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Improved Measurement of the Economics of Social Innovation

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SIMPACT Statistics Brief

Covers research on the «Economic Foundation of Social Innovation» related to measurement of social innovation at micro and macro-level as well as impact assessment to inform policymakers, statisticians, investors and other interested stakeholders.

SIMPACT

SIMPACT is a research project funded under the European Commission's 7th Framework Programme from 2014-2016 and is the acronym for «Boosting the Impact of SI in Europe through Economic Underpinnings». The project consortium consists of twelve European research institutions and is led by the Institute for Work and Technology of the Westphalian University Gelsenkirchen in Germany.

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Improved Measurement of the Economic Underpinnings of Social Innovation

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ABSTRACT

Social innovation is explained as new combinations of social, economic and political capital (resources and capabilities). The value or impact of social innovation derives from the interaction between the supply and demand for social innovations. As producers and users of social innovations the stakeholders of the business, public and civic or third sector engage in interactive learning and co-creation of use value, or 'value-in-context'. Based on the derived indicator requirements, indicator sets are proposed.

The application of the measurement framework at the micro-level of social innovations identifies combinations of social innovation inputs, objectives, obstacles and outputs, that for instance differ by the theme of social innovation, the type of social innovation, and the geographical scale of operations.

Application at the macro level of European regions shows that social innovation factors impact GDP and beyond. Four types of regional ecosystems of social innovation can be identified. As different contexts they induce different micro social innovation impacts.

Contents

1 ECONOMIC FRAMEWORK OF SI

The working definition of Social Innovation (SI) within the SIMPACT project is set out by Rehfeld et al. (2015: 6) as:

> *« Social Innovation refers to novel combinations of ideas and distinct forms of collaboration that transcend established institutional contexts with the effect of empowering and (re)engaging vulnerable groups either in the process of social innovation or as a result of it. »*

The reference to vulnerable groups in this definition concern marginalised people who's needs are not met in their existing institutional contexts at micro and macro-level (e.g.: the State, market, or family may not meet the need). At the micro-level of individual cases of social innovation these needs are met in a new institutional set-up which transcends the established one. At the macro-level of countries, the established institutional context (from which social innovation may emerge) refers for instance to the various welfare-state regimes or varieties of capitalism. Because the specific local context is very important for social innovation, we focus in this paper on the sub-national level of EU regions as the macro-level for SI.

Reaching back to the theories that Schumpeter (1912) formulated on the role of innovation for economic development, and by drawing on the subsequently formalized evolutionary theory (Nelson &Winter, 1982; Dosi, 1982) we can understand "social innovation as an evolutionary process" which *«comprises the development, implementation, practical application, and consolidation of such novel combinations»* (Rehfeld et al. 2015:.7). From SIMPACT's conceptual framework of Social Innovation components, objectives and principles along the economic, social and political domain in societies, Rehfeld and colleagues (2015) conclude, that the interactions between the different categories are dynamic and mutually influencing, as they «*drive social innovations' economic and social impact*» (Rehfeld et al. 2015: 44).

SIMPACT investigates the economic foundation of Social Innovation: it's economic underpinning. We therefore work towards an economic framework and indicator-sets at micro- and macro-level, which allow to describe and analyse SI, and discuss its economic impact[1].

1.1 Measuring Intangibles

As Stiglitz et al. (2009: 144) point out, economists are increasingly confronted with the challenge of measuring 'intangibles' in the economic system, because an increasing share of investments and an increasing share of outputs are intangible, and it is difficult to estimate the market value by capitalising/monetising these intangibles. The discussion basically concerns the claim that some expenditures on intangibles should not be seen as costs, but as investments, because they increase the productive capacity in the future. In their macro-economic measurement, or capitalization approach Corrado, Hulten, and Sichel (2006) have therefore stated that: *"any use of resources today designed to increase the productive capacity of the firm in the future is investment"*. Concerning social innovation, the challenge is to construct a citizen's or societal version of this statement, since not only for-profit-firms invest, also citizens and social innovators use, develop and invest in resources which increase the productive capacity of people, organisations and society at large. Social innovation inputs which empower marginalized groups in society, and increase capabilities to pursue their 'productive goals', should therefore also be seen as investments, not as costs or consumption.

Novel Combinations

There are many intangibles involved in innovation, and especially in social innovation. Schumpeter distinguished between five different types of innovations: introduction of new products or services; introduction of new methods of production; exploitation of new markets; creation of new organizational structures in an industry; development of new sources of supply for raw materials or other inputs. In practice, innovation involves new combinations of these five, which are often very hard to separate from each other. This especially applies in the case of social

[1] The full report (Wintjes et al. 2016) is available for download at SIMPACT website.

innovation. Moreover, regarding social innovation we have to translate Schumpeters' types of innovation into a more social version, e.g. serving new markets, would then also include: serving new target groups of marginalised people.

1.2 SI as «Breakthroughs» in Society

Whereas inventions can be seen as technological 'breakthroughs' in science, innovations can be seen as 'breakthroughs' in markets and societies. Schumpeter wanted to explain: *«a source of energy within the economic system which would of itself disrupt any equilibrium that might be attained»* (Schumpeter 1937/1989: 166)[2]. In order to turn an invention into an innovation, an innovative entrepreneur combines several different types of knowledge, capabilities, resources and skills. Schumpeter referred to the entrepreneurial function of coming to new combinations, which replace old ones (Fagerberg, 2014). This entrepreneurial function of coming to new combinations can also be performed by an 'Entrepreneurial State' (Mazzucato 2013a), or a Social Innovator. In this respect Krlev et al. (2014: 209) who worked on the TEPSIE project, refer to the notion of 'sector neutrality', since entrepreneurship and social innovation can occur in any sector: public, private or third sector, and civil society.

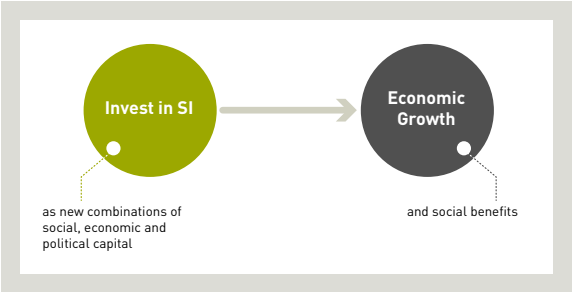

Figure 1. The Economic Framework of SI

New Combinations of Social, Economic & Political Capital

Since social innovation has many aspects, and is an even broader societal concept than other forms of innovation, also the metrics and measurement approaches need to incorporate a broader perspective, by specifically including not only the private sector, but also the public sector, and the household or third sector. Social innovation deals about the new combinations from a broad range of resources and capabilities of these different sectors, which serve as input to social innovations. In addition, the objectives, and the benefits and impacts from the social innovations differ for each of these three sectors[3]. As an additional source of disruptive variety, SI brings new combinations of social, economic and public/political resources and capabilities, which may create more economic growth (and social benefits) than previous combinations (see Figure 1).

