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| Social Innovation as Outcome and Valuation Category of Public Research Funding |
| Proposal for SNSF |

Zentrum für Soziale Innovation

November 2020

**Social Innovation as Outcome and Valuation Category of Public Research Funding**

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Vienna: Centre for Social Innovation, November 2020

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1. Rationale and research questions

In the mission statement of the conference *‘Impact of Social Sciences and Humanities for a European Research Agenda – Valuation of SSH in mission-oriented research’*, organised under the Austrian EU Council Presidency in late 2018, the former ERC President Helga Nowotny calls SSH researchers to re-think the transformative relationship between science and society. *“Scientific research is about transformation – how to enable it, or how to avoid it. It is about the transformation that society is undergoing as much as about the transformative power inherent in knowledge and policies based on social science knowledge …Transformative science must be transformative in a double sense: wanting to exert influence in society but also open to be influenced by society and its needs”* (Nowotny et al, 2019, p. 8). She further argues that SSH are deeply involved in the processes that use scientific and scholarly approaches to bring about a better society, difficult as it may be to define it. The societal and political relevance of SSH should be acknowledged and not denied. This would also help to valorise SSH research and move beyond a purely defensive stance on part of the SSH vis-à-vis the meaning of ‘impact’ (Nowotny et al., 2019).

Against the background of this statement, social innovation could become a much more important anchor point for social sciences and humanities (SSH) in the future. The engagement with innovation as a phenomenon that not only changes economic practices, but also social practices, however, continuously also SSH research from a pure analytical role to an active co-shaping role (see also Howaldt, 2019).

Both the scientific and research policy debate on social innovation has gained in importance over the past 15 years. This goes so far that some authors see social innovation as an unused equivalent of techno-economic innovation that could help in particular Social Sciences and Humanities (SSH) to free themselves from their defensive stance towards discourses revolving around valuation and impact of science and research. On the other hand, there are also findings indicating that (SSH) research has so far paid quite little attention to the development of social innovation, particularly in terms of empirical productive interactions (Howaldt, 2019; Schuch, 2019; Brundenius, 2017; Cunha and Benneworth, 2013). However, a recent study that examined the work of leading Austrian social scientists on the topic of social innovation and their research contribution to the development of social innovations contradicts the last statement (Schuch, 2021 forthcoming).

**Our main hypothesis is, that social innovation as a transversal topic seems to have increasingly moved from the margins of social science and humanities research to the centre of it**, although research funding still seems to lag a little behind this development. However, the published findings are still inconclusive and, above all, there is a lack of larger empirical studies. We also face a problem of measuring the contribution of scientific research to social innovation. Conceptual and epistemological uncertainties appear to be too great and, As a result we still know too little about the relationship between the work of research communities and the topic of social innovation.

This is where the project proposed by us comes in.

We believe that our approach is innovative and could boost the discourse on the relationship between social innovation and SSH research. However, we also know that the approach is risky in the sense that the results of the study may not confirm our hypothesis and thus may not be very beneficial for the further development of how to value SSH research. But even that would be an important gain in knowledge and would help to reduce speculation and assumptions.

**Our research objective** is

**First,** to identify scope and scale of SNSF funded projects that deal with social innovation research or the development of social innovation

**Secondly,** to assess the extent of contribution of funded SNSF projects to the development of social innovations, their productive interactions with non-academic stakeholders and/or beneficiaries and the operational or epistemological limits, and

**Third,** to critical reflect and structure the value of social innovation as potential outcome and valuation category, in particular for SSH.

With this project, we aim to pursue the following research questions:

1. How often and how is social innovation as a research topic approached in SNSF-funded projects?
2. What is the contribution of SNSF funded research to the development of social innovation? How far does it go? How far can it go and where are the limits?
3. Is social innovation a suitable starting point for the valorisation of, in particular, but not only SSH research?

We describe our analytical approach in the chapter 2. To give a first indication of our work, we start with a rough overview on the applied methods. These methods will be further refined in chapter 3. However, before we do that, we will operationalise the term “social innovation” in order to make it analytically applicable to our research.

