



Social Innovation Concept and Operationalization

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Social Innovation

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ABSTRACT

[DEUTSCH] Dieses Paper bietet einen kurzen Überblick über Definitionen und Konzepte von „Sozialer Innovation“. Darüber hinaus werden Methoden und Instrumente zur Messung sozialer Innovation erläutert und die Multiplikator-Effekte von SI-Investitionen diskutiert.

Das zugrundeliegende Projekt „Alpine Social Innovation Strategy (ASIS)“ wird gefördert aus dem Interreg Alpine Space Programm.

[ENGLISH] This paper offers a brief overview of the concept of Social Innovation. Furthermore, methods and instruments for the measurement of social innovation are explained and the multiplier effects of SI investments are discussed.

The outcomes are based on findings funded by the Interreg Alpine Space Program, Project „Alpine Social Innovation Strategy (ASIS)“

KEYWORDS

Social, innovation, Indicators, Social Entrepreneurship

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1. WHAT IS SOCIAL INNOVATION?^{1 2}

Baregheh et al. (2009) suggest six attributes forming the basis for a concise definition of innovation that can partially be transferred also to SI. Nature of innovation is the innovation's form, indicating if there is an improvement or something completely new. Type of innovation is related to the result which innovation produces, for example a product or a service. Stages of innovation are all the milestones of the innovation process, from the birth of the idea to the sale of it. Social context is to suggest any group of people, social entity or system involved in the innovation process or to indicate the influencing environment. Means of innovation are the resources needed for innovation to take place, for instance, human capital, technology, finances, etc. Last, aim of innovation is its purpose.

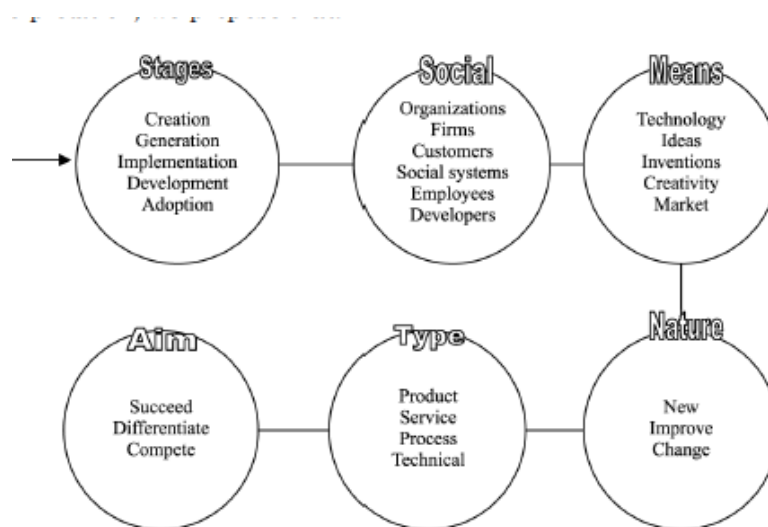


Figure 1. A diagrammatic definition of innovation³

As can be drawn from figure 1, the different attributes compose the model of the innovation process; Baregheh et al. propose that innovation is a procedure with multiple stages and not one discrete act, during which ideas are transformed into new or improved products, services or processes. (Baregheh et al., 2009).

According to Pol and Ville (2009), there is no general consensus in the field of social science and humanities on the precise meaning of social innovation. Hence, some assume this concept as too vague and thus cannot be applied to academic scholarship. Overall, due to the lack of interdisciplinary communication and the consequently terminological inconsistency, the term social innovation is used in very different ways. Pol and Ville (2009) suggest that innovation can be named social, if the new idea could potentially improve the quality or the macro quantity of life, e.g. in terms of better education, better environment, or longer life expectancy.

¹ This working paper was created under the umbrella of the following project and its outcomes: ERDF Interreg Alpine Space Project „Alpine Social Innovation Strategy“ (ASIS).

² The project is also co-financed by the European Regional Development Fund (ERDF) through the Interreg Alpine Space programme.

³ Baregheh et al (2009), p. 1333.

In line with this definition, Voorberg, Bekkers and Tummers (2014) define social innovation as the creation of outcomes that satisfy societal needs. They state that via an open process of participation, exchange and collaboration between stakeholders, including end-users, the outcomes of social innovation change rules, positions and relationships between involved stakeholders (Voorberg / Bekkers / Tummers, 2014: 2).