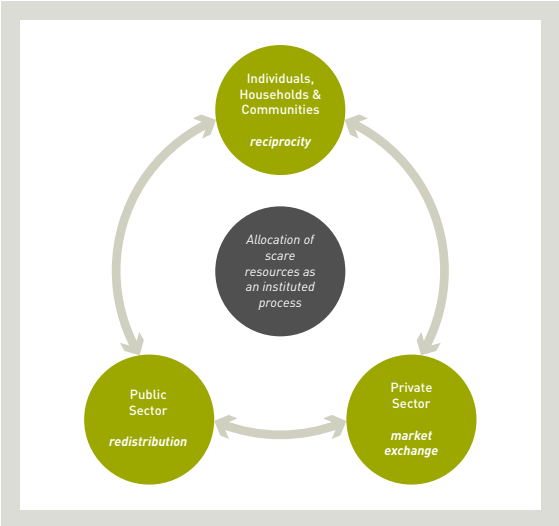

Figure 2. Key allocation mechanisms in the three economic domains
Source: Pouw, N. & A. McGregor (2014)

New Combinations of Institutions & Governance Principles

Since the institutions and governance mechanisms (simply defined here as the formal and informal 'rules of the game') differ for each of the three economic sectors, the social innovations are not only new combinations of resources, but also relate to a new 'hybrid' combination of the institutions of the three economic domains. Building on Polanyi (1944), and more recent for instance Pouw & McGregor (2014) we can see economic relationships as being

[2] Again we could see social innovation in the same way, as a disruptive source of energy, but at a societal system level, after including the social and political domain into the economic system

[3] For reasons of simplicity civil society, households and third sector is concidered here as one sector.

embedded in a broader context consisting of a political realm, a society and culture and a natural and built environment[4]. From this multi-dimensional perspective, the economy is the instituted process of scarce resource allocation, by and to economic agents. Besides the private and public sector, a third economic sector consisting of individuals, households and communities, has its archetype allocation mechanism: market exchange in the private sector, redistribution in the public sector, and reciprocity in the civic sector (**Figure 2**). When we study social innovation (at micro or macro-level) we find new combinations of all three of these archetype mechanisms.

Use Value & Exchange Value

In relation to services, human resources, intangibles, knowledge or capabilities there is a different meaning of the word 'use' from the traditional meaning in relation to goods where 'use' and 'consume' refer to 'use up' and 'destroy' (Vargo et al. 2008). In case of innovation (and the associated intangible resources and capabilities) the producers and users co-create value, and users continue the value creation process through use. The use value or social value of social innovations is difficult to measure and monetize into exchange value, or market value.

Aristotle (384–322 BC) was first to distinguish use-value from exchange-value (Fleetwood 1997). Vargo et al. (2008) describe how use-value and exchange value have been addressed in economic literature. Adam Smith (1776/2000: 31) referred to 'value-in-use' and 'value-in-exchange': *«The things which have the greatest value in use have frequently little or no value in exchange; and, on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarce anything; scarce anything can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it».* Economists[5] have since, focussed on producing 'man's wants' because it generates purchasing power and less on meeting basic 'needs' which generates high use value and social value. Needs as in Maslow's hierarchy of basic needs, as for instance esteem, love, sense of belonging and safety have little and difficult to calculate value in exchange.

For our framework this implies that indicators on exchange value (in Euro's) are not enough, also more qualitative indicators on use value are required.

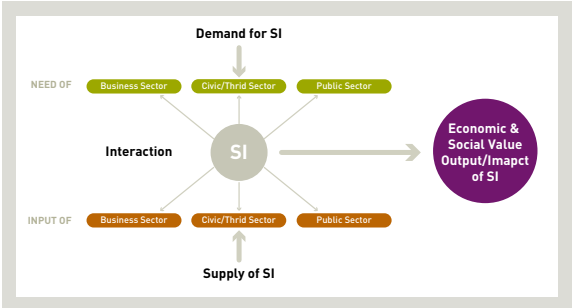

Figure 3. Value Co-creation in Interaction between Supply and Demand for Social Innovation

Interaction between Demand & Supply

The value or impact of social innovations derive from the interaction between the supply and demand for social innovations. In the words of Mulgan (2010: 41): *«Social value is not an objective fact. Instead, it emerges from the interaction of supply and demand, and therefore may change across time, people, places, and situations».*

Therefore, indicator sets require the inclusion of both indicators for the demand (or for the needs for social innovations) as well as indicators for the potential to supply solutions. The interaction between de demand- and supply-side of social innovation is in essence the economic underpinning of social innovation. However, this interaction is not mediated by prices on markets for exchange value. With old traditional solutions both the producers and users of the solutions have a reasonable idea about the results and the value the solution will bring, but with innovations there may not be a clue on any kind of value. The potential demand-side and supply-side will have to interact and learn from each other what the problem, solution and value could be like. A difference with the situation of demand and supply for technological inventions is that new technologies can be

[4] Also the CRESSI project takes such a multidimensional perspective, which is also applied to a multidimensional perspective on marginalised people, innovation and capabilities.

[5] Marx also distinguished use value from exchange value, but his main focus was on the unfair distribution of exchange value between capital and labour.

tested and evaluated (ex-ante) in scientific labs, or clinical trials under controlled conditions, before entering the market or adoption by society can be allowed and promoted. Unlike a new drug or machine, Social Innovations cannot be tested under fully controlled conditions, and will therefore generate different results in different contexts. However, the situation of social innovation is similar to the development of technological applications, diffusion and service innovations, where producers and users of innovations have to engage in interactive learning (Lundvall 1992), which involves communicating tacit knowledge and discussions of intangibles, and the co-production of use value, or 'value-in-context' (Vargo et al. 2008) by collaborating partners.

2 REQUIREMENTS & SUGGESTED MEASUREMENT FRAMEWORK

The most important indicator gap is that statistics on social innovations and social innovators are lacking. There are extensive collections of case studies, but the information is hardly captured in indicators. Moreover, the conducted surveys do not use standardised definitions, and the number of respondents is usually too small to serve as a basis for statistics.

In addition, the measurement of SI in the public and business sector is lacking. However, the traditional innovation sectors are starting to think on how to collect data on being socially responsible. In the private sector the theme is Corporate Social Responsibility. The traditional STI or EU research sector refers to Responsible Research and Innovation, and have proposed indicators for this (EU 2015b). But, none of these 'social responsible' initiatives to improve indicators, is based on information from social innovators, their users, partners, or beneficiaries.

Regarding the term 'economic indicators' in relation to social innovation the interpretation is sometimes limited to indicators which capture exchange value in Euro, e.g. based on impact assessment exercises (such as Social Return on Investment tools) where all use values and social indicators are monetised, that is: translated into money/market value. The experience from the SIMPACT case studies has shown that it is very difficult to collect information in terms of market value. Information on use value, intangibles, capabilities, well-being, etc., requires indicators which are not monetised into Euro.

