A Methodological Framework for Measuring Social Innovation

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CONTENTS

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A Methodological Framework for Measuring Social Innovation

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Abstract: »*Ein methodischer Ansatz zur Messung sozialer Innovation*«. This paper introduces a methodological framework to develop dimensions for measuring social innovation capacities of spatial units. The framework is designed to ensure the compatibility of these dimensions with theoretical concepts as well as innovative practices. Therefore, theoretical top-down strategies have been combined with an empirical bottom-up strategy. From the top-down perspective, we assess opportunities and limits of existing metrics of technological-economic innovation in the light of theoretical requirements of social innovation. As an interim result we present measurement dimensions for social innovation at the national level. Within the framework of the bottom-up strategy, we start our analysis from the local level. In qualitative case studies in four German cities, we investigate whether these dimensions are of significance for the innovative practice. In order to study the innovation process in the context of innovative practice we look at the example of the integration of migrants and discuss systemic determinants of social innovativeness. Finally, these systemic implications have been used to modify the measurement dimensions and to adjust them to the local level.

Keywords: Social innovation, innovation indicators, measurement, mixed-methods, urban case studies, integration of migrants, spatial analysis.

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1. Introduction[1]

Innovations seem to be an inherent sign of progress, development, creativity, and the feeling for the right timing to realise ideas. The term 'innovation' itself evolved over time: Since it originates from the time of industrialisation, the expression was initially used in the context of technological inventions. However, the term has been widened to define a broader agenda of entrepreneurial activity embedded by Schumpeter's (1912 [1934]) theory of economic cycles. In times of economic competition in a globalised world, the focus is primarily on economic innovation. Nonetheless, in recent decades a change of consciousness in society towards social responsibility and sensibility can be recognized and be illustrated by buzzwords such as *demographic change, quality of life, or sustainable development*. In the light of this terminological shift, a purely technically-oriented understanding of innovation can be criticised. Howaldt and Schwarz (2010, 15ff) even introduce a new innovation paradigm and suggest that a new type of innovation has emerged – social innovation.

The nature of innovation is not only of academic interest. Therefore, efforts to operationalise the concept, mostly in the context of evidence-based policy making, and to make the term 'innovation' more tangible, can be observed. Such approaches use primary and secondary data in order to decide which firms, sectors, regions, or countries are more or less innovative. Despite some critical objections against the employed indicators (e.g. Kleinknecht et al. 2002; Griliches 1990), today there is at least a mainstream consensus as to how innovation can be measured – known as *fourth generation of innovation metrics* (Milbergs and Vonortas 2004, 4f) that subsumes indicators of systemic environment, of the process of innovation, and of the intangible aspects of innovations. The situation is rather different if we look at the research on the measurement of *social* innovation: Neither is there a consensus as to what social innovation means (Mulgan 2012) nor do established metrics for social innovation exist.

The growing importance of social innovation within policy circles and academia makes it necessary to explore ways how metrics can be applied (Reeder et al. 2012; Wobbe 2012) and to overcome the narrow focus of metrics on economic issues (Hoelscher and Schubert 2015). The measurement of social innovation can start from different perspectives: On the one hand, the innovation performance of projects can be evaluated; on the other hand, one can assess the innovativeness of organisations. Furthermore, the innovativeness of spatial

[1] The research leading to these results has received funding from the European Union's 7th Framework Programme (Project TEPSIE/proposal: 266941) and the Research Council of the University of Heidelberg Field of Focus 4 (Self-Regulation and Regulation: Individuals and Organisations).

units, i.e. societies as a whole, can be analysed at the national (macro), regional (meso), or municipal level (micro). For this study, the spatial approach at the societal level was chosen, including insights from the macro and micro-level.

Developing social innovation metrics brings with it challenges: Not only is the research on social innovation still in its early stages, social innovation processes themselves are regarded as complex and socially embedded. The intention of this paper is to introduce dimensions for measuring social innovation that fulfill two conditions:

1) These dimensions should include insights from existing metrics and combine data of different types, forms, and sources in order to avoid the shortcomings of existing approaches;
2) They must be examined against innovative practice at the local level.

According to Reeder et al. (2012, 36) the development of social innovation metrics is an 'iterative process.' To start this iterative process, we combine different methods and change back and forth between the macro and micro-perspective mediated by theoretical reflections. Thus, this article proceeds as follows: Firstly, the underlying definition of social innovation (section 2) and the research agenda (section 3), including the research question and a broad overview of the selected approach, are presented. Secondly, the two subsequent sections deal with the methodological framework: From the top-down perspective (section 4) a screening of existing innovation metrics is introduced and as a result of the screening a set of measurement dimensions (Bund et al. 2013a; Krlev et al. 2014) at the macro level is presented. From the bottom-up perspective (section 5) social innovation processes are analysed, and the question as to whether the measurement dimensions reflect innovative practice at the local level is examined. Finally, key findings that combine the results from both methodological lines are presented (section 6). In the outlook of the article the strengths and weaknesses of the chosen approach and future research questions are assessed.

2. Defining Social Innovations

Schumpeter's (1912 [1934]) seminal differentiation of types of innovation is still present in the definition of the *Oslo Manual* (OECD and Eurostat 2005), the most prominent guide for innovation measurement in which innovation is defined as the "implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations" (OECD and Eurostat 2005, 46). The long discussion on innovation brought some changes, too. Not only companies are agents of innovations, as the tradition of International Business Studies presumes. In literature also spatial analysis associated with research on societal innovation systems, milieus, or clusters

in different spatial scales such as countries, regions, or local places, are referred to (for an overview, see Heidenreich and Mattes 2012, 30).

And it goes even further than that: Not only is the concept of (business) innovation socialised, also social structures themselves are seen as objects of innovation. Zapf (1989, 177ff) stated that the productivity of technological innovation is based on the manipulation of physical energy and materials, whereas the productivity of social innovation is based on human creativity and symbolic resources. He compared economies of scale in the case of technological innovation to the power of mobilisation in the case of social innovation (Zapf 1989, 177f). In this line of research, the solid nature of technological innovations was often contrasted with the abstract nature of social innovation (Gillwald 2000, 36, 42).

This perspective should be treated with caution: Starting in the mid-1980s, evidence for the *social construction of technology* can be found. The construction of innovation – regardless of the type of innovation – is therefore always more or less socially embedded. Gillwald (2000, 42) points out that both types of innovation can be regarded as societal achievements. However, the embeddedness of a particular social innovation is especially pronounced because according to Gillwald (2000, 37, 43) the concept of social innovation is even defined in terms of adaptations which take place in the environment through the innovation. There is a certain danger that the difference between traditional technological or business innovation and social innovation disappears when the necessary social embedding of all innovations is emphasised.

The mentioned discourses are closely examined by The Young Foundation which did extensive work on defining social innovation within the framework of the TEPSIE project.[2] There is still no common definition of social innovation. A rough typology (The Young Foundation 2012, 6f) shows different strands of literature. The term 'social innovation' describes *societal transformations*, the *development of new products, services and programmes*, *organisational management, social entrepreneurship*, or even a model of *governance and empowerment*. For the use of the term in the TEPSIE project, The Young Foundation provides a definition of social innovations that intends to integrate the discussions:

> Social innovations are new solutions (products, services, models, markets, processes, etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and/or better use of assets and resources. In other words, social innovations are both good for society and enhance society's capacity to act (The Young Foundation 2012, 18).