Franz, Hochgerner and Howaldt (2012) describe social innovation as an innovation that is social, both in its ends and its means. Compared to other sources, they add "intentionality", which also distinguishes social innovation from social change. Social innovation is intentional as its purpose is improving what people do individually or in groups or changing how they perceive what they do. While this is intended, social change is something, which happens. Franz et al. (2012) give two examples to explain this difference. The first example is the concept of fast food restaurant, which was not intended as social in its ends or in its means but was only a profit-driven idea. However, it has changed the way how people were eating before: many people now embrace the concept of eating out together. The second example is the internet, which has fundamentally changed the society, i.e. communication and work. The mentioned examples can be understood as SI as they have changed social practice, meaning the way people decide, behave and act individually or in group. Hence, social innovation leads to new, more effective or efficient social practices with social ends and social means. Furthermore, Franz et al. define social as social demands of specific groups in the society, which are not satisfied by the current market or institutions (Franz, Hochgerner, and Howaldt, 2012). Thus, the innovation has transformed social actions and results in regular social routine (Howaldt, Butzin, Domanski, and Kaletka, 2014).

Howaldt, Butzin, Domanski and Kaletka (2014) assume that social innovation is something, which alters social action. They define it as a combination of social practices, which are conducted by specific people, called actors, or groups of people. The aim of it is to handle some needs or problems better, which cannot be managed with current practices. Hence, the term social in social innovation means that the innovation has transformed social actions and is accepted in the society or sub-groups of it. The transformation's result is regular social routine (Howaldt, Butzin, Domanski, and Kaletka, 2014).

2. WHY IS SOCIAL INNOVATION IMPORTANT?

Overall, the relevance of social innovation is implied by the fact that the society is facing a transition from being industrial to being knowledge- and services based, which requires innovation (Franz, Hochgerner, and Howaldt, 2012). Overall, a close link between SI and development can be assumed (Leubolt and Weinzierl, 2017). Murray, Caulier-Grice and Mulgan (2010) categorize the forces that make SI relevant as follows:

1) Intractable social problems

Improper government policies and lack of incentives and methods in the market have led to market failure. It is difficult for single governments to face problems, which have crossed geographic boundaries, such as inequality, climate change, epidemic and chronic diseases, etc. On the other hand, it is also not easy for the civil society due to the lack of resources and skills.

2) Increasing costs

The finances required to handle or fight these issues tackled by SI initiatives overload the public budget.

3) Old paradigms

Old paradigms in the sense between new needs and the existing structures and institutions are problematic in this context. Innovation scales, where there is more openness to it and where the old system does not oppose resistance to it (Murray, Caulier-Grice and Mulgan, 2010).

Mulgan, Tucker, Ali and Sanders (2007) state the need of social innovation is of pivotal relevance due to the gap between the number of problems arising and the number of solutions provided to them. Social innovation is required as a response to problems related to diversity, conflict, climate change, mental illness, criminal justice, exploitation of mobile technologies and open source methods and many others. There are already results of social innovations, which meet unaddressed needs and improve life, for example, self-health groups, microcredit, charity shops and so on. There is a good amount of research about innovation in business and dedicated investments. However, when it comes to social innovation less effort has been spent so far (Mulgan / Tucker / Ali / Sanders, 2007).

3. FOSTERING AND FUNDING SOCIAL INNOVATION

Taking into consideration the relevance of SI, who could encourage social innovation or simply make it more happen? While of course Social Enterprises – or profit-driven enterprises – can “produce” SI as either a by-catch, or a part of their mission, pure social innovations, which are not business innovations and address needs that profit-driven market systems do not satisfy, can be a focus of public actors. Social innovators have no material means and incentives to invest in pure social innovations as they are very often new public goods (others cannot be excluded from their benefits, and the marginal cost of an additional person using them is zero). Private markets are less likely to dedicate resources to public goods, hence to pure social innovations (Pol and Ville, 2009).