The data used at the macro-level is often collected for other purposes. It concerns data that can be used as indicators for certain inputs, conditions or outputs, but the actual SIs, activities, and innovators as well as current users and beneficiaries remain unknown, and are not directly measured by statistics. Moreover, data on for instance the size of the third sector and voluntary work is not comparable among Member States, and lacking for some. The TEPSIE study and ITSSOIN ('Impact of the Third sector as SI') project, two of the most interesting studies on measuring SI, both focus on the macro level and on indicators for the potential supply-side of SI. One of the 'gaps' or difficulties both these studies encounter concerns the availability and comparability of the data between countries, e.g. statistical differences in capturing the "social economy", third sectors, or share of volunteers in these sectors (Hubrich et al. 2012: 9-10; Anheier et al. 2014). With their focus on the supply-side of SI a gap concerns the role of (indicators for) the specific needs and demand for SI.

2.1 Indicator Set Requirements

We can summarise the following requirements concerning an SI indicator framework:

- Include both economic and social indicators, addressing exchange value and use value;
- Indicators which capture the demand-side of SI as well as the supply-side;
- Provide indications for tangible and intangible capital (resources/capabilities/inputs/outputs) for SI;
- Include information from three economic sectors: the private sector, the public sector, and the civil or third sector;
- Include metrics to indicate economic benefits and capability improvements from SI for the innovator as well as for the beneficiaries;
- Include indicators to capture SI components, objectives and principles.

Further specification calls for information on specific types of social innovations, themes and target groups, and for instance the geographical scale of operations.

2.2 Suggested Measurement Framework

For the suggested measurement framework, it is practical to depart from existing data sources concerning the possible traditional economic activity metrics such as turnover, expenditure and employment in the sectors. An important but difficult metric concerns the measurement of volunteer input in terms of manpower and time expended on volunteering. Next to these the Third Sector has another quantifiable activity, which is perhaps even more difficult, as it is made of different components and even differs per NPO: income (Anheier 2004). Income in this sector is of course quantifiable through measuring donated funds, however there are two more possible income flows; subsidies and sales which are potentially measurable (Salomon & Anheier, 1996).

Indicators for «Use Value» Components

The ***'use value'*** from these activities however is less easily measurable, at least not in the traditional way. Ethical, environmental, human rights, community and societal benefits are all less easily visible and measurable as they concern non-financial and non-physical resources but they are main contributors to human welfare or better said well-being. Even if such use values are not directly visible there are still data and information that could be gathered on important use value components such as:

- trust in government, institutions, policies, third sector initiatives and community actions (Nicholls 2009);
- interest in, and recognition of, the needs of marginalized communities;
- capacities to, resolve problems, address needs and conflicting interests, and act on emerging conflicts;
- participation in common causes, working for the common good.

These data can be translated into metrics, but, it must be remembered that these metrics and their derived indicators are context sensitive and often address specific societal concerns and stakeholder needs.

Resources at Micro-level

An example of a practical approach incorporating several of the requirements as laid out above, is provided by the New Economics Foundation (NEF). They present an array of indicators on micro and macro levels. At the micro level this includes questions on capabilities of the beneficiaries, e.g. with regards to basic work skills or 'life skills'. In our economic measurement framework at the micro-level of individual social innovations, also the improvement of capabilities of the social innovators matter, e.g. asking under the heading of impact for an improvement of the self-confidence of the social innovator, increased management capabilities, improved network, increased revenues, etc. As an indicator for economic benefits of the SI on the public sector we included a question asking to rate the reduced public budget costs.

Capitals at Macro-level

Table 1 below summarises the suggested indicator set of macro-level indicators. The main indicator headings refer to economic and social resources or capital: Labour, Financial capital, Public Capital, Knowledge, Social Capital, and Health. Since SIMPACT does not have a thematic focus on SIs addressing health, this last module of the indicator set is less relevant for the SIMPACT analysis. A distinction has been made between indicators capturing SI potential (or supply) and those indicating SI needs or demand-side. In addition, a distinction is made between tangible and intangible indicators. The contribution to the potential or needs may come from either the public, private, or civic/third sector.

Table 1. Macro-level (national and regional) Indicator set for SI, with EU data sources

		Tangible	Intangible
Labour	SI POTENTIAL	**Number of workers in human health and social activities (NACE R2, Q)** Available: Eurostat table lfsq_egan2	**Voluntary work: Unpaid work social welfare service** Available: European Values Survey Variable A081
	SI NEEDS	**Long-term unemployment rates by sex, age and citizenship** Available: Eurostat table lfsq_urgan	
		Inactive population by sex, age and willingness to work Available: Eurostat table lfsq_igaww	**Job satisfaction** Available: European Values Survey Variable C033
Financial Capital	SI POTENTIAL	**GDP at market prices** Available: Word Bank, WDI Tables	
		Government expenses – providing goods and services (% of GDP) Available: Word Bank, WDI Tables	**Total expenditure of charities and foundations** Available: DAFNE Donors and Foundations Network Europe
		Total public expenditure on social benefits Available: Eurostat table tps00102	
		Innovative enterprises that receive public funding as a % of total Available: Eurostat table htec_cis6	**Starting a Business** Available: World Bank, Doing Business Data
		Number of Start-ups: Business demographics main variables Available: Eurostat table tin00170	
	SI NEEDS	**Central government dept, total (% of GDP)** Available: Word Bank, WDI Tables	
		Enterprise death rates: Business demography main variables Available: Eurostat table tin00170	
		People at risk of poverty or social exclusion Available: Eurostat table tipslc10	**Claiming state benefits which you are not entitled to** Available: European Values Survey Variable F114
		Housing cost overburden rate by age group Available: Eurostat table tessi161	
Public Capital	SI POTENTIAL	**Infrastructure Investment** Available: OECD doi:10.1787/b06ce3ad-en	
		Level of internet access – households Available: Eurostat table tin00134	
		Government Expense – providing goods and services (% of GDP) Available: Eurostat table tin00134	**Mode of transport – Typically most often uses** Available: Eurobarometer 82.2 (Oct 2014) Variable qa1
	SI NEEDS	**Quality of Government** Available: European Quality of Government Index (EQI)	**Internet subscription – main factor** Available: Eurobarometer 81.1 (Jan 2014) Variable qb7a
		Modal split of passenger transport Available: Eurostat table tran_hv_psmod	**Mode of transport reason: No alternative** Available: Eurobarometer 82.2 (Oct 2014) Variable qa2.7

