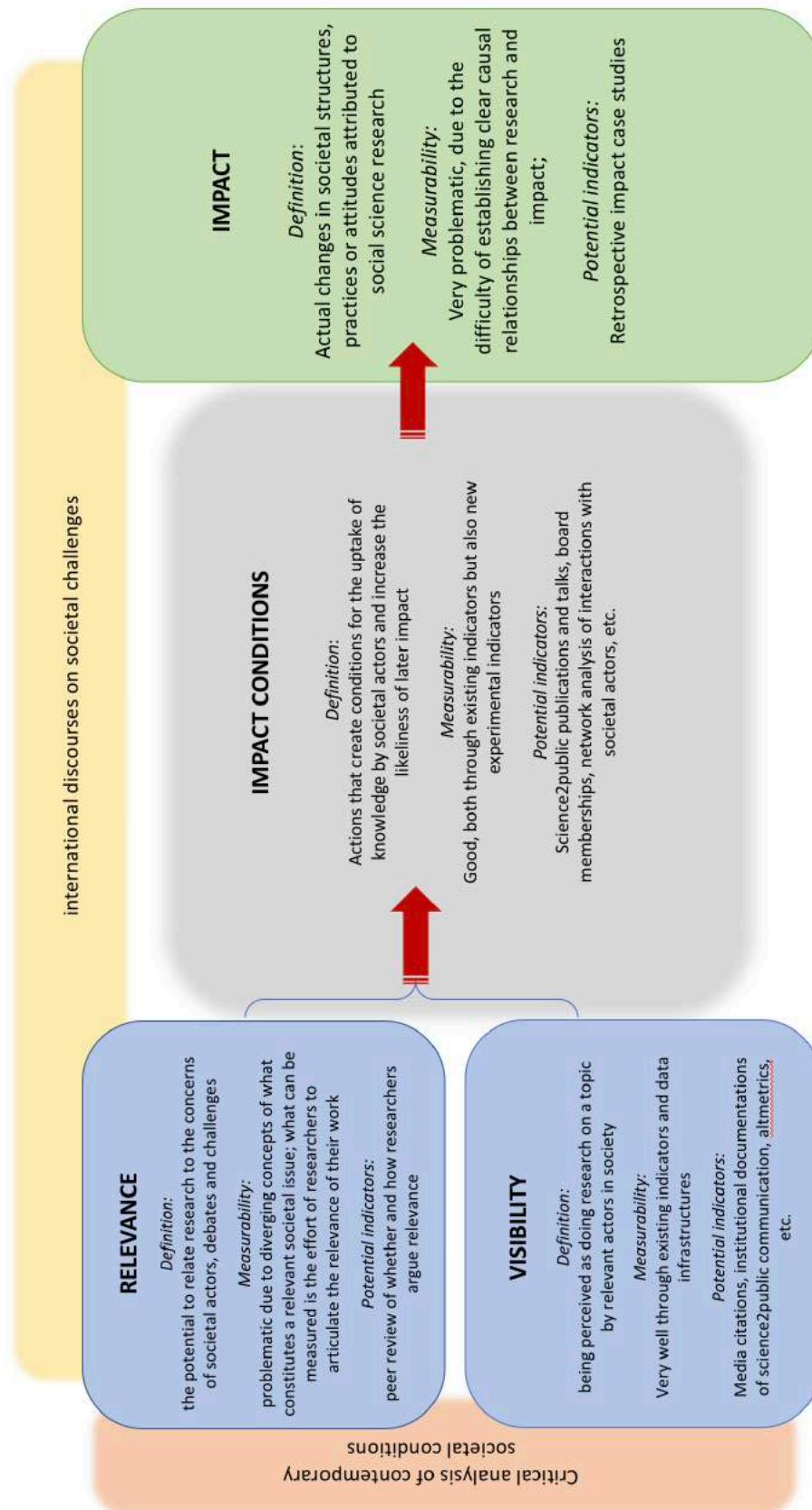


Fig. 4. Relation between the categories relevance, visibility and impact

6. SYNTHESSES, CONCLUSIONS AND RECOMMENDATIONS

On the basis of this explorative study and following the reflections presented so far we present the following conclusions with regard to societal impact, its categories, indicators and possible measurement and make some recommendations.