[2] The EU-sponsored TEPSIE project is a research collaboration between six European institutions led by the Danish Technological Institute and The Young Foundation and runs from 2012-2015. TEPSIE is an acronym for 'The Theoretical, Empirical and Policy Foundations for Building Social Innovation in Europe.' For more information, see: <http://www.tepsie.eu>.

Our approach follows the definition given by The Young Foundation. From a more analytical perspective, this definition includes the three interrelated dimensions of social innovation that occur in the debate on social innovation and are described by Moulaert et al. (2005, 1976, 1987):

1) *content/product dimension*, i.e. the satisfaction of unsatisfied human needs;
2) *process dimension* that implies changes in social relations and allows for the satisfaction of societal needs and a level of participation (especially of deprived groups);
3) *empowerment dimension* (power relation), i.e. the improvement of sociopolitical capability and access to resources necessary to trigger the right to satisfaction of human needs and to participation.

We believe that the clear focus on unsatisfied social needs, understood as human needs whose satisfaction is at large the responsibility of society, is at the core of social innovation. Therefore, the product dimension is the core criterion or, to put it this way, an exclusion criterion by means of which an innovation is classified as social innovation. In our view the process and empowerment dimensions alone cannot be regarded as satisfying conditions for the presence of a social innovation. Moulaert et al. (2005, 1972) state that while academic discussions often focus on the process and empowerment dimensions by emphasising governance and capacity building, in times of increasing societal challenges and retrenchment of the welfare state the product dimension in terms of services and measures addressing social needs gains in importance. This does not contradict the fact that social innovation processes are often characterised by a combination of all three dimensions.

3. Research Agenda of Developing a Tool for Measuring Social Innovation

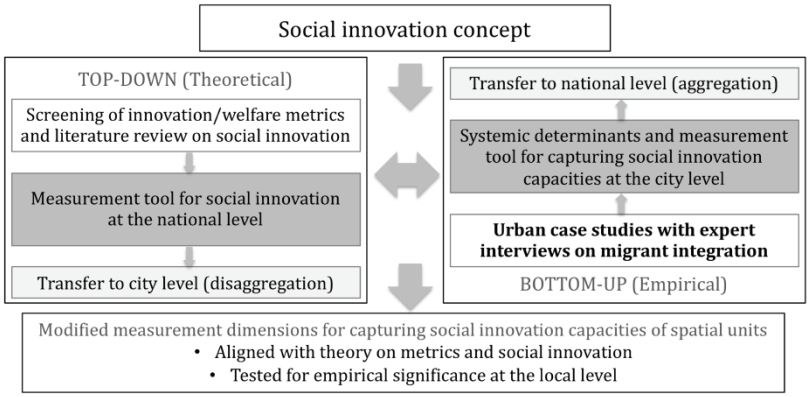
3.1 Overview of the Methodological Approach

As stated in the introduction, the societal level has been selected as the preferred level for the measurement approach. In innovation metrics at the societal level the innovation process itself often remains a black box. The Oslo Manual (OECD and Eurostat 2005, 20f) recommends using a subject approach by means of which a selected organisation can be examined and the innovation process can be reflected in a more direct way. With regard to technological-economic innovation this approach may be adequate. However, when it comes

to social innovations, a clear attribution becomes difficult.[3] Even in the narrow field of social services, the source of a new approach is difficult to identify. New ideas diffuse freely through civil society, networks, or public bodies.

Therefore, we complemented the measurement perspective at the societal macro-level by an empirical-qualitative study at the societal local micro-level. In comparison to the use of a single method, such a combination of quantitative and qualitative research designs enables a deeper understanding of the research subject (Kelle 2008, 296f) and is, in our view, the best way to validate macro-level metrics. The undertaken approach is illustrated in Figure 1.

Figure 1: Methodological Approach



Based on our definition of social innovation, we adopted two methodological approaches. The first was mainly part of the TEPSIE project and the second of the interdisciplinary project sponsored by the Research Council of the University of Heidelberg, *Field of Focus 4*.

Within the framework of the TEPSIE project, a blueprint of quantitative indicators at the national level was developed on the basis of theoretical insights (first approach, top-down). Therefore, a screening of innovation and welfare metrics was conducted and was backed up by a literature review on social innovation.[4] The literature review was conducted to explore the existing synergies between the methodological measurement perspective of the screening and the particular requirements of social innovation discussed in the literature. The initial meas-

[3] Future possibilities to include relevant organisations into the European Community Innovation Surveys (CIS) are discussed in Krlev et al. (2014) and Reeder et al. (2012). The CIS are conducted across the European Union, in Norway, and in Iceland by the respective national statistical offices and provide, inter alia, the Innovation Union Scoreboard 2013 with six indicators.

[4] The inclusion of innovation metrics and welfare metrics enable us to investigate both elements of social innovation, the *innovation* and the *social aspect*.

urement model and blueprint of indicators exclusively based on the top-down strategy and can be found in Bund et al. (2013a) and Krlev et al. (2014).

In most other research on indicators, priority is given to the standard statistical testing of indicators (e.g. testing of multicollinearity). Although we appreciate these research efforts, we argue that an exclusive use of such a research design is insufficient for testing the above mentioned indicators. The complexity, the social embeddedness, and the fact that the research object, i.e. social innovation, is still in its early stages, make it necessary to look beyond the variables and dimensions and to consider in-depth the social reality. Therefore, the second methodological approach focused on the local level, at which we conducted qualitative interviews with experts from four different cities in Germany in the field of migrant integration (bottom-up; see also 3.2). The objective of the qualitative urban case studies is to explore in-depth social innovation practices and justify the measurement dimensions against the background of innovative practices.

Finally, we combine the two above mentioned methodologies, which results in modified measurement dimensions that meet the particular requirements of social innovation at the local level. These dimensions allow for more specific insights and recommendations to local authorities and practitioners for shaping the environment for innovative practice. The insights from the empirical study on innovative practices in four different German cities allow us, in turn, to draw conclusions regarding the respective measurement dimensions at the national level and to provide recommendations, most of all for national policy making.

3.2 Case Study Research on Integration of Migrants

Before explaining the methodological framework in more detail, we want to highlight the field perspective adopted in the second methodological approach (bottom-up). On account of the vast variety of fields in which social innovation can occur, it was indispensable to limit the analysis to a specific field of social innovation and to find an adequate way to capture social innovation in its social context.

In our study, we concentrate on the field of migrant integration. This field is highly important, in particular against the background of the increasing number of refugees and the growing need for skilled employees in some European countries. According to Esser (2001, 2006), the emergence and entrenchment of ethnic inequalities are the most visible consequences of migration. He defines social integration – distinguishing it from system integration – as inclusion or exclusion of actors in an existing social system and the resulting equal or unequal distribution according to ethnic origin (Esser 2006, 7). In this regard, Heckmann (1997) associates social integration with structural integration (e.g. participation in the education system), cultural integration (e.g. cultural knowledge about the immigration country), social integration (e.g. social contacts), and identificational integration (e.g. feeling of belonging).