		Tangible	Intangible
Knowledge Capital	SI POTENTIAL	**Total public expenditure on education** Available: Eurostat table tps00158	
		Employment by sex, occupation and educational attainment Available: Eurostat table lfsa_egised	**Lifelong learning** Available: Eurostat table tsdsc440
		Research on SI (publications & patents) Available: Patstat, Scopus and EU OpenAIRE	**Young people's social origin, educational attainment level & labour outcomes** Available: Eurostat table edat_lfso_00t3
	SI NEEDS	**Early leavers from education and training, age group 18-24** Available: Eurostat table tesem020	**Improve knowledge/skills: last 12 months** Available: ESS7-2014, Variable atncrse
Social Capital	SI POTENTIAL	**Total expenditure on social protection by type (% of total expenditure)** Available: Eurostat table tps00101	**Feel concerned about: People in the neighbourhood** Available: European Values Survey, Variable E154
		Membership of a social welfare service, organisation, charity Available: European Values Survey, Variable A064	**Prepared to help people in the neighbourhood** Available: European Values Survey, Variable E164
	SI NEEDS	**Quality of Government** Available: European Quality of Government Index (EQI)	**Trust in country's parliament** Available: ESS7-2014, Variable trstpr1
		Gender differences in the at-risk-of-poverty rate Available: Eurostat table ilc_pnp9	**Trust in the legal system** Available: ESS7-2014, Variable trstlgl
		Immigration Available: Eurostat table tps00176	**Trust in people** Available: ESS7-2014, Variable ppltrst
Health	SI POTENTIAL	**Expenditure of providers of health care by financing agents in health care** Available: Eurostat table hlth_rs_prsrg	
		Health personnel by NUTS 2 regions Available: Eurostat table hlth_rs_prsrg	**Subjective general health** Available: ESS6-2012, Variable health C7
	SI NEEDS	**Self-reported unmet needs for medical examination by sex, age, detailed reasons and income qunatile** Available: Eurostat table tgs00064	**Hampered in daily activities by illness/disability/infirmity/mental problem** Available: ESS7-2014, Variable hltphnap

3 SI INDICATOR APPLICATION AT MICRO-LEVEL

3.1 SIMPACT Survey

The constructed SIMPACT database consists of 55 cases of social innovation (N = 55). The survey has been conducted online in the beginning of 2016 and the questions have been answered by the authors of the in-depth case studies. The first part of the survey consists of questions which could be answered with yes or no, but the largest part of the questions ask for a rating on a Likert-type scale, ranging from very high to very low. Besides questions on the type of SI, the actors involved, and type of funders, there are several main groups of questions on: objectives, input of resources, obstacles, and output/outcomes. In the rest of this text we will simply refer to these output and outcomes with the term impact.

The first eight impact questions ask to rate the likely achieved improvements for the marginalised target group. The next eight impact questions ask for a rating of the improvements for the social innovator. After four other impact questions we asked to rate the long-term perspective of the social innovation on a scale of 1 to 10.

3.2 Factor Analysis Capture Combinations: Mixed Modes

Many authors have shown patterns in the way firms innovate by a combination of resources, activities and capabilities. An overview provided by Frenz and Lambert (2012) refers to these innovation modes as 'mixed modes', since they indeed refer to certain combinations of innovation resources, activities and outputs which often can be found in one firm. There are two methods to come to such a typology: either prescriptive or exploratory. The exploratory methods 'let the data speak' by identifying patterns with for instance factor analysis (also known as data-reduction and principle component analysis). We choose in this study the second methodology, because it combines the in-sights from theory and empirical observations, and because it is a good methodology to develop indicators in emerging fields of research, when standards in definitions of concepts and statistical data are still lacking. An example of this exploratory approach for firms is Srholec and Verspagen (2008: 2012).

3.3 Inputs, Objectives, Obstacles & Impact

Regarding the measurement of SI at micro level it is relevant to capture various inputs, objectives, obstacles, and impact. We will discuss them briefly before focusing on impact.

Number of Supporting Actors & Diversity of Knowledge

The importance of certain inputs differs by for instance the type of main funder, the theme of SI, and the scale of operations. Social innovations at local scale have on average a lower number of actors & co-operations, and a lower degree of diversity of knowledge than social innovations which operate at national level. These two input-factors (a large number of actors & partners, and diversity of knowledge) are also characteristic for the social innovations, which have a very positive long-term perspective.

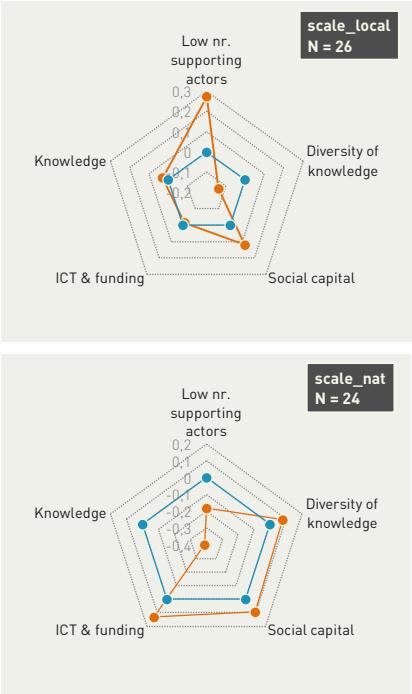

Figure 4.
SI input profiles by geographical scale of operation

Note: The average factor scores of SI cases is 0, indicated by the regular pentagon

Knowledge & ICT as Input of Social Innovation

ICT seems a more important source of input for social innovation in the theme of «Demographics» and «Education», than for social innovations in the theme of Employment. ICT investments tend to be also more common among social innovations that are implemented at national scale (compared to those

implemented at local scale). For SI in the theme of Employment, knowledge is a relatively important input.

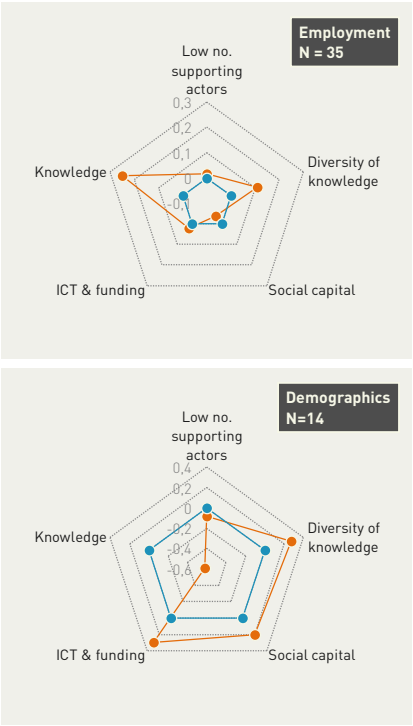

Figure 5. SI Input by Themes

Objectives

Concerning the objectives, the factor analysis results in two components, indicating two types of SI objectives: seizing business opportunities for revenues and profit; and the objective to improve socio-economic capabilities of the target group. A closer look shows that objectives concerning public aspects for the target group such as lobbying, raising legitimation and awareness (objectives which do not directly benefit certain people within the marginalised target group), can hardly be found among innovators with high rated importance of business objectives.

Inter-related Obstacles

The co-rated importance of organisational and legal obstacles confirms the importance of the hybrid issue for social innovators concerning the problem to find the appropriate legal form of organisation for their activities. The concentration of social, financial and political obstacles for certain social innovations seems to serve as an identification of radical social innovations.

Five Types of Impact

Out of the answers on 21 impact questions six types of impacts have been identified with factor analysis (**Table 2**). Three of them have been labelled economic impact, namely: economic impact for the innovator, economic impact for the target group, and economic impact for governments from discharging public budgets. Other social benefits cannot directly be translated into economic benefits, or it would take a much longer time to materialize.