Voorberg, Bekkers and Tummers (2014) emphasize that a necessary condition for social innovation in the public sector is the participation of the citizens or the overall public who is the end-user. Innovative public services, which meet the needs of citizens require co-creation or co-production between policy makers and citizens. There are three types of co-creation in social innovation and are meant in terms of citizens' involvement degree. First, citizens can be co-implementers of services, which in the past only the government has carried out. Second, they can be co-designers, meaning that they can be involved in content and process of service delivery. Third, they can be initiators of services. The factors which influence a citizen's participation are, for instance, adequate communication channels and training of both sides (public officials and citizens), attitudes (i.e., risk-friendly or risk-averse) of policy makers towards the idea of involvement of citizens. Other factors are the willingness of the citizen, determined by education level, family and personality aspects; the awareness regarding the ability and opportunity to get involved; the availability of a social capital; and the responsibility of public authorities to successfully achieve co-creation (Voorberg, Bekkers, and Tummers, 2014).

Overall, there are very diverse options to fund social innovation. Generally, grant funding is offered by a) government or international institutions that do not expect a financial return, but are investing to reach the socially desirable outcome, SI as well as b) a lot of non-profit organizations. Nonetheless, there is, c), a range of investors, that are looking for profit, at least in the long run and some social enterprise models and social innovation projects may generate sufficient profits to make them attractive targets for traditional equity and debt investment. Hence, the following sources are to be found in addition to the mentioned funds:

- Angel investors: wealthy individuals give small to large amounts of financial re-sources, awaiting profit in the future
- Seed funding firms: companies that invest small amounts of early-stage capital
- Venture capital funds: enterprises that pool and invest large amounts of money in emerging businesses
- Crowd-funding: individual investors give small sums with or without expecting profit in the future

The funding landscape for SI according to the Alpine Space is diverse and multi-leveled, comprising very diverse projects and aspects of social innovation. Overall, all sources of funding as deliberated above are to be found. Nonetheless, many SI projects are at least partly funded by “official” bodies – institutions of the EU, the national, regional, or local level. Overall, the European Union acts via specific programs, while the single member states have implemented own strategies and programs, sometimes complementing EU initiatives, sometimes with a different focus. Moreover, most regions in the single member states, as well as sometimes the communal level, has own public policies to foster SI as well as funding policies.

While overall programs and projects on innovation are well-developed, SI is a relatively new issue on the EU level, in particular in the Alpine Space. Since 2010, the EU Commission is increasingly active in the field, the Innovation Union initiative (2010) and of the Social Investment Package (2013) underpin this. Overall, the EU Commission’s actions aim to facilitate the inducement, uptake and scaling-up of social innovation solutions.

With the Europe 2020 Strategy and the Innovative Union flagship initiative under the Europe 2020 strategy the EU took stock of the idea of SI, recognizing the relevance of the idea of SI, as well as providing specific action in that field. The Employment and Social Innovation Programme, Horizon 2020, comprises SI initiatives particularly under the SME instrument and the Collective Awareness Platforms. Under the umbrella of Horizon 2020, the Responsible Research and Innovation (RRI) is used as a task to involve stakeholders and the public in research and innovation processes and to align its outcomes to social values. Furthermore, the EU structural and investment funds provide (via the member states) funding for SI. The Commission also offers seed funding for the development of innovative ideas that address social challenges via its Social Challenges Platform. Specific initiatives, inter alia the social innovation portal, social innovation competitions (e.g. the Horizon Prize for Social Innovation), the 2011 Social Business Initiative (SBI) and the establishment of an Expert Group on Social Entrepreneurship (GECES) highlight the focus on SI on the EU level.

On the member states level, a wide range of programs exist. The diversity of actors is reflected not only by the public policies, but also the funding schemes.

4. SUCCESS FACTORS AND MULTIPLIERS OF SOCIAL INNOVATION

This chapter provides a non-exhaustive overview of indicators to be used in the SI context and outlines some models, how the relation between SI as the dependent variable and other independent variables could be. The implicit assumption is that specific factors contribute positively or negatively to SI, hence acting as driving factors or hampering factors of SI in a regional entity.

We assume – based on the relevant literature on innovation, social innovation, as well as institutional economics – that there is a specific set of drivers that are able to induce SI, or at least help to foster the implementation of SI in a regional entity. These drivers, so our assumption, work on the macro-level. In addition to these macro-factors, there may be factors that lead to the success of a specific SI project; these factors work on the meso- and micro-level. Lastly, the question arises which impact investment in SI has – what are the multiplier effects of SI?