With reference to the definition of social innovation outlined in section 2, we define innovative solutions as ways, e.g. provided services or undertaken measures, to meet the challenges of a heterogeneous immigration society and to enhance inclusion processes in these four above mentioned fields of integration. Innovative measures and initiatives have to cope with cultural heterogeneity and existing starting points. This implies ways to effectively use resources and to empower people to participate in the social system, e.g. in education, the labour market, or social or political life. This investigation of innovative processes in the context of migrant integration allows for studying the systemic determinants of social innovation processes in their context and therefore the *grammatics* (Hutter et al. 2015, in this HSR Special Issue) of social innovation.

4. Quantitative Innovation Metrics

4.1 State-of-the-Art Measurement of Innovation

The TEPSIE blueprint of social innovation indicators was the starting point for the qualitative case studies. The basis of its development was a thorough literature review and a screening of different indicator sets. For more details on the full screening and its results, see Bund et al. (2013a), Bund et al. (2013b), and Krlev et al. (2014). This methodological step aimed at providing a conceptual and theoretical basis for the selection of indicators. As to the derivation of indicators, Lindtner (1982, 104, 111f) emphasises the suitability of a combination of theoretical and empirical testing. This corresponds to the role of indicators in the mediation process between theory and empirical research (Priller 1982, 44, 49). The indicator screening was conducted for 30 approaches that originate from two lines of measurement approaches: innovation metrics and metrics that focus on social or environmental dimensions (welfare metrics).[5]

Summarising current studies Milberg and Vonortas (2004) observe that over time a development in innovation metrics has taken place. While most early indicators (in the 1950s and 1960s) were limited to input, e.g. R&D expenditures or S&T personnel, and later to output (in the 1970s and 1980s), e.g. patents or publications, more recent metrics are complemented by specific innovation surveys or, mainly since the early 2000s, by indicators focusing on the dynamic nature of innovation. There is now rather an inclusion of a variety of indicators with the objective to feature the complexity and environment of the innovation process as well as the intangible elements of innovation (Milbergs and Vonortas 2004, 4f; Rothwell 1994). The Oslo Manual reflects these devel-

[5] Similarly, Hoelscher and Schubert (2015) offer an overview and a comparison of creativity and innovation indices.

opments. Its latest edition has added new dimensions that correspond to innovation as a system influenced by different factors like knowledge, linkages with other firms, and the interplay between different institutions (OECD and Eurostat 2005, 11, 32f). And in the same way, the measurement approaches within the framework of our screening take account of this state-of-the-art measurement of innovation to a great extent.

4.2 A Measurement Tool for Social Innovation at the National Level

The insights as to how innovation can be measured according to the state of the art were used as implications for the development of the TEPSIE blueprint. The suggested measurement model for social innovation at the national level – based on the screening – consists of *analytical levels* that help determine dimensions and single indicators. These analytical levels are connected to the different stages of the innovation process. Although the recent understanding implies that innovation is a complex and non-linear process, stage models significantly shaped the analytical view of the innovation process. For instance Verworn and Herstatt (2007, 9) describe five iterative stages of the process of technological-economic innovation implying:

1) idea generation,
2) concept design and product planning,
3) development,
4) prototyping and pilot use,
5) production, introduction, and penetration into market.

With regard to social innovation recent approaches also build upon this stage model and feature similar structural characteristics. Drawing on their research for the *Open Book of Social Innovation* (Murray et al. 2010) The Young Foundation (2012, 33ff) outlined six stages of the process of social innovation:

1) prompts resulting from a social need,
2) the actual starting point of the process, i.e. the generation of ideas aiming at solving the need,
3) prototyping of the ideas,
4) sustaining of a promising prototype,
5) scaling, and
6) systemic change.

The measurement approaches in our screening use analytical levels that reflect these different stages of the innovation process to a great extent, although some stages are often merged; most indicators are categorised along the following levels:

1) input/framework (associated with invention/idea generation),
2) throughput/activities (associated with development/sustaining), and
3) output/performance (associated with penetration into markets/scaling/systemic change).

To give an example, the Innovation Union Scoreboard's (Hollanders and Es-Sadki 2013, 4f) conceptual framework consists of three main types of levels:

1) *enablers* as main drivers of innovation external to firms, e.g. the research system,
2) *firm activities* describing firms' innovation efforts, e.g. R&D investment, and
3) *outputs*, e.g. high-growth innovative firms.

The first conclusion resulting from the literature review and the screening of existing innovation metrics is that from an analytical point of view, sequences of innovation processes are structurally similar in technological-economic and social innovation. Since analytical measurement levels are oriented towards the above mentioned stages, similar analytical levels can be used for measuring technological-economic and social innovation. Suitable levels for measuring social innovation are *(1) framework conditions, (2) entrepreneurial activities, and (3) organisational output & societal outcome* (for the derivation and definition of the levels see Bund et al. 2013a, 32ff). Furthermore, the screening of specific indicators used in the metrics resulted in seven clusters of variables that are transversal to the analytical levels. While some of these clusters belong more or less to one level, most clusters span different analytical levels. Table 1 illustrates these clusters and exemplary indicators.

Table 1: Dimensions in Innovation Metrics

Knowledge	Innovation Culture	Information/ Communication Technology	Financial Resources	Entrepreneurial Activity	Collaboration & Networks	Intellectual Property Rights and Patents
Main analytical levels						
1	1	1	1+2	1+2	2	3
Exemplary variables						
- Graduation rates at doctorate level - Science/ engineering graduates at doctorate level	- Popular attitudes towards scientific advancements	- Business and household access to broadband - Rage of broadband prices	- Business enterprise expenditure - Government funding of business R&D	- Self-employed - Employer enterprise birth and death rate	- Firms with (inter) national collaboration on innovation - Cooperation on scientific articles	- Triadic patents per million population - High-technology services output per head
Source						
OECD (2011b)	Economist Intelligence Unit (2009)	OECD (2011b)	OECD (2010)	OECD (2010)	OECD (2010)	Economist Intelligence Unit (2009)

Adapted from Bund et al. (2013a, 10ff).

Table 2: Blueprint of Social Innovation Indicators

Level	Framework Conditions				Entrepreneurial Activities	Societal Output/ Outcome
Sublevel	Resources Framework	Institutional Framework	Political Framework	Societal Climate Framework	Investment Start-Ups Collaboration/ Networks	Education Health/Care Employment Housing Societal capital Political Participation Environment
Dimensions and Exemplary Variables	- *Financial Resources* (e.g. public social expenditure as percentage of GDP) - *Human resources* (e.g. number of volunteers) - *Infrastructural resources* (e.g. e-readiness)	- *Normative institutions* (e.g. solidarity) - *Regulative institutions* (e.g. legislative background for starting a social organisation) - *Cultural cognitive institutions* (e.g. human rights)	- *Policy awareness about social innovation* (e.g. national innovation strategies) - *Political environment* (e.g. corruption perception)	- *Social needs/ demands* as reference points for social innovation (e.g. requests to the EU Parliament) - *Social engagement/ attitudes* (e.g. membership in humanitarian organisations)	*Example*s: - Expenditure in Innovation by social economy - Start-ups of firms dedicated to social purposes - Environment to start a company	*Example*s: - Equal opportunities - Access to/ quality of health facilities - Earnings - Social cohesion - Preservation of natural capital

Bund et al. (2013a, 42ff).