	TYPES OF SI IMPACT					
	1 Economic impact for innovator	**2 Economic impact for target group**	**3 Social impact for target group**	**4 Increased physical capability target group**	**5 Economic impact from discharging public budgets**	**6 Other civic impact**
Improved financial stability and viable business	**.856**					
Improved revenues/ less cost for innovator	**.841**					
Improved management/business capabilities of innovator	**.827**					
Employment growth at innovator	**.817**					
Increased marketing capabilities of innovator	**.776**					
Improved networks of innovator	.691					
Other benefits for private partners	.665					
Generate revenues /sales	.580					.527
Improved self-confidence of innovator	.534		.468			
Employment target group		**.983**				

	TYPES OF SI IMPACT					
	1 Economic impact for innovator	**2 Economic impact for target group**	**3 Social impact for target group**	**4 Increased physical capability target group**	**5 Economic impact from discharging public budgets**	**6 Other civic impact**
Improved income / less cost target group		**.897**				
Increased work skills target group		**.880**				
Improved networks of marginalised			**.744**	-.310		
Improved self-confidence of marginalised target group			**.691**			
Other capabilities innovator	.522		.555			
Increased physical capabilities target group				**.873**		
Increased life skills target group				**.713**		
Other capabilities target group			.331	.430	.400	
Reduced public budget costs					**.772**	
Other complements to public policy					**.572**	.552
Other civic outcomes/benefits						**.771**

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 40 iterations. High factor loadings emphasized in bold, below 0.3 suppressed. Total variance explained by 6 factors= 67.0%

Table 2. Types of SI Impact, Pattern Matrix of Factor Analysis

3.4 Three Types of Economic Impact

Economic Impact for Governments from Discharging Public Budgets

The type of economic impact which is related to a discharge of public budgets is rated higher for social innovations which have a government as main funder. **Figure 6** shows that the SI cases which have either the state government or the local government as main funder, have above average rated impacts concerning discharge of public budget, while for instance the SI cases which are mainly funded by NGOs or Third sector organisations have on average a much lower rated economic impact for the government in terms of discharged public budgets. Besides a high economic impact for the government the SI cases funded by the governments also have in common a relatively low rated economic impact for the social innovator. The governments seem to outsource public social policy to social innovators, and along with the funding they also transfer their allocation routines and governance principle demanding a full redistribution of the funding to the benefit of the social policy target group (and the social innovators are apparently not an innovation policy target group for the governments).

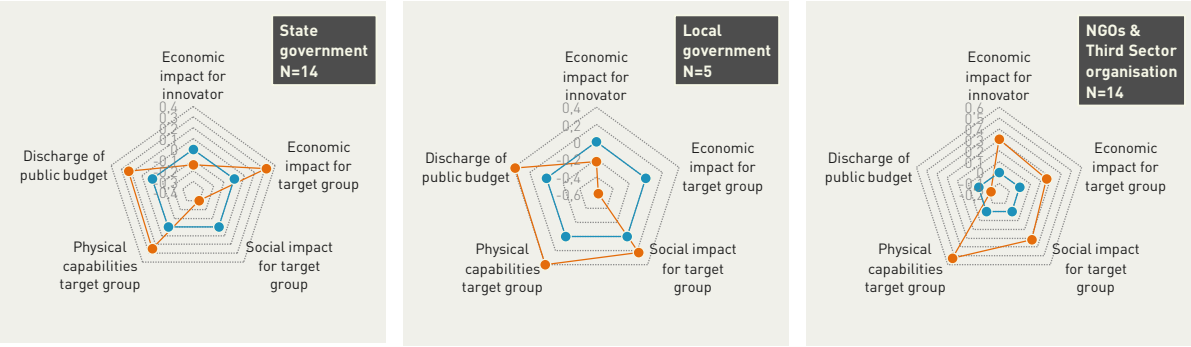

Figure 6. SI Impact by main Funder

Economic Impact for Target Group

Social innovations in the theme «Employment» are characterised by on average high economic impacts for the target group, and to a lesser extent also above average impact in terms of discharge of public budget. Especially the economic impact for the target group are rated lower for social innovation under the theme «Demographics» (**Figure 7**).

For SI in the theme of «demographics» the average economic impact for the target group is rated relatively low, but one has to bear in mind that when the marginalized target group consists for instance of young children or elderly, outcomes in terms of increased employment or work skills are less applicable.

Figure 7. SI Impact by Theme of SI

Economic Impact for Innovator

We have already shown that some social innovations generate more economic impact for the innovator than others, e.g. the investments of NGOs and third sector organisations as main funders seem more successful in increasing the capacities of the innovators than the investments by governments as main funders.

Also a distinction between the types of social innovation seems to matter. On average social innovations that are product/service innovations do well on the economic impacts for the innovators, while those that address a new target group do very well on all impact fields, except economic impacts for the innovator(**Figure 8**). In order to improve their long-term perspective, policymakers should therefore invest in the business capabilities of these social innovators (without applying further output related objectives concerning benefits for the marginalized target group).

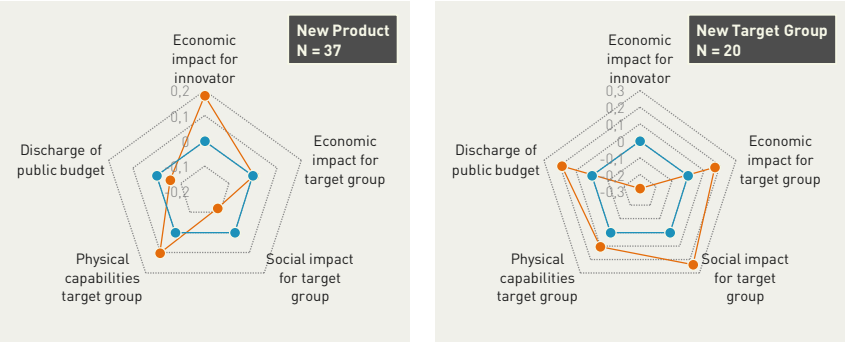

Figure 8. Impact Profile by Type of SI

Conclusion: Empower Target Group & Innovator

Social innovations that have a very positive long-term (LT) perspective, show above average scores on economic impacts for the innovator, but also perform well on all other impacts for other stakeholders. Social innovations which long-term outlook has been rated negative, especially lack economic impacts generated for the innovators. Although these social innovations still generate impacts, without increased economic capabilities of the innovators these social innovations do not seem to be sustainable.

The more general policy implication is that policy makers, who want to increase the long-term economic and other impact of social innovation, should not merely focus on output in terms of empowerment of the marginalised target group. Having a more systemic perspective in mind, they should also invest in the empowerment and long-term perspective of the social innovators. Public funding for social innovation should not only be seen as social policy, but also as innovation policy.