Thus, we are investigating three “dimensions” of SI:

1. We are interested which factors enable countries to become “socially innovative”, or fosters the development of SI-related action and SI-projects on a country-level.
2. Furthermore, on a more micro-level, factors that make single SI-projects successful in the sense of delivering real social innovation as an outcome are focused on
3. The impact of SI projects on regional development in the sense of multiplier effects of SI investments

4.1. GENERAL DELIBERATIONS

Based on the heterogeneous nature of SI projects and the wide range of SI, the basics of the model are rooted in a qualitative analysis. We propose different general models for analysis: One for the macro-model on country basis (a) that aims to identify the link between national characteristics (or also regional characteristics, as given in the Alpine Space) and the Social Innovativeness of that space (see Figure 2). A second one for the success of single SI-projects that is fueled by macro-, meso, and micro-indicators. (see Figure 3) Third, we propose a model that tackles the question of the impact of investment in SI, or SI impact: What are the multiplier effects of different SI projects?

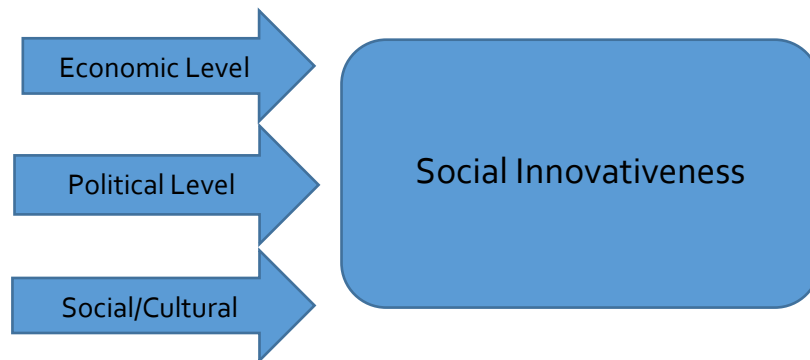


Figure 2: Model for Social Innovativeness of Entities (national/regional)

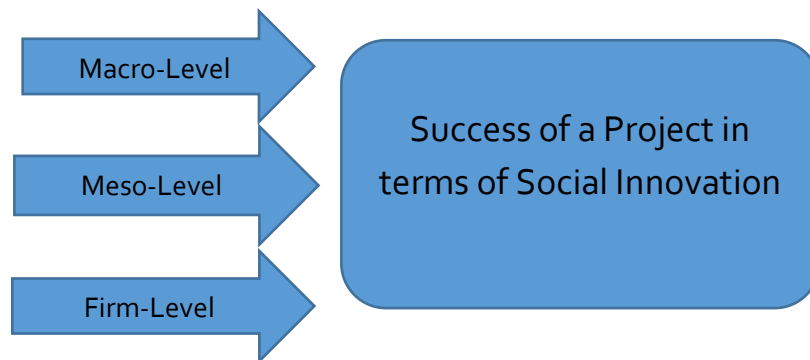


Figure 3: Model for Success of SI-Projects

4.2. INDICATORS FOR SOCIAL INNOVATION

Overall, indicators can be interpreted as a way of seeing the big picture by looking at a small piece of the puzzle only. Hence, the quality of the indicators used is of pivotal importance, they must be as specific as possible with respect to a particular issue, in order to maximize the usefulness of the information for decision-making; they have to be scientifically credible, unbiased and representative of the condition concerned. This is even more important with a view on a somewhat “blurry” concept as SI still is.

Dependent Variable:

The dependent variable in our model is a measure for SI. As outlined before, SI can hardly be measured by quantitative indicators. What is successful SI in terms of meeting new societal needs, providing solutions to new problems, involving stakeholder groups and changing social practices? Many of these factors are hard to quantify in terms of indicator development – how can one quantify societal change? Furthermore, many of the developments being classified as SI have a long time frame, so only an ex post evaluation with a long time lag makes sense. Due to these constraints, at the current stage there is not much data available from existing data sources that can be used in formal models. Nonetheless, these indicators and data points are necessary to measure SI for the sake to identify success factors of SI, as well as to develop and run a formal model on SI. Following the idea that social innovation leads to new, more effective or efficient social practices with social ends and social means, the authors acknowledges

the complexity of quantitatively approaching the issue even if the models presented are somewhat restricted (Franz, Hochgerner, and Howaldt, 2012).