The differences between social and technical innovation concepts that are due to the specific content of social innovation in terms of the satisfaction of social needs (Moulaert et al. 2005) make it necessary to include or reinterpret some dimensions that are not considered in traditional innovation metrics. For the complete assessment of the dimensions in Table 1, see Bund et al. (2013a, 24ff). In summary, the central conclusion that can be drawn from the literature review and the screening of existing innovation metrics is that traditional dimensions or aspects of innovation measurement can only be partially applied to the measurement of social innovation. The structural similarity between both types of innovation makes this possible to a certain extent. However, differences in content between both types require major adjustments of key aspects. Table 2 illustrates the structure of the blueprint of social innovation indicators. In the following qualitative case studies, we focus on the level *framework conditions* which represents the innovation capacity of spatial units.

4.3 The Linkage between Innovation Metrics and Systemic Determinants

The dimensions in Table 2 have been derived from the literature review and the screening process. However, the question is whether these dimensions and related variables are really able to illustrate the central aspects of social innovation at the local, regional, or national level. In the next section, the qualitative case studies (conducted in four German cities) will be presented. The qualitative case studies aim at investigating the systemic determinants in the selected cities and at strengthening the linkage between systemic determinants and operational innovation metrics.

In the 1990s, various approaches to innovation systems, innovative milieus, and clusters emerged. National innovation systems are based on the assumption that national frameworks are decisive for growth in production and innovation (Bathelt 2003, 764). Cooke et al. (1997) was one of those who applied a complementation of such systems by including subnational dimensions.[6] While the impact of clusters and systemic determinants on innovations and economic growth is empirically investigated (e.g. Rodríguez-Pose and Comptour 2012), the linkage to formal innovation metrics is not strong enough. According to Fritsch and Slavtchev (2012), there is a need to investigate the conditions of performance of such systems. This is also backed up by Cooke et al. (1997, 478): "Understanding innovation from the systemic perspective is, thus, more holistic as information circulates in multiple directions in an interactive manner

[6] Although the urban space is not widely reflected in research on innovation systems (or only metropolitan areas, cf. Bathelt and Depner 2003, 129), we hypothesise that the urban space in the particular case of integration is the appropriate place to investigate systemic components. Cities are destinations of migration and therefore suitable places for innovations.

forming a variable perspective in system dynamics." In order to investigate the systemic determinants in the cities, experts were asked to give their view of important conditions for innovative practice.

5. Qualitative Case Studies

5.1 Expert Interviews

Standard indicator research is often conducted by means of statistical analysis in order to prove the multicollinearity of single indicators. However, it was not the tool of choice for validating the measurement dimensions that we have introduced above:[7] We assume that social innovativeness is a multidimensional outcome. Based on the aforementioned top-down strategy we hypothesise that a set of dimensions is responsible for the degree of social innovativeness. However, there may be different configurations leading to this outcome. For instance, one dimension, e.g. the innovation climate, may be so pronounced that it compensates for another dimension, e.g. financial shortages. The urban case studies aim at investigating causal relations and at the same time considering the multidimensional nature of social innovativeness.

Uncovering causal relations in comparative designs brings with it methodological problems, e.g. the overlooking of variables, a lack of significant results due to a small number of cases, and related probabilistic influences on the observed cases (Rohlfing 2009, 141ff). Rohlfing (2009, 141ff) underlines that interaction effects can only be excluded by a strong theoretical knowledge on monocausality in a specific case. In the absence of such knowledge, interactive effects cannot be conclusively tested by means of comparative designs. He also points out that process tracing, as a method for identifying causality in the course of an in-depth analysis of a case and for investigating the effect of the independent variables on the dependent variable, has not yet been sufficiently discussed to be regarded as an adequate method for identifying interactive effects. In this context a before-after research design is discussed as another option. By means of this method, the situations at two points in time can be compared in order to isolate causal processes such as the introduction of a new legal constraint. According to Rohlfing (2009, 144ff), the controllability is weak when such a research design is applied, because another independent

[7] Multicollinearity is related to the concept of multiple indicators, i.e. when indicators are interchangeable within a homogeneous indicator universe (Schnell et al. 2011, 125ff.). In accordance with the Qualitative Comparative Analysis (QCA) multicollinearity is not problematic. The method is based on the assumption that 'many roads lead to Rome' (Wagemann and Schneider 2010, 384). A fuzzy-set QCA could not be performed in our study because data to represent the outcome of social innovation is not yet available.

variable could have changed over time. From a more pragmatic perspective, he thus recommends selecting cases with enough theoretical and empirical literature on specific variables.

Based on these considerations, we combined the theory (top down) with experts' knowledge (bottom-up) on social innovation processes in order to minimise the risk of overlooking dimensions. The knowledge provided by experts is particularly suited for gaining in-depth knowledge on the innovation process at the local level.

In the case studies semi-structured guided interviews with experts were conducted. The qualitative interviews were performed with eight to ten actors in each of the four selected German cities, i.e. in total with 35 experts (for the selection of cities see section 5.2). We selected the experts based on information gathered through the cities' integration monitoring, the integration coordinators, and relevant websites. This enquiry resulted in a list of organisations allocated to four categories:

1) (migrant) associations,
2) welfare associations,
3) social enterprises,
4) municipal agents.

We are aware of the fact that it is not possible to compile a complete list of initiatives, which is also due to the existence of informal networks or newly established initiatives. Table 3 shows the distribution of the interviewed experts. The compilation of the overall list gave first insights into the innovation regimes in the cities. The municipal dominance (e.g. integration coordinators, staff involved in projects initiated by the local authorities), for instance, was particularly strong in Erlangen. It became evident that in all four cities the number of (migrant) associations (e.g. service-related associations, representatives of foreigners' councils) is high. By contrast, the number of social enterprises that offer specific services for migrants is lower.

Table 3: Sample of Experts

	Arnsberg	Erlangen	Heilbronn	Offenbach a. M.
(Migrant) associations	4	3	5	3
Welfare associations	2	2	1	3
Social enterprises	0	0	1	1
Municipal agents	2	3	3	2

The objective of the interviews was not to perform an evaluation of the measurement dimensions by means of a rigid deductive design. The aim was rather to generate primary data that can indirectly provide insights on the significance of the measurement dimensions (representing the framework conditions for innovativeness) at the local level. It was only after matching the measurement dimensions with insights from the innovative practice that conclusions as to

whether the measurement dimensions can really explain social innovativeness could be drawn. The indicator dimensions at the analytical level *framework conditions* of the indicator blueprint (see Table 2) were in a way 'hidden' in the interview guide, however, in a superficial manner in order to ensure priority of an inductive design. The analysis of the interviews was therefore similar to what Kuckartz (2014) calls a deductive-inductive method of categorisation, with a strong emphasis on the inductive element. Each interview had four parts:

1) We asked the experts to report on the activities of their organisation, on the particular social need in the city to which they wished to refer to with their activity, and the respective demands of clients as regards the organisation's services. Thereby we indirectly received information on the dimension social need.
2) The main part of the interview was so designed as to gather information on the resources and conditions necessary for innovative practice. High value was placed on the greatest possible freedom in the interviews in order to investigate the issues which the experts considered as most pressing. Therefore, this part of the interviews was started by giving the experts the opportunity to make a free statement as to what framework conditions they consider to be decisive for acting in an innovative way. Then we focused on the different framework conditions in the measurement dimensions: We asked the experts to describe the financial and human resources in their organisation. Where appropriate, we asked questions about the organisation's foundation processes in order to assess the significance of (legal) frameworks for starting innovative ventures.
3) We then directly asked the respective experts to assess whether they consider themselves to be innovative and asked them to substantiate their assessment. This was helpful for reflecting our definition of social innovation. Furthermore, in this part we tried to find out who the leading actors in the urban innovation system are.
4) Finally, we asked the experts about the climate of integration (SVR 2012) in their cities and the future challenges for both the cities and the organisation.