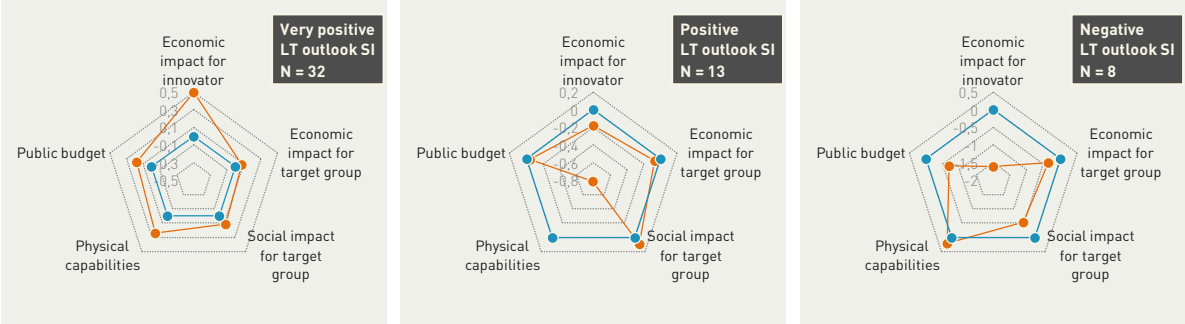

Figure 9. Impact Profile by long-term Outlook on SI

4 APPLICATION OF SI INDICATORS AT REGIONAL LEVEL

Based on the indicator framework and the theoretical and practical considerations as detailed above, a large set of 63 regional indicators related to social innovation has been collected from a number of resources, see Appendix 1 and Table 3 for a selection of them. In order to identify the main types of social innovation ecosystems at regional level, multi-variate methods of data-reduction (principal component or factor-analysis, and cluster-analysis) are very appropriate to identify patterns in the social innovation metrics and to construct composite indicators (Nardo & Saisana 2005), as is for instance done for technological innovation at regional level in Europe (Dunnewijk et al. 2008; Wintjes & Hollanders 2010; Wintjes & Hollanders 2011).

	Variable	Potential/ Need	Tangible/ Intangible	Source
1	Trust in the European Parliament	Need	Intangible	ESS
2	Trust in the legal system	Need	Intangible	ESS
3	Employees who are involved in life-long learning	Potential	Intangible	Eurostat
4	Students leaving compulsory education	Need	Tangible	Eurostat
5	Early leavers from education and training	Need	Tangible	Eurostat
6	Size of public sector: Employment	Potential	Tangible	Eurostat

	Variable	Potential/ Need	Tangible/ Intangible	Source
7	Size of public sector: Government expense on operating activities and services	Potential	Tangible	World Bank
8	Helping or attending local area activities	Potential	Intangible	ESS
9	World Giving Index	Potential	Intangible	WGI
10	Safety as a part of well-being	Need	Intangible	OECD

Table 3. Exemplification of Indicators in the Database

Based on the variables with high loadings in the pattern matrix, five regional (NUTS2) social innovation components have been identified (see Appendix 1), of which the first and second factor are analysed more closely: The first factor *«Governance vs. Civil»* shows high negative loadings for the indicators 'helping strangers' and the 'World Giving Index' as well as high loadings on many governance issues, e.g.: 'citizens are treated equally in public education'. Since factor analysis can be seen as an impressionistic method, there is room for various interpretations of the different factors or components (**Figure 10**). With a more cynical view we could say that in factor one we see people enjoying a high quality of life; well-educated and with a good job, enjoying good services in a safe environment, but at the same time not very open to giving and helping others in need. Perhaps an exponent of an increasing individualistic society?

Factor two labelled *«Unemployment»* scores high on 'youth', 'female' and 'total unemployment', but also on 'employees involved in life-long learning (LLL)', 'immigration', and for instance, 'size of the public sector' in terms of employment. When interpreting this data, one has to consider that the regional data on these issues refers to the situation of several years ago. The map (**Figure 11**) shows that this social innovation component is geographically very fragmented across Europe.

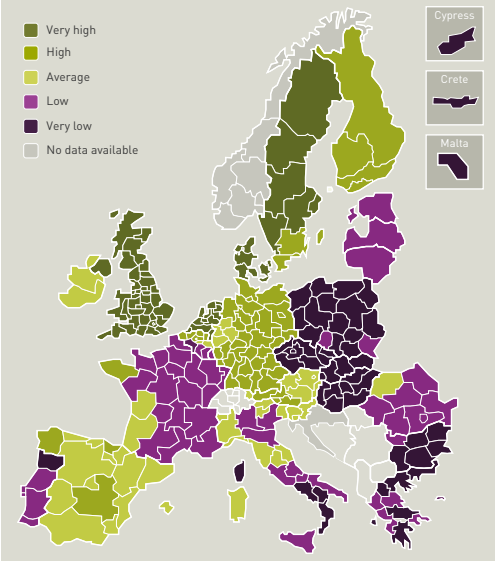

Figure 10. Regional Scores on 'Governance vs. Civil'

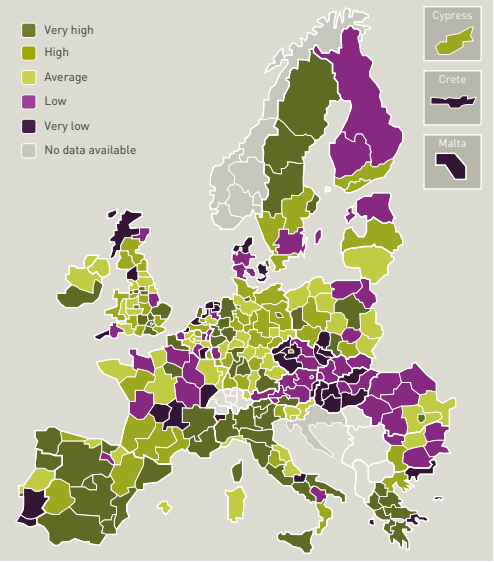

Figure 11. Regional Scores on 'Unemployment'

Of course, there is quite some regional variation within this component, e.g. among the top-10 high scores on the factor «Unemployment» the scores of Spanish regions such as Madrid, Andalucia and Barcelona are to a large extent based on high unemployment rates, but the very high scores on this factor for many other regions in this top-10 (e.g., Lombardia, London and Berlin) are based to a large extent on other variables with high loadings within this factor (such as LLL, immigration, public sector, and population density). The maps below illustrate regions' regional factor loadings by score ranging from 'very high' (dark green) to 'average' (light green) and 'very low' (dark purple).

With reference to a large set of regional statistics, we can conclude that the regional situation concerning social innovation differs across Europe.

4.1 SI Factors Impact – GDP and beyond

The identified regional social innovation factors are both related to differences in regional GDP as well as regional Human Development Index (HDI), an index which can be seen as an output indicator to measure the impact of social innovation beyond GDP. In **Figure 12** a comparison is shown between two regressions for one of the 5 regional SI components, with on the left the Regional Human Development Index (Regional HDI) as the dependent variable, and on the right the Regional GDP as a dependent variable (or output-indicator).

The regional social innovation factors: 'Governance vs. Civil' and 'Engagement' are positively related to both regional HDI as well as GDP per capita, so these social innovation components indeed seem to have a positive impact on GDP, and beyond. The factor 'Failing education' has a negative impact on both output indicators HDI and GDP. The factors 'Unemployment', and 'Trust in state and new ideas' do not seems to impact HDI or GDP.