The following indicators were identified and taken into consideration as generally suitable for SI projects (see Table 1).

Indicators for measuring SI
Macro-Level / Country-Level
Number of SI projects
Investment in SI projects
Number and Scope of policies to foster SI
Meso-/Micro-Level / Project Level
Individual satisfaction/quality of life of individuals addressed by specific SI projects or initiatives
Stakeholders involved
Diversity of Stakeholders involved
Scope/Range: sub-municipal or single quarters/municipal/regional/national/transnational
Sustainability: Time period of existence of the SI project
Sustainability: Increasing range of projects (e.g. increasing number of stakeholders involved over time)
Sustainability: Further developments fostered by a specific SI-project or initiatives in terms e.g. of enterprises founded out of a SI initiative, or jobs created
Structural Changes in the national/regional/local administration (e.g. new units for SI, policy programs for SI, the creation of funds for SI, the creation of study programs for SI)
Quality Change (measured as the gap/improvement in service delivery, or outcome numbers of specific services)

Table 1: Potential Indicators for SI (own depiction, based on the ASIS project)

These indicators as presented above can be used as the dependent variable, indicating for social innovativeness or the “success” of SI on project level, even if one can argue that some of them also could be used as independent variables, depending on the concrete definition of SI in a specific model. The indicators as presented can be used singularly, one by one, as well as combined in terms of an index to be developed.

Index Development:

Overall, indices are a useful, but somewhat complex tool to indicate for specific characteristics. Index variables have to be constructed in a careful manner, as they have special features that may make them complex to apply. Generally, an index is derived from multiple items, this implies that the items are summarized or combined (and sometimes then divided by the number of items). This means that they are converting a specific procedure into a single measurement, number or scale. The underlying items that form the basis of the index measure something that is underlying, quantitative and on a measurement continuum, hence, indices are often ordinal in nature. As an answer or response to an item cannot be classified in terms of “yes” or “no”, thus, an index variable constitutes a scale measurement that is indicative of some hypothetical construct that can typically not be measured by a single question

or item. Accordingly, higher value of an index might indicate 'more off' and lower values 'less off', with neither being 'right' or 'wrong'. Additionally, an index has to be evaluated in terms of its reliability and validity. These aspects are taken into consideration developing the index for SI as it will be used in future project stages in WP4. Overall, there are little efforts to develop indices for SI. The EIU (2016) developed an SI-Index, which assesses the capacity of national states to enable social innovation. This Index includes qualitative as well as quantitative indicators, in detail seven quantitative data points and ten qualitative scores grouped into four pillars. As for the construction, the data points within each pillar are normalized (0-worst, 100-best) and assigned weights. Based on this, scores for each pillar are calculated and also normalized out of 100. Each pillar is given a different weight in the overall score, which is also out of 100.

In detail, the pillars, their weights and constituent indicators are as follows:

Policy and Institutional Framework (weight: 44.44%)	Financing (weight: 22.22%)	Entrepreneurship (weight: 15%)	Society (weight: 18.33%)
Existence of national policy on social innovation	Availability of government financing to promote social innovation	Risk-taking mindset	Culture of volunteerism
Social innovation research and impact	Ease of getting credit	Citizen's attitude towards entrepreneurship	Political participation
Legal framework for social enterprises	Total public social expenditure	Ease of starting a business	Civil society engagement
Effectiveness of system in policy implementation		Development of clusters	Trust in society Press freedom
Rule of law			

Table 2: The four pillars of the EIU Index (own depiction)

Due to the nature of the index, it cannot be used as the dependent variable in many cases, as it does not measure the outputs of social innovation, or the extent to which SI is achieving its aims. Nonetheless, the approach is very useful for other studies that focus on the "social innovativeness" of countries, in particular in comparative macro-analyses.