5.2 Selection of Urban Cases

The expert interviews have been carried out in four German cities. The selection of cases in comparative designs can be performed in various but not mutually exclusive ways (Tilly 1984, 81; Vogelpohl 2013, 64):

1) by *individualising*, i.e. contrasting cases in order to isolate specifics,
2) by *universalising*, i.e. explaining that phenomena are based on equal mechanisms,
3) by *finding variations* whereby commonalities between these cases vary in kind and intensity, and
4) by *encompassing*, i.e. contrasting cases in different localities in order to show that the cases belong to the same system.

For our study, we aimed at selecting cities that are suitable for isolating the systemic determinants for the innovative practice of migrant integration. As discussed in the previous section, we assume that innovativeness is characterised by multidimensionality. Therefore, we maximised the differences within the dimensions, which is typical for an individualising selection process.

In the *selection process*, we looked at those German cities that, based on the Zensus in 2011, are located in the four *Bundesländer* (German federal states) with the highest proportion of migrants, apart from the *Stadtstaaten* (German city states). The cities considered in the selection process have shares of migrants above the German national average (19%) and population numbers between 50,000 and 150,000 inhabitants. 89 cities in the German federal states Bayern, Baden-Württemberg, Hessen, and Nordrhein-Westfalen meet these criteria.

In the *individualising process* (Tilly 1984) we selected four cities – one in each *Bundesland*[8] and one of each type corresponding to a typology we created in accordance with three dimensions resulting from the top-down strategy. We focused on dimensions that were available in the cities in terms of statistical data.[9] Our typology and the cities representing these types are illustrated in Table 4.

Table 4: Typology in Relation to the Mean Value of the 89 Cities in the Selection Process

	High knowledge assets	Moderate knowledge assets
High financial economic capacity	TYPE 1: Erlangen With moderate share of immigrants	TYPE 3: Heilbronn With high share of immigrants
Moderate financial economic capacity	TYPE 2: Offenbach a.M. With high share of immigrants	TYPE 4: Arnsberg With moderate share of immigrants

Firstly, we selected cities with different shares of migrants (dimension 1) in order to reflect the indicator dimension *need* for social innovations. Offenbach and Heilbronn have a notably high share of migrants. The share in Arnsberg and Erlangen is moderate in relation to the mean value of the 89 cities considered in the selection process. One has to bear in mind that all cities in the selection process have already a share of migrants above the German national average.

Secondly, we looked for diverse backgrounds of financial and economic capacities (dimension 2) in order to reflect the indicator dimension financial resources for implementing social innovations (indicators: core fiscal debts per capita and unemployment rate). In this respect Erlangen and Heilbronn show more enabling capacities than Arnsberg and, even more pronounced, Offenbach.

[8] The selection of the cities allows for no conclusions on the respective *Bundesland* itself. Through examining four different *Bundesländer* we had the opportunity to learn about diverse funding and promotion structures in the *Bundesländer*.

[9] Especially the soft indicator dimensions (e.g. value commitments) as well as aggregate data on civil society organisations – as central to the blueprint of indicators – could not be reflected because of a lack of data at the municipal level.

The importance of these two abovementioned indicator dimensions used in our typology (see Table 4) is backed up by a classification of municipalities in accordance with their framework conditions regarding integration policies by the *Sachverständigenrat deutscher Stiftungen für Integration und Migration*[10] (SVR) as part of its annual expert report 2012. In the classification, structural-legal, demographic, and economic factors are described as important. The SVR used indicators to distinguish types of German municipalities: the structural-legal framework was illustrated by the population size, the demographic framework by the share of foreigners in the population, and the economic framework by the unemployment rate (SVR 2012, 117ff, 124). The first two types in the classification of the SVR are 1) *municipalities with a low share of foreigners and a low unemployment rate* and 2) *municipalities with a low share of foreigners and a high unemployment rate* – the latter are mainly located in Eastern Germany. In our city selection these municipalities were not considered.[11] We draw on the argumentation of the authors of the classification who point out that in both types the political capacities and awareness of the topic are often not very pronounced (SVR 2012, 125f). Municipalities that are classified by the SVR into the types three and four, both characterised by high shares of foreigners, naturally provide more initiatives and are suitable for our case studies. Type three refers to *municipalities with a high share of foreigners and a low unemployment rate.* Erlangen and Heilbronn belong to this type of municipalities. According to the authors of the classification (SVR 2012, 126f), the framework conditions in these municipalities are enabling conditions. They argue that high shares of foreigners are challenging but at the same time the economic situation in the cities implies that there are capacities to deal with this situation. Furthermore, the authors point out that many of these municipalities have a long history of immigration and therefore a strong knowledge basis regarding integration policies. Finally, the fourth type describes *municipalities with a high share of foreigners and a high unemployment rate.* According to the authors (SVR 2012, 127f), municipalities belonging to this type face big challenges in view of lower economic capacities; however, they can draw on experiences in dealing with immigration issues. Arnsberg and Offenbach belong to this type of municipalities. In summary, the

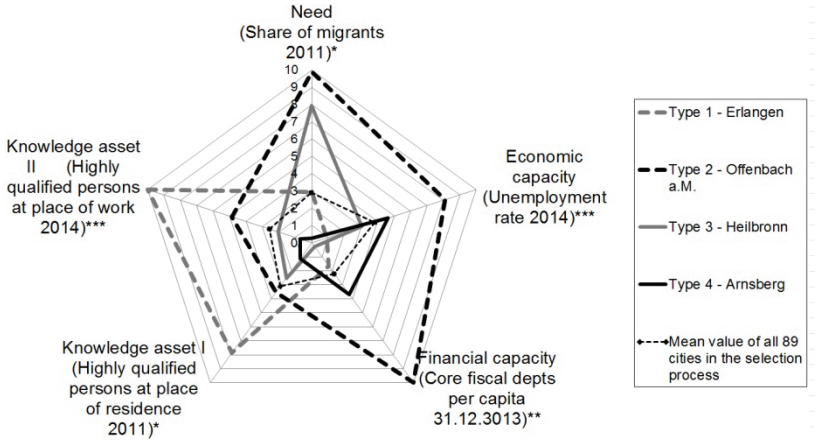
[10] The *Sachverständigenrat deutscher Stiftungen für Integration und Migration* is an independent expert council of German foundations on integration and migration; its board includes eight foundations. We thank the *SVR* for providing data tables on the membership of municipalities.