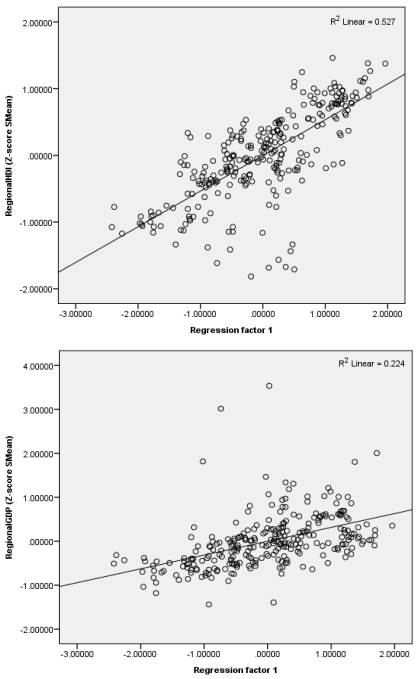

Figure 12. Regressions for regional SI Factor 1: 'Governance vs. Civil' with Regional HDI (top) and GDP (bottom) as dependent variables

4.2 Four Types of SI Ecosystems

With a cluster analysis on the five factors we can identify which regions have similar scores on the SI factors. From this analysis four different types of social innovation regions or regional (eco)systems of innovation within the EU emerge (**Figure 13**).

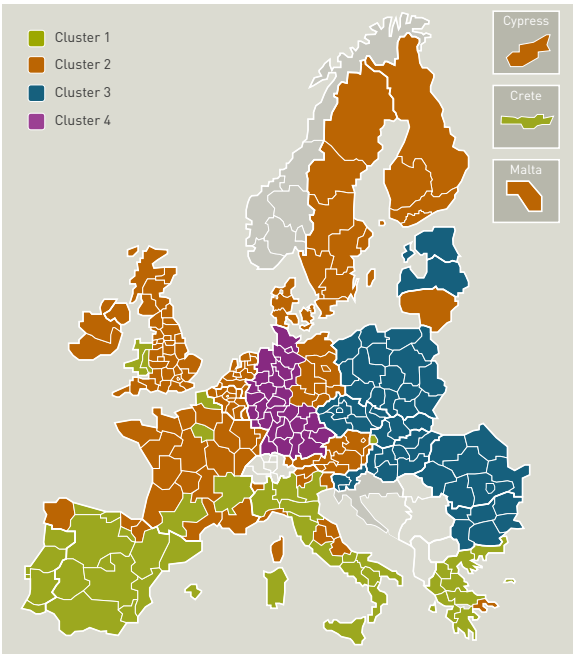

Figure 13. Four Types of Regional SI Ecosystems in Europe

The first cluster of regions (mostly located in the south of the EU) with similar social innovation features, is characterised by the high score on the SI factors which we have labelled *'Failing education'*, and 'Unemployment', and a very low score on the factor '*Governance vs. civil'*. The second group of regions is characterised by high regional factor scores on: *'Governance vs. civil'*, and *'Engagement'*. The third type of regional SI ecosystem scores below average on all the factors, which for instance means that on average *'Failing education'* and *'Unemployment'* is less of a SI issue in East EU regions than in south EU regions. The fourth type of SI regions score particularly well on the factor '*Trust in state & new ideas'* (**Figure 14**).

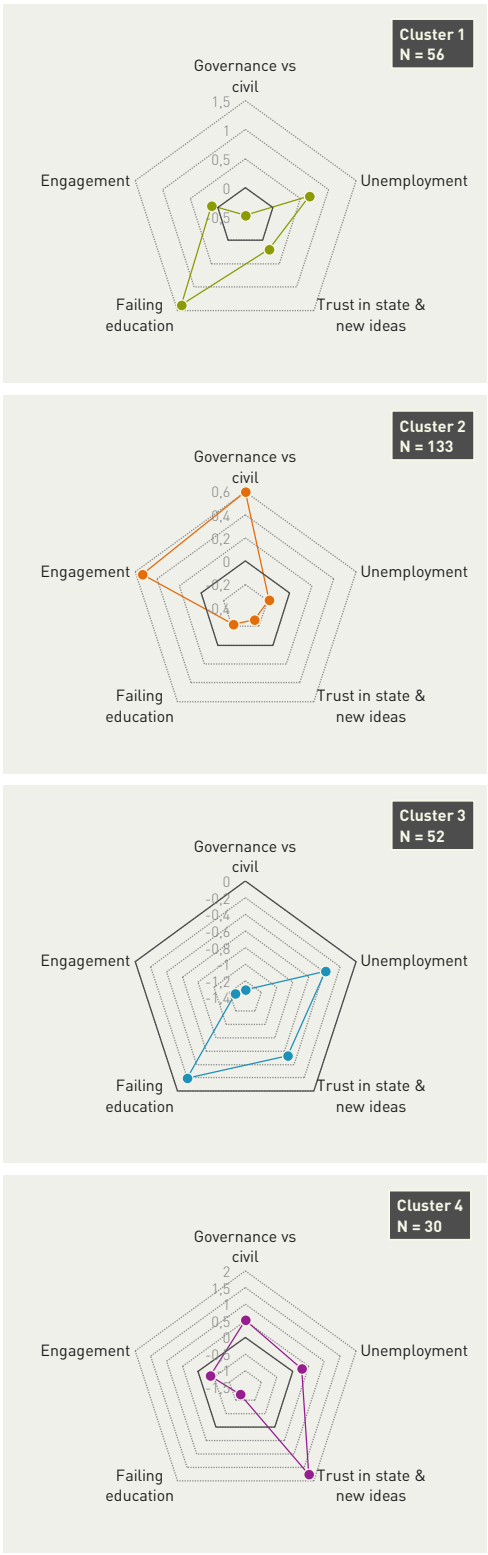

Figure 14. Macro SI Profiles for the four Types of SI Ecosystems

These macro-level SI profiles show the contextual differences. In the analysis of the SIMPACT SI cases and their impacts these differences should be taken into account. E.g. the SIMPACT cases within the theme of *«Employment»* have mostly emerged in regions with a very high score on the regional SI factor *'Unemployment'*. (We recall that this factor also consists of indicators for needs as well as potential: e.g. Life-long-learning). The regions where the SIMPACT cases of the theme of *«Demographics»* originate have on average high levels of *'Governance vs. civil'*, and *'Engagement'*.

SIMPACT social innovations with a very positive long-term outlook are especially to be found in regions, which have high scores on the SI factor *'Unemployment'*, and where life-long-learning type of social innovations seems to serve the marginalised target groups as well as their regional economies.

4.3 Comparing Micro-SI cases from two Macro-contexts of Contrasting Types of Regional Systems of SI

The number of SI cases per type of region are quite small for cluster 4 and cluster 3. Concerning the micro-profiles of SI per type of region we therefore limit our-selves to a descriptive comparison between those of cluster 1 and cluster 2.