1. Analytical Approach

2.1 Overview on the applied methods

In Table 1 below, we provide a short summative outline of the methods we would like to apply before describing our approach in detail.

Table 1**: Overview on the applied methods**

|  |  |  |  |
| --- | --- | --- | --- |
| **Methods** | **Activity** | **Source** | **Expected results** |
| **Text mining** | Screening of proposals and identifying those which are explicitly or implicitly dealing with social innovation research and/or development of social innovation | All funded SNSF projects 2015-2018 (details to be discussed with SNF) and final reports of these projects (maybe limitation to SSH projects – tbd with SNSF) | Number of projects (also put in relation to all funded projects, e.g. in SSH) that explicitly or implicitly deal with social innovation;  Establishment of a population of projects, from which a sample is then drawn for further work. |
| **Social Network Analysis** | Investigation of the productive interactions between the research team and non-academic stakeholders/ beneficiaries. | All funded SNSF projects with explicit or implicit social innovation relation identified by text mining | A categorisation of productive interactions of the SNSF funded projects dealing implicitly or explicitly with social innovation along a number of stakeholder categories |
| **Survey** | Survey on the perception and importance of social innovation for own research work, and its epistemological and operational limits in SNSF research projects | All funded SNSF projects with explicit or implicit social innovation relation identified by text mining | Better understanding of how social innovation   * is perceived or used as research topic and/or approach; * is assessed or already used for valuation of own research for accountability purposes; * reaches its epistemological and/or operational limits in SNSF projects |
| **Interviews / qualitative cases** | Interviews with principal investigators from 50 SNSF projects dealing explicitly with social innovation | Sample (n= 50) of all funded SNSF projects with explicit social innovation relation identified by text mining | Gaining detailed knowledge about   * scope of social innovation research * contribution of research to the development of social innovation and analysis of pathways * limits of contribution (in operational and epistemological terms) * use of social innovation as an outcome and valuation category for accountability purposes |
| **Presentation of findings** | Presentation of the findings to SNSF | Experts invited by SNSF | Transfer and discussion of the gained insights |
| **Workshop** | Workshop with SNSF to discuss and structure the value of social innovation as potential outcome and valuation category, in particular for SSH | Management of SNSF and experts invited by SNSF | Assessment whether or not (and if so with which particular features) contributions of SNSF research to social innovations can be meaningfully classified and structured for the purpose of valuation of research (in particular of SSH) |

A detailed description on the methodological procedures is provided in Chapter 3!

2.2 Analytical dimensions of social innovation

We aim to demonstrate the value of research by focusing on social innovation contributions from funded SNSF research. We include all fields of research in our study, but put special emphasis on Social Sciences and Humanities (SSH). Such an approach would add an alternative and innovative view on the value that SNSF adds through its funding. Potential effects of social innovation can appear in society, in culture, business, but also in interaction with the environment.

The term “social innovation” is not new. It can be traced back to the early 19th century (Godin, 2012). References are made to eminent scholars such as Gabriel Tarde (Howaldt, Kopp and Schwarz, 2015), Karl Polanyi or Joseph Schumpeter (Moulaert et al., 2013; Howaldt and Schwarz, 2010), but until today there is no commonly shared understanding of social innovation. Likewise, there are only first attempts of integrating social innovation in a comprehensive innovation policy theorem (Howaldt et al., 2014).

Also the conditions under which social innovations develop, flourish and finally increase their social impact are still far from being crystal-clear (Howald, 2019). Lizuka (2013) argues that the scope of social innovation suffers from a number of conceptual overlaps. Pol and Ville (2009) mentioned that some analysts consider social innovation not more than a buzzword, which would be too vague to be usefully applied to academic scholarship. It needs to be mentioned, however, that Pol and Ville were opposing this dismissive attitude. They themselves provided several inspiring arguments for a meaningful and research-guiding epistemological concept of social innovation. Also Moulaert et al. (2013) argue that the term ‘social innovation’ is often over-simplistically used as a buzzword, but has analytical substance for researching social change in society.