[11] As to our methodological approach, we presuppose a minimum need for integration to ensure that innovations are carried out in the unit and to have appropriate experts for the interviews. One has to consider that the indicator *share of foreigners* within the framework of the SVR's classification is set in relation to all German municipalities; therefore Arnsberg and Erlangen are classified into municipalities with high shares of foreigners. This is different to our typology classifying Arnsberg and Erlangen into cities with moderate shares of migrants – scaled in reference to the values of the 89 cities within the selection process.

authors (SVR 2012, 126f) argue that a favourable economic situation and a related favourable financial standing define most of all the scope of action for tasks beyond mandatory tasks (SVR 2012, 119); therefore, we believe that in a figurative sense these factors also influence the innovation capacity.

Corresponding to the approach of the SVR, we included into our typology the indicator *unemployment rate*. However, to reflect not only the economic but also the financial capacities of cities we added the indicator *core fiscal debts*. Furthermore, we replaced the indicator *share of foreigners* used in the approach of the SVR by the indicator *share of migrants* in order to ensure the dimension *need* is not restricted to the criterion of citizenship.

Figure 2: Indicator Values of the Selected Cities (Scaled in Reference to the Values of the 89 Cities in the Selection Process)



* Source: Our calculations on the basis of the Zensus in 2011. *Highly qualified persons at place of residence* calculated as people with a degree from a university/university of applied sciences as a proportion of the population aged 15 and over.

** Source: Departments of statistics of the *Bundesländer* Baden-Württemberg, Bayern, Hessen, Nordrhein-Westfalen.

*** Source: Our calculations on the basis of a special analysis of data by the *Bundesagentur für Arbeit* (2015); *Unemployment rate* calculated as unemployed persons (Bundesagentur für Arbeit 2014) as a proportion of the total civilian labour force. *Highly qualified persons at place of work* calculated as employees subject to social security contribution with academic degrees as a proportion of all employees subject to social security contribution.

As a third dimension for selecting the cities we considered indicators representing the asset of knowledge (indicators: highly qualified persons at place of residence and at place of work) in order to reflect the indicator dimension *personal resources* for innovation processes (dimension 3). This dimension is inspired by a demographic classification of municipalities by the Bertelsmann Foundation (2013). Knowledge growth through R&D, indicated among others by the level of formal qualification, is an important indicator dimension of techno-

logical-economic innovation (OECD 2002, 30, 95f). The significance of knowledge for social innovation has not yet been sufficiently investigated (Bund et al. 2013a, 24f) and the dimension was therefore included. In the classification of the Bertelsmann Foundation (2013), which implies further indicators apart from *highly qualified persons*, Arnsberg and Heilbronn are classed as municipalities *with low dynamic surrounding centres and in rural areas.* Erlangen (classified into the category *socially heterogeneous centres of knowledge society*) and Offenbach (classified into the category *urban centres with heterogeneous economic and social dynamic*) have a more dynamic demographic background.

The final selection of cities within the four types (Table 4) was performed by combining all three dimensions: need, economic/financial capacities, and knowledge assets. It was supplemented by a more detailed investigation in terms of an analysis of data and documents related to these cities.[12] The indicator values for the four selected cities are illustrated in Figure 2. As a result, in our study we examined four cities with different structural backgrounds and therefore different starting points with regard to their systemic environment for innovative practice.

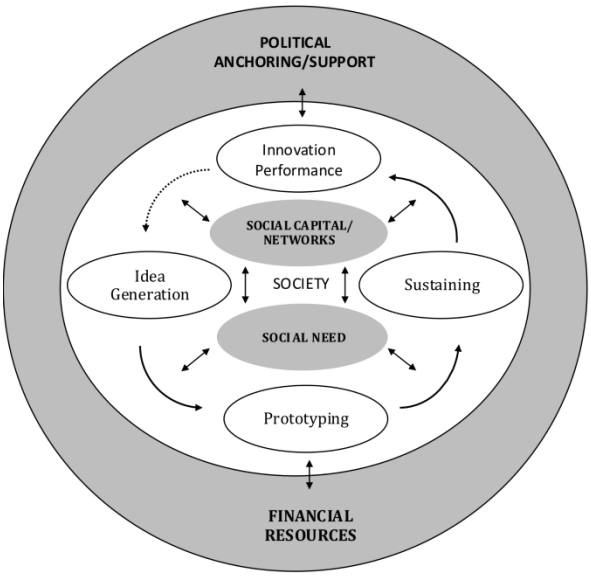
6. Key Findings

The results of the qualitative urban case studies basing on the expert interviews reveal four groups of systemic determinants relevant for the urban innovation system concerning integration:[13] social need structures, financial resources, political anchoring and support, and the social capital and social networks. These systemic determinants that shape the innovation process serve as theoretical implications for the measurement dimensions at the local level and are illustrated in Figure 3. The determinants and its derivations from the interviews are described in the following sections.

[12] Two criteria were of central importance: Firstly, the integration monitoring in the cities was a helpful source for assessing the structure of existing social need in more detail. Secondly, the density of initiatives and networks was a supplementary source. To give an example, Arnsberg was chosen because it stands out due to its high level of initiatives reported in media and its memberships in (inter-)national networks.

[13] These results exclusively apply to the case of integration. However, we argue that the determinants can be transferred to a great extent to other social fields because these measurement dimensions are adaptations of the measurement framework in section 4 that was embedded by screening and theory on social innovations in a cross-field perspective (cf. Krlev et al. 2014).

Figure 3: Systemic Determinants of Social Innovativeness at the Local Level



Adapted from Bund et al. (2013a).

6.1 Social Need and Access to Target Groups

The first systemic determinant refers to the state and progress of social need in the cities: The case studies revealed that high social need and pressure in the examined cities often led to progress and innovative solutions. Thus, social need becomes a starting point for innovations. To give an example, pressing public demands for a stronger recognition of the topic *integration* (e.g. as a result of publication of data showing high shares of migrants in the city) have frequently initiated an accelerated reorganisation in local authorities (e.g. more political attention to the topic or launching of welcome centres). The articulation of social needs in terms of public demands is of fundamental importance and puts emphasis on the normative element of social innovation, because demands evolve from social norms existing in the society. In reference to Heiskala (2007, 59) this kind of normative innovations "challenge established value commitments and/or the way the values are specified into legitimate social norms." At the same time, the competence in dealing with pressing social issues depends on the options in the city: We observed that in one city with lower financial capacities, high pressure (e.g. resulting from dynamic immigration as a consequence of labour mobility in the European Union) has been met by a more regulatory policy style in local authorities, which, however, brings with it a risk of inhibiting the innovative practice.

However, as we have noticed in the course of the study, social needs are not only a starting point for innovations, but also a point of destination: In one of

the cities with a lower share of migrants, it became evident that the lower need was connected with lower implementation rates. For instance, some of the services offered have not been used by citizens. Nevertheless, this is not necessarily a sign of lower need but rather a sign of a lack of access to target groups, a situation to which the interviewed experts respond by means of stronger demand orientation (e.g. surveys of demand).