Independent Variables:

Independent variables are those factors that influence the dependent variable. Hence, they are the driving forces that causally affect the outcome, measured using the dependent variable. Following the related literature, independent variables must not be linked to each other (no correlation between single independent variables), and have to be unbiased. In this study, based on our analysis, for the independent variables 3 bundles of factors that influence the development of SI are taken into consideration: Macro-level Institutions, meso-conditions, and micro-level project-related factors.

4.2.1. MACRO-LEVEL CONDITIONS

The main hypothesis of institutional economics is that institutions strongly influence human behaviour and therefore also have a strong relevance for the growth and development of countries (or lack thereof) (Acemoglu and Robinson, 2013). While an exclusive and universally accepted definition of institutions is still missing, a rather broad consensus has emerged in the literature on what constitutes institutions and what their principal functions and effects are. Following North (1991, 1992), institutions are interpreted as ‘humanly devised constraints that structure political, economic, and social interactions’ (North, 1991).

They constitute the framework of a society, which to a high degree determines the individuals’ activities by providing crucial information and therefore reducing uncertainty. This framework does not only comprise the so-called material institutions, but also all mechanisms that are able to enforce these very institutions. Furthermore, formal as well as informal institutions are comprised by that definition.

In particular, institutions that determine the rules of the game and shape governance structures are the focus of NIE and the quantitative approaches that are applied in this context. Institutions at these levels are often seen as vital determinants for economic wealth/welfare (or the lack thereof). At the same time it is relatively easy to identify – in a normative, theory-based approach – how these institutions should be structured to reach the overall goal of economic wellbeing and growth, including innovativeness and the ability of social innovation in a country.

In this context, culture can be understood as a shared meaning-system that is used for interpretation and evaluation of events and practices (Erez and Earley, 1993; Hofstede 2003). E.g. Hofstede, Hofstede and Minkov (2010, p. 6) define culture as ‘the collective programming of the mind that distinguishes the members of one group or category of people from others’. This implies that meaning-systems show differences in various factors, which can be used to distinguish between these cultures. These factors are usually called cultural dimensions. A cultural dimension can be defined as “an aspect of a culture that can be measured relative to other cultures” (Hofstede, Hofstede and Minkov 2010, p. 31).

In the relevant literature, different ways are modelled in how far cultural factors can be measured. Based on different works of House and co-authors (House et al. 2002, 2004, 2013), we take the following dimensions into consideration, differentiating between the *value scale* (how it should be in normative terms) and the *practice scale* (how it actually is in a society).

Cultural Dimension	Definition
Power Distance	The degree to which members of a collective expect power to be distributed equally.
Uncertainty Avoidance	The extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events.
Humane Orientation	The degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring and kind to others.
Institutional/Societal Collectivism	The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.

In-Group Collectivism	The degree to which individuals express pride, loyalty, and cohesiveness in their organizations and families.
Assertiveness	The degree to which individuals are assertive, confrontational and aggressive in their relationship with others.
Gender Egalitarianism	The degree to which a collective minimizes gender inequality.
Future Orientation	The extent to which individuals engage in future-oriented behaviors such as delaying gratification, planning, and investing in the future.
Performance Orientation	The degree to which a collective encourages and rewards group members for performance improvement and excellence.

Table 3: Definition of Cultural Dimensions (Source: House et al. 2002, p. 6)

Based on these delineations, we consider the country-level institutions: political institutions, economic institutions, public and funding policies, as well as informal institutions as culture, values or norms.

4.2.2. MESO-LEVEL CONDITIONS

Meso-level conditions, so our assumption, influence the probability that SI is developed by an enabling environment. This can include the demographic structure of a region or municipality (rural/urban), the education level and the access to skilled contributors, the demographic overall structure (age/sex/diversity), meso-institutional abnormalities or a fostering environment (e.g. through monetary inflows due to regional or structural funds, remittances).

4.2.3. MICRO-LEVEL PROJECT FACTORS

Micro-level factors work on the project level. All project-inherent factors – funding in €, topic, project design, diversity and kind of stakeholders etc. are included in this level.