When we speak about social innovation we explicitly refer to the definition that was developed in the SI-DRIVE project, defining social innovation *as a new combination or figuration* of practices in areas of social action, prompted by certain actors or constellations of actors with the goal of better coping with needs and problems than is possible by using existing practices. An innovation is therefore social to the extent that it varies social action and is socially accepted and diffused in society.*[[1]](#footnote-2)*

This definition has a few important properties that provide epistemological and analytical orientation, which we also use for the analytical purposes (e.g. text mining) of our proposed project. These properties are summarised in Table 2 and discussed further below in detail.

Table 2**: Analytical dimensions to identify social innovations**

|  |  |
| --- | --- |
| Analytical dimensions | 1. Social innovation results in a changed social practice (= object of a social innovation). |
| 1. A social innovatiion must be new in a specific context or for a specific actor. |
| 1. A social innovation is constructed to fulfil a social purpose in that sense that it aims to better cope with needs and problems than is possible by using existing practices |
| 1. Social innovations are intentionally solution-oriented and prompted by actors or a constellation of actors. They do not just happen and they are not the same as social change, but they can contribute to it. |
| 1. A social innovation is more than an idea and must be put into practice (i.e. difference between idea, invention and innovation) |

First of all, the definition aims at changing *social practices* and not per se of producing or using a new technology. In our understanding the expression “new practices in areas of social action” sounds presumably problematic for a definition that struggles for exhaustion, because “social action” refers probably to all sorts of human action and interactions (also with the environment and artefacts; see Degelsegger and Kesselring, 2012). On the other hand, it clearly indicates its belonging to social sciences and humanities.

Secondly, the definition does not include all social practices, but is limiting them to *new* social practices without, however, offering a measurement indication, how ‘new’ a novelty can be in order to be labelled a ‘social innovation’.[[2]](#footnote-3) But like in ‘classical’ innovation research, most innovations are only relatively new to a specific context or actor and not uniquely new; what is new in a certain context could be a ’normal’ practice in another. Absolutely new innovations might be more exciting than those diffused to new contexts (e.g. new to the firm or new to a specific part of a society), but it is the diffusion which contributes mostly to the changes in economy respectively society.

Thirdly, the definition postulates that social innovations have foremost a *'social purpose'* or in other words (Pol and Ville, 2009) should explicitly refer to some sort of human welfare enhancement. The term “social purpose”, especially in combination with the ‘*goal of better coping with needs and problems than is possible by using existing practices’*, might sound irritating or even daunting to many scientists, because of its normative stance. What a social purpose is and what is good or even better depends on many aspects, not at least of interests, power and ideology. As (social) scientists we are reflexively alerted when we are confronted with normative statements. Critical questioning is what sets us apart. In order to save the honour of the chosen definition, it must be said that - in contrast to some other definitions of social innovation, which postulate the “good” (i.e. the just cause) almost as a teleological goal – the definition which we use does not prescribe a normative postulate. The way we read the definition, it only points to improved solutions or social practices, which of course can also have their downsides because interests can be very different. What fits nicely to one social group, might be seen as cutback or deterioration by another. Also rebound effects of social innovations occur.

Another problem with the term “social purpose” is that also business innovations rightfully claim to meet a social need or – perhaps more likely - ‘a social want’[[3]](#footnote-4). The often used argument that the underlying intention (on the one hand an interest in profit generation and on the other hand an interest in satisfying a sometimes difficult to define social need that overall contributes to human welfare enhancement) as the decisive differentiating factor, falls too short in our opinion. This argument is also often used to differentiate social entrepreneurship from ‘normal’ entrepreneurship. It seems to us more decisive that some social innovations simply do not require any market logic and can life without business and that some businesses are too distant from the pretence of human welfare enhancement. In practice, however, there is numerous overlapping and intersection between the sets of social and business innovation (see also Pol and Ville, 2009), which we would consider an epistemological shortcoming, but probably an empirical fact.