In summary, social need and access to target groups fundamentally shape social innovation processes. This reflects the *content* and *product dimension* (Moulaert et al. 2005) of social innovation in terms of satisfaction of these needs. In a figurative meaning, the importance of need as starting and destination point of social innovation implies the existence of a kind of *marketplace* for social innovations – in technological-economic innovation metrics expressed by indicators such as *client orientation*. For social innovation, we apply indicators illustrating the state and the progress of the social needs and demands. The necessity of innovative solutions seems to be high when social needs and demands are very pressing and cannot be responded to by means of established practice. Experiences in integration issues in the history of cities – as enabling conditions for integration politics described by the SVR (2012, 127) – are thus not necessarily conditions that also enable (social) innovations.

6.2 Financial Resources

As mentioned above, managing social needs and pressure should be assessed in the context of the cities' scope for action. The financial resources directly support the innovation process and have a primary role for implementing ideas: infrastructures and professional labour force are preconditions described by experts for the implementation of ideas in a sustainable manner. While one can argue that innovation is supposed to develop better in cities with lower financial resources because there is more pressure for finding new approaches, since established practices cannot be continued, in the case studies it became clear that in these cities particularly the sustainability of innovations is partially impeded. Implementation and sustainability are, however, central for qualifying an innovation as social innovation, since, referring to Gillwald (2000, 43), the adaptations and the impact on societies through the innovation are key criteria. Therefore, financial resources are key indicators of the social innovation capacity of any spatial unit.

However, not only the extent but also the kind of financing is decisive: philanthropic or national funds are often dedicated to funding model projects for a limited period of time. Such funding platforms provide a scope for exploration for the actors in the cities. By contrast, projects initiated by local authorities enable more long-term measures and can be better adjusted to local needs. The importance of municipal financing of sustainable innovations in the cities is one of the central results of our case studies. It accords with the results of the EU-

sponsored project WILCO (Brandsen 2014, 9): In their case studies on social innovations in European cities they show that local authorities are often initiators and driving actors of sustainable social innovations. Also the SVR (2012, 119) emphasises the importance of the cities' financial background for the scope of not mandatory tasks. Similarly, with regard to technological-economic innovation, Cooke et al. (1997, 481, 483) describe the autonomous capacity for regional public spending as a favourable factor in the innovation system.

6.3 Political Anchoring and Support

The importance of municipal financing leads to the political importance given to the topic of *immigration and integration* in the cities. The prioritisation of the topic fundamentally influences the factual monetary scope of the responsible organisational unit in local authorities. In the urban case studies, the staffing and the decision-making authority of the unit in the overall structure of the local administration was an indicator of the municipal scope for action and therefore also for innovations undertaken by the local authorities.

As revealed by the case studies, the municipal agents in the unit (e.g. integration coordinators) have great influence on innovation processes:

Firstly, they are key actors in building well-positioned networks. On the one hand such networks improve the access to target groups by means of an improved overview of services and on the other hand, as reported by experts, networks enhance a successful acquisition of external funding.

Secondly, the abovementioned municipal agents often coordinate the acquisition of external funding and support civil society actors during the application process. Therefore, the staff in the unit can indirectly determine the financial resources.

Thirdly, the municipal agents often have a leading mediating role within networks and public discourses and fundamentally shape the atmosphere and the innovation culture according to their leadership style.

In summary, the staffing of the organisational unit as well as the structural localisation and decision-making authority of the organisational unit are important indicators of the scope of social innovations led by local authorities at the local level. The staffing also often has an impact on innovation capacities of civil society actors in the cities.

6.4 Social Capital and Networks

The fourth core determinant of social innovativeness (as we found in the case studies) refers to the social capital of the cities. Starting innovations in traditional innovation metrics is connected to the research and business sector, which is reflected by indicators of, for example, R&D spending or knowledge clusters. In the case studies it could be observed that ideas for social innovations emerge within civil society or the local public sector. This *local and socially rooted*

character of social innovation results from the necessity of having a profound knowledge of the social needs and structures in the cities in order to initiate innovations. In the case studies initiators of innovative practice are either motivated by one's own experiences (personal concerns) or aim at drawing the attention of political circles and the public to a specific social need (advocacy). This kind of need orientation is intertwined with the innovation-related concept of creativity. Sternberg and Lubart (1999, 3) define creativity as the "ability to produce work that is both novel (i.e. original, unexpected) and appropriate (i.e. useful, adaptive concerning task constraints)." Hoelscher (2012, 2) underlines that, apart from the economic perspective, "in a global era creativity is additionally seen as important for mental well-being and that creativity helps the individual adjust to societal changes." Creativity is therefore important for any type of innovation. In the case of social innovation it may be best reflected by indicators of an encompassing innovation culture implying openness to inventions, as already used in innovation metrics, and should be complemented by indicators of values and attitudes towards social engagement, advocacy, and solidarity.[14]

In addition, indicators should reflect the density of civil society organisations and the number of volunteers. This is because (as we found in the interviews) apart from local authorities civil society actors, in the case of integration mostly organised as associations, determine the social capital of the cities. In the best case these actors should be widespread and cross-linked. The importance of networks for acquiring external funds has already been discussed above. Enabling conditions for an innovation culture in these networks imply trust between actors, a certain degree of knowledge about local structures and local needs which is enhanced by citizens' participation, and finally strong partners who make it possible to establish initiatives. Furthermore, extensive networks and learning culture within a city but also on a supra-regional level are of huge importance for compensating structural shortcomings (e.g. unfavourable financial backgrounds). Cooke et al. too describe cultural aspects such as the associative and learning culture of a local setting as a determinant factor for the quality of innovation systems. In their view value commitment in local settings show "systemic interaction capacity and potential" (Cooke et al. 1997, 488) as to promoting innovations. According to our case studies, this seems to apply to social innovations as well and to reflect the dimensions of process and empowerment (Moulaert et al. 2005) in terms of efficient exploitation of social resources.

[14] The specific importance of knowledge and education in terms of the indicator *highly qualified persons* for creativity and social innovation capacities could not be conclusively clarified and requires further investigation.

6.5 Measurement Tool for Capturing Social Innovation Capacities at the Local Level

The initial measurement model for the national level (see section 4.2) has to some extent been modified with regard to these above mentioned systemic insights arising from the case studies and adjusted to the local level (Table 5). Firstly, we put the emphasis on capacities for creating social innovations. Therefore, the focus of the case studies was on the *framework conditions* as one of the three analytical levels of the initial model. Secondly, in order to have a more straightforward approach we tightened the approach and specified or *rearranged dimensions* depending on the four groups of systemic determinants found at the *local level*. Thirdly, the adjustment to the local level was accompanied by the *inclusion of new dimensions* (e.g. staffing in local authorities).

The four systemic determinants described in the previous sections influence the innovation process at different stages and in multidimensional configurations: favourable values (e.g. extensive network) in one determinant can compensate unfavourable values in another determinant (e.g. financial shortcuts). For developing a measurement tool, on account of this multidimensionality of social innovativeness, it is advisable to prefer the structure of a scorecard, which highlights the strengths and weaknesses of spatial units, instead of the formation of indices (Table 5).