4.3. MODEL SPECIFICATIONS

The following chapters develop three models as deliberated in the earlier mentioned three research aims:

1. Macro Factors: factors that enable countries to become “socially innovative”, or fosters the development of SI-related action and SI-projects on a country-level
2. Project-level factors: Factors that make single SI-projects successful in the sense of delivering real social innovation
3. Multiplier effects of SI investments: Impact of SI projects on regional development in the sense of multiplier effects of SI investments

4.3.1. MACRO-FACTORS: SOCIAL INNOVATIVENESS OF A COUNTRY

As discussed, the ability of a regional entity (region, country) to develop SI may be shaped by several factors. Amongst Macro-level factors, surely political institutions and the overall environment to foster SI is of relevance. For the European Union and the Alpine Space in particular, many of these framework conditions are the same as the regulatory framework hits all EU countries likewise. The same applies to funding in the narrow sense: In our approach, as we included only project that have official funding, we control for sheer political factors as e.g. the existence of funding opportunities. Hence, there is no variation in the data when it comes to general access to EU-funding. Nonetheless, we include the respective dimensions in our basic model, as it should be applicable on country-sets worldwide with a higher variety in institutions and framework conditions.

Beyond these formal institutional factors, national culture may be of particular importance on the macro level. In the following, we draw to a model developed by Deckert and Schomaker (2018). In this model we go beyond previous research in different way by grouping different cultural dimensions and therewith adds substantially to the understanding of cultural factors and their relation to innovativeness. In detail, it divides the cultural dimensions of the GLOBE study into three categories that comprise political, social and individual aspects, respectively. These categories, so our basic hypothesis, impact social innovativeness via different channels.

Category	Cultural Dimension	Practice Scale	Value Scale
Political dimensions	Power Distance	-	0
	In-Group Collectivism	-	0
	Performance Orientation	+	0
Social dimensions	Assertiveness	0	0
	Gender Egalitarianism	0	+
	Humane Orientation	0	+
Individual dimensions	Uncertainty Avoidance	+	-
	Future Orientation	+	-
	Institutional Collectivism	+	-

0: no significant result

+: positive relation

-: negative relation

Table 4: Categories of Cultural Dimensions and their Predicted Relation to Social Innovation

(Source: Deckert and Schomaker 2018)

As the political and economic impulses coming from the EU-level are somewhat similar within the Alpine Space, the number and scope of policies is not a suitable indicator for the data given – for a world sample, this indicator would be useful anyhow. More or less the same applies to investment in SI projects. Hence,

we take the corrected number of SI projects as the dependent variable for social innovativeness of a country.

Macro-Level / Country-Level
Number of SI projects (standardized by country size/population size)
Investment in SI projects
Number and Scope of policies to foster SI

Table 5: Macro-Level/Country Level (own depiction)

We apply the outlined, culture-based model to explain the social innovativeness of a respective country. To control for country-specific, undetected fixed effects, we furthermore apply a country dummy that captures these effects for each country:

$$\text{Social Innovativeness of County } i = \text{Political Dimensions } i + \text{Social Dimensions } i + \text{Individual Dimensions } i + \text{Country Dummy } i + \epsilon$$

With:

ϵ : residual

4.3.2. PROJECT-LEVEL FACTORS: SUCCESS OF A PROJECT IN TERMS OF SOCIAL INNOVATION

Beyond the factors scrutinized above, on the project level, additional factors contribute to the success of a SI project. Success in terms of really generating SI can be defined – following the overall definition as outlined – as a sustainable, inclusive change of living conditions and societal conditions. Some of the indicators provided below may be able to grasp this definition, but nonetheless, many of the potential outcome variables are almost impossible to measure quantitatively, or large-scale data is not available at the moment.

Meso-/Micro-/Project Level
Individual satisfaction/quality of life of individuals addressed by specific SI projects or initiatives
Stakeholders involved
Diversity of Stakeholders involved
Scope/Range: sub-municipal or single quarters/municipal/regional/national/transnational
Sustainability1: Time period of existence of the SI project
Sustainability2: Increasing range of projects (e.g. increasing number of stakeholders involved over time)

Sustainability ₃ : Further developments fostered by a specific SI-project or initiatives in terms e.g. of enterprises founded out of a SI initiative, or jobs created
Structural Changes in the national/regional/local administration (e.g. new units for SI, policy programs for SI, the creation of funds for SI, the creation of study programs for SI)
Quality Change (measured as the gap/improvement in service delivery, or outcome numbers of specific services)

Table 6: Meso-/Micro-/Project Level (own depiction)