Fourthly, social innovations focus on the provision of solutions to improve social practice. Judgments on the value of social scientific research for society vary even among social scientists (Reale et al., 2017). While social sciences and humanities scholarship is often committed to do research for the good of society, the interest of researchers is often not oriented towards producing usable results, let alone actual solutions, but rather to raise awareness and influence society to create capabilities of self-understanding in different contexts (Reale et al., 2017; Benneworth, 2015; Nussbaum, 2010).

The intentional *solution-orientation*, however, helps us to isolate the object of social innovation and to distinguish it from ‘normal’ social practice and social change. As outlined before, the provision of a solution to a certain problem needs to be new in a specific context, otherwise it would not be an innovation. We have to be aware that most innovations are small in the beginning. Many remain small and many are just incremental. Social innovation is not social change. Social innovations can contribute to social change, but social change does not necessarily need social innovation.

Our applied definition of social innovation also calls for *an agent or actor*, who kicks-off and promotes a social innovation and thus contributes to some sort of social change (be it limited or extensive). The presence of an agent helps us not to lump every social phenomenon together. Said definition of social innovation postulates clearly that a social innovation has to be *intentional* and prompted by certain actors or constellations of actors. Contrarily, we would talk about social change if the observed changes in society are not directly intentional or at least cannot be traced back to certain agents or if the agent's landscape becomes blurred and unclear, or when the phenomenon already became a dynamic of its own.

The problematic epistemological issue with the important reference to an *actor or a constellation of actors* is, that in theory this can be everybody. While the measurement of technological/economical innovation is usually confined to the sectors of science (Frascati Manual of the OECD) and business (Oslo Manual of the OECD), there is no restrictive indication, who potentially could be an actor for social innovation. This is due to the nature of social innovation, which can be prompted by NGOs, companies, social entrepreneurs, social groups, policy-makers or even researchers. That does not make the operationalisation and measurement of social innovation any easier. Moreover, the widespread focus in the social innovation discourse on heroic individuals and especially on social entrepreneurs[[4]](#footnote-5), might have meant that many scientists did not feel addressed by such a perspective, especially if they operate more in structuralist and institutionalist schools of thought.

Fifthly, a social innovation must be more than just a brilliant idea; at the very end it must be *put into practice*. Like any innovation, also a social innovation needs to be accepted.

Contrary to techno-economical innovations, which are diffused in businesses or parts of it, social innovations are diffused in society or parts of it. The scale of social acceptability and use may vary from case to case, but this also applies to techno-economical innovations. Some social innovations target only local groups of a few people, while others potentially address thousands.

However, since we understand in our case research as an upstream process that might lead to innovations or not, we are not approaching the contribution of research to social innovation from its end but from its scientific inputs (if there are any), as shown in the next subchapter.

2.3 Locating social innovation approaches in research processes

Research contributions to any innovations are usually at a preliminary stage. They are one input among others. In principle, the scientific contribution to social innovations is no different from the scientific contribution to techno-economical innovations. In both cases, they precede the actual applications, which are usually outside the domain of scientific research. Research funders often refer to TRLs (technology readiness levels) or SRLs (societal readiness levels) to make clear that the contributions of research precede the actual innovation and are intertwined in many ways. Not every innovation is necessarily based on scientific input, but it is relatively undisputed that our society and economy are increasingly permeated by technology and knowledge, and at least for some sectors, such as the pharmaceutical industry, scientific and technological progress is an indispensable driving force for innovation. Whether and to what extent this also applies to social innovation is the empirical subject of this study. In contrast to the large-scale empirical investigation conducted in the SI-Drive project, which, based on identified social innovations, traced back the contribution of research, we choose a supply-side approach. We investigate what the research funded by the SNSF itself contributes or would like to contribute towards social innovation.

In order to operationalise this, we use the localisation of social innovation approaches in research processes, whereby so-called productive interactions with non-academic partners play a special role. Transdisciplinarity research attaches particular importance to the development of social innovations (Moulaert et al., 2013).