For the implementation of the measurement tool (Table 5) an improvement of data availability is necessary. As to the data situation in German municipalities, one can say that especially measurement dimensions associated with structural data can be filled with data (e.g. data on social structures, fiscal core depts, etc.). While such data are mostly available on statistical platforms in aggregate form (in particular with regard to cities administered as independent districts), some data require a detailed analysis of data publications and reports at the municipal level (e.g. concerning the staffing of the organisation unit in local authorities in a social field). The data situation with regard to the density of civil society organisations and social entrepreneurship is not satisfying: data are usually only (but not sufficiently) available at the national level (for a detailed assessment see Hubrich et al. 2012). With regard to data on soft dimensions such as values and attitudes at the municipal level, we can state that there are fundamental data gaps, although these dimensions proved to be core factors for social innovation capacities. Value-related surveys can be an inspiring source but they offer less fine-grained data that are not yet suitable for providing insights at the local level. However, efforts are made in cities to conduct citizens' surveys and to include these soft dimensions.

Table 5: Measurement Dimensions for Social Innovation Capacities at the Local Level

Systemic Level	Social Need	Financial Resources	Political Anchoring/Support	Social Capital and Networks
Processual Role	Starting and destination point of social innovations	Implementation as an essential characteristic of the diffusion of social innovation in societies	Local authorities as key actors in network building, acquisition of funds, and sustainable innovations	Individuals and social groups as initiators and driving actors of social innovations
Dimensions and Exemplary Variables	*Fields of needs requiring action and social progress (field specific)* - Data analysis of social structures (e.g. integration indicators) - Degree of social progress (e.g. analysis of social monitoring) *Discourse analysis* - Public petitions - Urgent needs reported in citizens' surveys	*Financial-economic background* - Fiscal core depts - Unemployment rate *Public social expenditure* - Social expenditures by local authorities - National funds *Private social expenditure* - Philanthropic funds - Private spending	*Organisational anchoring in local authorities (field specific)* - Staffing of the organisational unit - Structural localisation and decision-making authority of the organisational unit *Political environment for social innovation* - Social initiatives initiated/coordinated by the local authority - Format/degree of citizens' participation	*Organisational environment* - Density of civil society organisations - Density of social enterprises *Personal resources* - Density of volunteers - Share of highly qualified persons *Values/Attitudes* - Social values (e.g. solidarity) - Attitudes towards engagement - Innovation culture (e.g. risk-taking)

While the data situation at the national level is more satisfying (e.g. due to national value-related surveys), the municipal or regional level is even more promising for providing concrete recommendations to policy makers and practioners, because local settings are best suited to study and shape social innovation processes in their context.

7. Outlook

In this article a methodological framework for developing dimensions for measuring the social innovation capacity of spatial units was introduced. We discussed that the stages of the innovation process in technological-economic and social innovation are similar. Analytical levels in innovation metrics are structured in accordance with these stages. Therefore, the methodological framework based on a screening of innovation metrics with the objective to learn from existing metrics and to develop indicators that are adapted in order to mirror the particularities of

social innovation discussed in the literature. The screening resulted in a blueprint of social innovation indicators at the national level (Bund et al. 2013a). In order to validate these indicators resulting from this top-down strategy, it was thought appropriate to consider the indicators against innovative practice at the local level (bottom up), especially since we assumed that there are also fundamental differences between technological-economic and social innovation on account of the particular *content* (Moulaert et al. 2005) of social innovation in terms of the satisfaction of social needs. Qualitative case studies were performed in four German cities on the exemplary field of migrant integration. The aim was to investigate systemic determinants of social innovation processes and thereby the *grammatics* (Hutter et al. 2015, in this HSR Special Issue) of social innovation. Finally, these systemic implications were used to modify the measurement dimensions of the blueprint of indicators and to adjust them to the local level, which allows for more concrete recommendations concerning the shaping of a climate favourable to social innovations.

The case studies revealed four groups of *core factors for social innovation processes*: social need structures, financial resources, political anchoring and support, and the social capital and networks. These factors influence the innovation process at different stages: social need is often a starting and a destination point and financial resources are primarily important for implementing ideas – both reflect the *content* and *product* dimension (Moulaert et al. 2005) of social innovation implying the effective satisfaction of social needs. The exploitation of the social capital in the shape of civil society actors and the public sector reflects the dimensions of *process* and *empowerment* (Moulaert et al. 2005). The *multidimensionality of innovativeness* implies that different configurations of these determinants can influence the quality of innovation systems. The initial measurement model was adjusted to the local level. Most of the indicators of this initial model proved to be suitable. Changes were related to modifications in order to reflect the local level and to tighten or specify the structure of the model.

Essential dimensions that are not considered in traditional metrics but are central for reflecting the particularity of social innovation refer to 1) social need and progress, 2) an encompassing innovation culture implying social values, 3) the scope of civil society and social entrepreneurship, 4) social spending, and 5) the political importance given to the social issue. The suggested measurement dimensions require a deeper investigation, empirical studies, and especially an improvement of data. Future research could deal with the following aspects:

1) The qualitative case studies focused on the exemplary field of migrant integration. *Innovation processes in other social fields* (e.g. health) may follow, to a certain degree, the same processual patterns but may also be different to some extent. This applies to the comparison of innovation processes in different fields.
2) Furthermore, future research should focus on an *interregional comparison by using the presented indicators*. In this regard a promising issue may be the

interrelation between structural backgrounds of spatial units, the share of creative (Florida 2006) and highly qualified persons in the units, and value commitments against the background of social progress in the units.

3) In this context, the *data situation requires major improvements*, especially at the more fine-grained levels such as the municipal units. While many of the structural indicators can be filled with data, especially *soft* data on value commitments and aggregate data on the civil society require significant improvements.

In summary, research on the measurement of social innovation is still in its early stages. We would like to underline the importance of such measurement as a more empirical line in social innovation research. In our view it contributes to making the concept of social innovation more tangible for the public and academic debate. Moreover, it should be regarded as an advancement of innovation metrics and demonstrate how the narrow focus on technological-economic metrics can be overcome. The young research field of measuring social innovation has to be treated as ongoing research process that should be continuously reflected against the background of social reality and innovative practice.

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Cooperating Associations / Networks / Journals

QUANTUM (Association for Quantification and Methods in Historical and Social Research) http://www.gesis.org/en/hsr/profile/quantum.

INTERQUANT (International Commission of the application of Quantitative Methods in History) http://www.gesis.org/en/hsr/profile/quantum.

H-SOZ-U-KULT (Humanities, Sozial und Kulturgeschichte) http://hsozkult.geschichte.hu-berlin.de.

AFC (Association Française de Cliométrie) http://www.cliometrie.org.

AGE (Arbeitsgemeinschaft Geschichte und EDV) http://www.age-net.de.

AHC (International Association for History and Computing) http://odur.let.rug.nl/ahc.

FQS (Forum Qualitative Sozialforschung – Forum Qualitative Social Research; http://www.qualitative-research.net/fqs.

HISTORICUM.NET http://www.historicum.net.

ZOL (Zeitgeschichte-online) http://www.zeitgeschichte-online.de.

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International Political Science Abstracts (SAGE) http://www.sagepub.co.uk.

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SOLIS (Social Science Literature Information System / GESIS) http://www.gesis.org/en/services/specialized-information.