Hence, based on the deliberations above, we offer a model that uses the indicators as proposed, or the newly-developed index as the dependent variable, acknowledging that this only captures a part of SI, not the whole picture. The independent variables include – not exhaustive, and subject to further development of the model – the project design (kind of design – social enterprise for profit, Non-Profit-Organization) as an ordinal information, funding in €, and the topic (sector – environment, social, technology, ...) as ordinal information.

$$\text{Social Innovation (Index SI) of Project } i = \text{Funding in } \text{€ } i + \text{topic } i + \text{project design } i + \epsilon$$

With:

ϵ : residual

4.3.3. MULTIPLIER EFFECTS OF SI INVESTMENTS

As outlined in economic theory, supported by empirical evidence from a variety of (comparative) economic studies, each unit of governmental spending increases the Gross Domestic Product (GDP) by a multiple of the original investment. Current studies deliver that infrastructure spending has a multiplier of least two, while the typical fiscal multiplier is between 0.5 and 1.5, with most studies arguing that the typical corridor may be between 0.8 -1.2 (Christiano et al. 2011). These effects can be observed, both in the short and medium run. The short-run effect can be assumed to be consistent with the traditional Keynesian channel: output increases because of a rise in aggregate demand, combined with slow-to-adjust prices. The positive response of GDP in the medium run is in line with a supply-side effect due to an increase in the economy's productive capacity.

As for SI, it is plausible to assume that the multiplier effects as outlined above are in place. The interesting feature at this point is the size of the multiplier: while on the basis of the literature it cannot be argued that the government-spending multiplier usually is substantially larger than one, for infrastructure it often is. Overall, the theory assumes that every economic impulse (investment) generates direct effects, indirect effects (from inputs) and induced effects (due to the outputs generated) (see Horvath et al. 2016). Hence, depending on the sector (private/public/import/export...), type and kind of projects, different multipliers may exist. This is even more plausible with a view on the different countries in the Alpine Space, as evidence supports the assumption that multiplier effects are of different strength in different

countries/regions. The labor market multiplier includes newly created jobs, but also the efficient use of already existing jobs.

As for Austria, the following multiplier can be assumed (Horvath et al. 2016):

Impulse	Multiplier
Private Consumption	1,8
Public Consumption	2,0
Private Investment	1,6
Other Investment (software and F&E)	1,7
Active Labor Market Policies	1,9

Table 7: Economic impulses and Multiplier-Effect (own depiction)

Overall, there is the debate and some concern among scholars of SI that efforts to promote it focus too heavily on social enterprise and social entrepreneurship. Indeed, a lot of social innovation activities take place outside any form of enterprise (in public sector bodies, for example) (TEIU 2016: 26). Hence, for our model we do not only include the multiplier for private investment or consumption, but also provide a specification using the public spending multiplier. For some purposes we use the multiplier for private investment, nonetheless, but the caveat here is that – depending on the supply chain – to be precise the multiplier may have to be corrected for missing input production (e.g. for social enterprises that get inputs without to pay for, from food-saving, upcycling of rubbish etc.).

Based on these deliberations, we propose for each country a model that estimates the economic impact of SI – depending on the type of SI activity – as follows:

For Social Enterprises:
Impact = M_{PI} * Investment €

For SI initiatives that create jobs due to public funding:
Impact = M_{LM} * Investment €

For SI initiatives that work primarily in technological innovation:
Impact = M_{OI} * Investment €

For SI initiatives that generate infrastructure (e.g. social infrastructure):
Impact = M_{PUI} * Investment €

*With:

M_{PC} : Multiplier Private Consumption

M_{PI} : Multiplier Private Investment

M_{PII} : Multiplier Public Investment

M_{LM} : Multiplier Labor Market Policy

M_{OI} : Multiplier Other Investment

5. CONCLUSION

Based on the deliberations above, we acknowledge the complexity of the idea of SI, given the very different sectors and topics covered. In particular the quantification of this concept remains blurry so far. This is where our research departs, we propose different indicators and models to be applied in the context of SI related research. Depending on data availability and the focus of research, the indicators and models as outlined above may provide a starting point for methodological advancement in studying the concept of social innovation, and an increased focus also on (quantitative) empirical research.

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