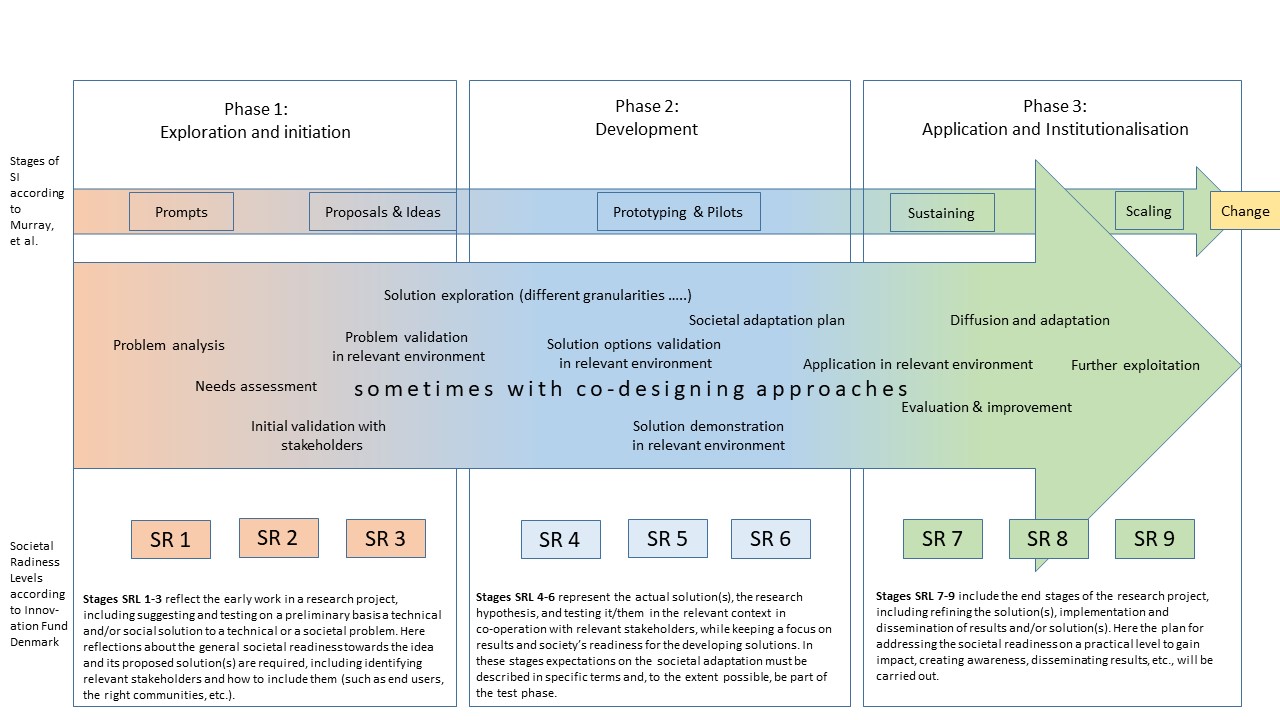
We use the 6-stages model of social innovation of Murray et al. (2010) and the societal readiness level concept of the Danish Innovation Fund, to track down and identify social innovation research in research processes. Here we distinguish three R&D phases and several operational R&D procedures, assuming that social innovation research funded by SNSF is mainly concentrated in the first two phases (see Figure 1).

In combination with the properties identified for social innovation (see Table 2), we will operationalise these phases and procedures into analytical categories to identify and trace the contribution and stage of SNSF funded research to social innovation.

We assume,

* Firstly, that research contributions to social innovation funded by SNSF in its capacity as a fundamental science fund will become primarily be visible in phases 1 and 2
* Secondly, the research procedures are not necessarily linear as the graph suggests
* Thirdly, not every single research process shown in the diagram necessarily has to be applied - we rather expect various combinations and omissions of individual process steps
* Fourthly, not each project will certainly lead to a social innovation, just as very few scientific and technological projects lead directly to techno-economic innovation
* Fifthly, we will survey so-called productive interactions (Spaapen and Drooge, 2011), if available, in relation to all identified process steps and place them in a functional relationship (e.g. needs assessment; co-development; testing; access to those affected; application; dissemination etc.)