1. Social science knowledge **reaches society through multiple pathways, where it is taken up implicitly or explicitly in a variety of ways. This diversity is what ensures a sustainable relationship between social sciences and society on various levels.** However, these different categories of engaging with society do not enjoy the same attention in today's institutional perception. While media presence, for example, is closely documented, other important activities such as collaborative-participatory/action-oriented research with stakeholders or contributions in advisory boards relevant to society often disappear from the institutional perception. One important step in increasing the impact of the social sciences in society here is to achieve greater symmetry in institutional perception and appreciation.
2. **The societal impact of research is significantly more difficult to measure than the scientific impact** (although whether or not the indicators used are always meaningful and beneficial is also increasingly discussed in the latter case). There are a number of reasons for this difficulty, which apply for all sciences (among others, problems with the time horizon between the generation of knowledge and societal change; for further details, see chapter three). For the social sciences additional challenges arise from the fact that their knowledge for the most part is not converted into concrete objects or technologies, but rather used by societal stakeholders as **orientational knowledge**. In most cases it is therefore not clearly verifiable when and to what degree knowledge or the interaction with a social scientist has resulted in a specific change in a certain area of society. **This makes the causal attribution of societal changes to specific social science knowledge considerably more difficult.**
3. **Impact in the sense of actual changes in society, which are associated with social science knowledge, is not broadly ascertainable or measurable as part of existing indicator systems and methods.** In each individual case documenting impact requires extensive additional surveys, which entail significant resource costs. The measurement and documentation of impact can therefore not be performed exhaustively in a meaningful way, but rather must always be restricted to selected examples (as also practised in the context of the British REF, for example). However, this also means that only a smaller portion of the actual impact gets documented.
4. **The prerequisites for impact are easier to ascertain and measure than the actual impact itself.** Specifically, the efforts of researchers to increase the **visibility** and **societal relevance** of their research are the **conditions for later potential impact**. This also highlights the investment of the researchers in the interaction with society. However, it is extremely important not to confuse/equate categories that describe preconditions such as relevance or visibility with actual impact.
5. If we consider the currently **available documentation systems**, the **greatest potential** is seen in documenting **the creation of impact conditions**. These efforts in particular should include the work **with** societal stakeholders to improve the suitability and reception of knowledge.
6. International experiences show that striking the **right balance between narrative approaches and quantifiable indicators** is important. National systems with longer-term experience in measuring societal impact in evaluation situations in particular give preference to a **narrative account of impact and only use quantitative indicators to support the narrative**.
7. Prior to designing and implementing a system for **ascertaining the societal impact of social sciences** it is very important to ask **what specific goal** should be attained. Is it about a new type

of resource distribution, such as the *impact cases* in the UK? Is it about creating incentives for a more *mission-oriented* focus in social science research and involving it more actively in working on societal problem areas? Is it about improving the integration of social scientists' knowledge into the shaping of society, as part of evidence-based policies, for instance? Or is it about publicly justifying why the social sciences receive funding and support? **Different types of documentation and measurement are required depending on the objective.** While narrative formats provide a clear advantage for communicating the performance of the social sciences, systems that have an impact on resource distributions require a significantly higher level of standardisation and trigger considerably stronger (and frequently undesirable) adjustment effects.

8. In the concrete establishment of measurement and documentation systems, it is important **to first decide on which level of aggregation the societal impact of research should be measured.** Are faculties, individual departments, work groups or individuals the subject of the evaluation? Due to the high costs of appropriate impact documentation, but also because of the problems of a behavioural adjustment as a reaction to the measurement and general methodological considerations coming from research on indicators **a measurement at individual level is not recommended.** Internationally the measurement of impact in the context of evaluations almost exclusively performed on relatively highly aggregated levels (departments, faculties).
9. The **diversity of scientific fields**, both in comparison to the natural sciences and within the social sciences, for example, **must be considered when measuring and documenting impact.** The results of our study show clearly that the paths through which impact happens and the effects knowledge has on society vary largely between different areas of the social sciences. There is also considerable heterogeneity within the social sciences, which cannot be reduced to differences between the established disciplines. This requires **the use of a broad range of indicators and types of documentation**, but also the **ability of assessors** (carefully-staffed interdisciplinary panels in the case of impact measurement as part of evaluations) **to productively deal with these differences – and do justice to diversity.**
10. It is generally important to specify that **indicators for measuring societal impact require additional infrastructures and resources.** It is not beneficial to simply redefine existing indicator systems for measuring the public presence of science as systems for measuring impact. The measurement of activities that create the conditions for societal impact, but also and in particular the development of incentive systems and measures to further improve these impact conditions, require additional resources to those currently available at the universities. Furthermore, the **creation of new institutional structures or an extension of the mandate of existing structures** seems necessary. With regard to impact, many universities currently concentrate on issues concerning spin-off and technology transfer, both topics being not very relevant for the impact of social science knowledge. Extending the mandate of these structures towards a broader understanding of the societal impact of knowledge, together with devoting additional resources, has the potential to significantly improve the visibility and impact of social science knowledge in society.
11. An **important limiting factor for the performance of social science research, which explicitly targets the creation of impact, are the scarcely available options for funding corresponding research projects in Austria.** The established funding bodies such as the FWF define their criteria strictly and exclusively in the area of scientific relevance. While there is indeed the option after an FWF project to get funding for an “outstanding science-communication measure” in connection to the project, this is by no means sufficient and always comes ex-post (after the research). Direct funding by interested stakeholders poses specific problems, especially with regard to the independence of the research. Institutionalised funding bodies that pay more

attention to societal relevance (such as various foundations in Germany, for example), are entirely lacking for social sciences in Austria.

12. **In conclusion, it must be specified that some of the greatest potential for increasing the societal impact of the social sciences lies with the institutions, in particular the universities.** Our results suggest that researchers are often rather ambivalent with regard to the institutional appraisal of impact-relevant activities. This can result in these activities being somewhat minimised, as their value – compared to other activities, such as the generation of inner-scientific impact – appears unclear and may even be seen as negatively correlating by researchers. **Institutions such as universities also recognising and appreciating the performances of researchers in creating impact possibilities would be an essential requirement for further increasing the efforts of researchers to impact society through their knowledge and their expertise.**

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