Figure 1**: R&D phases and procedures for social innovation research**



The level of productive interactions between researchers and non-academic stakeholders respectively beneficiaries or partners is a key aspect of our study. Especially during the last years participatory approaches and support programmes that promote productive interactions with non-academic actors in research (Schäfer and Kieslinger 2016; Shirk et al. 2012; Howaldt and Schwarz, 2010), have strongly contributed to a more active role of researchers that goes beyond the transfer of expert knowledge into social practice. Participatory research approaches, often operationalised through co-design approaches, should rather lead to mutual learning and skill development of all involved actors to enhance their ability to determine and reflect (Howaldt, 2019). But Howaldt (2019, p. 45) also argues that *“there is a large gap between the traditional understanding of social research and science and the new mode of generating socially robust knowledge …”*

Shirk et al. (2012)[[5]](#footnote-6) differentiate five ways of participation of non-academic actors in research:

1. contractual projects (professional researchers are commissioned by non-academic actors)
2. contributory projects (non-academic actors collect data for scientific projects)
3. collaborative projects (non-academic actors not only collect data, but also help refine the study design, analyze data and / or disseminate results)
4. co-created projects (which are designed jointly by researchers and non-academic actors and for which at least some of them are actively involved in aspects of the research process), and finally
5. collegial contributions (where non-academic actors carry out independent research and share their results with researchers).

For operational purposes, we will mainly distinguish between three levels of interaction[[6]](#footnote-7), but will include different aspects highlighted by Shirk et al. (2012):

1. **PARTICIPATION**: Non-academic actors take part in research.E.g., being recruited in trials, completing questionnaires, participation in interviews and focus groups.
2. **ENGAGEMENT:** Information and knowledge about research is provided and disseminated. E.g., dissemination of research to non-academic actors (via media, social media), raising awareness of research through media, science festivals and open days at universities and research centres.
3. **INVOLVEMENT:** Non-academic actors are actively involved in research.E.g., through identifying research opportunities, agenda setting, members of project advisory and steering groups, co-developing information or materials, undertaking interviews with other non-academic target groups, or even carrying out research.

By means of surveys and social network analysis we will identify and classify the 'productive interactions' in question in order to find out what function they have in SSH research and what contribution they might make to the development of social innovations, if any. On the other hand, we want to use them to develop a valuation framework for SSH research.

## 3) Methodological Approach

Initial planning on the research methods, as mentioned in *Table 1,* aims to mobilize an integrated process where each applied method builds itself on the results of the previous one. A first look at the internal structure of the methodological steps is as follows.

*3.1 Text Mining*

Our aspiration to identify and categorize social innovation related projects in SSH research brings the need for an effective and reliable methodological approach to analyze a large text corpus. The text mining method aims to counter this issue with a semi-supervised analysis process. Initially conceptualized parameters will be finalized after the discussion with SNSF.

*3.1.1 Goals*

The indicators gathered through the operationalisation of the social innovation concept sets the frame of the text mining. Our goal in the text mining process is, firstly, to distinguish different themes in the SSH projects and diagnose the distribution of those themes in individual research projects, secondly, to analyze social innovation aspects as well as to label and categorize the projects accordingly, thirdly, to present the social innovation demography in the SSH projects by communicating and visualizing the important aspects of the results, and finally, also with the inclusion of the metadata analysis to create a further research basis for social network analysis as well as surveys and interviews.

In this regard, our preliminary consideration is to include approximately 10.000 project reports in the corpus of the text analysis process.

*3.1.2 Methodology*

Identification and categorization of the distinct topics will be following a topic modeling process with the following steps:

* The collection of the project reports will be classified by their scientific areas. The Motivation behind this categorization is, firstly, to identify different social innovation aspects in different areas and, secondly, to be able to map similar social innovation patterns between different scientific areas. After that, the text corpora will be prepared[[7]](#footnote-8) for the further application of the Natural Language Processing (NLP) methods and the possible number of distinct topics in each corpus will be approximated by the coherence tests.
* A comprehensive topic modeling approach *Latent Dirichlet Allocation* (LDA) shows a high alignment with the text mining goals mentioned above. LDA is a generative probabilistic model that has been quickly popularized among the machine learning approaches in NLP with its success in modeling abstract topics in large text corpora. LDA’s statistical model allows us, firstly, to identify the distinct (and also discrete) topics in each text corpus and secondly also observe the distribution of those topics in each document. We will be training our LDA model perpetually with sampling processes and labeling in a feedback loop to reach a high accuracy in results.
* Labeling and categorization of the results from the topic model will be done manually in each step by a dedicated group. The criteria for the labeling and categorization process are, firstly, the aspects of the social innovation and, secondly, possible indicators for the further granulation of the given scientific areas in the text corpora as well as the categorization of the different social innovation forms.

*3.1.3 Expected Results*

The topic modeling approach is expected to deliver a comprehensive presentation of the social innovation aspect in the SNSF funded projects. In this regard, the forms of social innovative aspects in research, social innovation demography in different scientific areas as well as changes in the given time period are inclusive to the presentation of the results. Depending on the width of the metadata delivered together with the data about SNSF funded projects mappings between the actors or other publication information and the results is also a goal of the text mining process. Other than, the fundamental result of the text mining process will be the basis further methods can be built on.

*3.1.4 Required Input from SNSF*

The mentioned parameters are preliminary decisions and/ or approximations, they are meant to be decided jointly with SNSF to finalize the research structure. Parameters as well as the methodological approach are also possible to be communicated or discussed through specific examples.

Text mining methods will be primarily depending on the project reports. However, as mentioned above, metadata about the actors, publication information, and information about transactions are also central to the comprehensiveness of the project. Therefore, SNSF’s input on the metadata to be provided plays an important role in the planning of the project.

*3.1.5 Limitations*

As mentioned throughout the proposal, research areas are generally limited to SSH areas as well as multidisciplinary approaches that include SSH areas. As a first estimation for text mining, the analysis of 10.000 project reports has also been mentioned as a rough estimation. Those limitations as well as further possible limitations are left open for the joint decision with SNSF.

*3.1.6 Data Security*

The data provided from SNSF will be encrypted and locally stored according to ZSI premises without any access from outside or other individuals uninitiated with the project.

*3.1.6 Outlook*

We also find the gender aspect in the research related to social innovation highly important. Depending on the metadata provided by SNSF, we would like to also analyze women’s participation in social innovation and changes in the social innovation research demography over the years. However, if provided metadata, the scope of the project, or jointly decided limitations make it not possible, we still would like to prepare a *stepping stone* in our results for possible future research on the topic.

1. <http://www.si-drive.eu/>; accessed on 12 November 2020. [↑](#footnote-ref-2)
2. The European Innovation Survey, for example, which is aimed at companies, always asks about innovations in the last three years. [↑](#footnote-ref-3)
3. Businesses also create the ‘social wants’ themselves through clever marketing and advertising strategies. [↑](#footnote-ref-4)
4. The definition of Dees (1998) on the role, which a social entrepreneur plays as change agent in the social sector, is a good example for this individual-centred approach. In the agency work of Ashoka such commendable individuals are often in the centre of promotion too. [↑](#footnote-ref-5)
5. Shirk, J. L. et al. (2012). Public participation in scientific research: a framework for deliberate design. Ecology and Society 17(2). [↑](#footnote-ref-6)
6. According to INVOLVE NHR, UK [↑](#footnote-ref-7)
7. Stop word elimination, tokenization, lemmatization, and transformation into a term-document matrix. [↑](#footnote-ref-8)