The SIMPACT cases in the first type of region do particularly well on economic impact for the target group. The SIMPACT cases in the second type of region have rather disappointing economic impacts, especially in terms of economic impact for the target group. The social impact for the target group is similar to the average of all 55 SIMPACT cases (**Figure 15**).

A large part of the differences between the cases in cluster 1 and cluster 2 type of regions is based on the difference according to the theme of the social innovations. In type 1 SI regions 15 out of the 18 cases concern social innovations in the field of *«Employment»* which seems to be very relevant in their regional context with high factor scores on the SI components of *'Unemployment'* and *'Failing education'*. In type 2 SI regions half of all the cases of the *«Demographics»* and *«Migration»* themes are concentrated, for which it is more difficult to directly generate economic impacts in the short run. The needs addressed with these social innovations relate to the increased individualistic nature of society and the reduced budgets for high quality public government services in type 2 regions. Combined with the high potential for engagement in terms of volunteers the solutions transcend both those traditionally provided in the institutional context of family, as well as those (formerly) provided by their well-fare state regime.

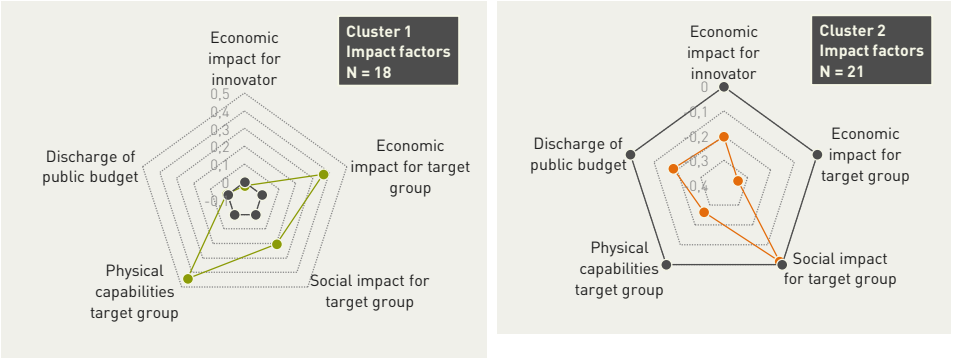

Figure 15. Impact Profiles by Type of Regional SI System

5 CONCLUSIONS

It has been shown that social innovation has many facets, covers a broad range of aspects, and calls for a societal perspective which goes beyond a mere technological or market based perspective which is often applied when studying other forms of innovation such as traditional technological and economic innovations. Accordingly, metrics and measurement approaches need to incorporate a broader perspective, concerning the core aspects:

First, public, social/third, and private sector plus civil society need to be considered and included in an integrated way, when developing a systemic measurement concept. This is particularly the case, as social innovation deals with new combinations of the diverse actors' capabilities and resources which serve as an input to the innovation process. In addition, actors' distinct objectives as well as the benefits and impacts they derive from the social innovation have to be considered. Forasmuch, measuring social innovation involves capturing these (often untraded, but) interdependent aspects for the various sectors. Limiting impact indicators to one or two selected sectors (E.g., by taking into account only the impact on the marginalised target group in civil society, or the discharge of public budget) is not sufficient as it would be an incomplete picture of all involved economic actors/sectors in society at large. This also implies that measuring and evaluating impact should in principle be a collective systemic effort. It is for instance not optimal when public or other main funders have a dominant position, which enables them to dictate out-put indicators and targets, without any interaction with other stakeholders.

Second, value and impact of social innovation result from the interaction between demand and supply. Thus, indicator sets need to cover both, indicators that capture the demand/needs as well as well indicators which capture the potential to supply solutions. The interaction between de demand and supply-side as economic underpinning of social innovation is not mediated by prices on markets for exchange value. As with other kinds of innovations the producers and users of innovations have to engage in interactive learning, which involves communicating tacit knowledge and discussions of intangibles and use value among collaborating partners. An aspect which also needs to be reflected in an indicator set.

Third, with regard to the micro-level of social innovation various inputs, outputs, objectives and obstacles need to be captured. A measurement concept needs to account for differences in importance of various inputs. For example, the type of main funder, the theme addressed or the scale of operations affect the importance of input factors. Social innovations at local scale have on average a lower number of actors and supporting partners, and a lower degree of diversity of knowledge than those operating at national level. ICT show to be a more important source of input for social innovation addressing «Demographics» and «Education», than for those focusing on «Employment». Also ICT investments are more common among social innovations which are implemented at national scale (compared to those implemented at local scale). On the other hand, for social innovation targeting «Employment», knowledge is a relatively important input. The co-rated importance of organisational and legal obstacles confirms the importance of the hybrid issue for social innovators concerning the problem to find the appropriate legal form of organisation for their activities. Several types of economic impact can be identified: economic impacts for the innovator, economic impacts for the for the target group, and economic impact for the government in terms of discharged public budget. Other social benefits cannot directly, i.e. in the short term, be translated into economic benefits.

Fourth, with regard social innovations' impact it appears that compared to social innovations of the «Demographic» theme, social innovations addressing «Employment» are characterised by on average high economic impacts for the target group. The economic impact related to a discharge of public budgets is rated high for social innovations which have a government as main funder, while the impact for the social innovator is on average very low. This division of economic impact contrasts with SI cases which are mainly funded by NGOs or Third sector because they have much higher rated impacts for the social innovator.

Also it becomes evident that social innovations in the form of products/services achieve good values with regard to the economic impact for the innovators. Social innovations addressing new target groups do well on all forms of impact, except for the economic impact for the innovator. In order to improve their long-term perspective, policymakers should, therefore, invest in the business capabilities of the innovators. Social innovations with a very positive long-term perspective, have above average scores on impacts for the innovator, but also for social as well as economic benefits for the target group. The more general policy implication is that policymakers, who want to increase the long-term economic impact from social innovation, should not merely focus on output in terms of empowerment of the marginalised

target group, but should also invest in the empowerment and long-term perspective of the social innovators.

Fifth, regional SI factors which have been derived from a large set of regional indicators seem to have a positive impact on regional GDP as well as on the Regional Human Development Index, which can be seen as an out-put indicator for 'Beyond GDP' impacts. Four different types of regional systems of social innovation have been identified in Europe. The characteristics of the micro-level cases per type, match the characteristics of the regional context from which they originate. As different contexts, with different co-located SI needs and SI potential, they induce different micro-level social innovations and impacts.

References

Anheier, H. K., Krlev, G., Preuss, S., Mildenberger, G. & T. Einarsson (2014). Theory and empirical capturing of the third sector at the macro level. Deliverable 2.1 of the project: 'Impact of the Third sector as Social Innovation' (ITSSOIN), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.

Corrado, C., C. R. Hulten, & D. E. Sichel (2006). Intangible Capital and Economic Growth. NBER Working Paper No. 11948.

Dunnewijk, T., H. Hollanders & R. Wintjes (2008). Benchmarking Regions in the Enlarged Europe: Diversity in Knowledge Potential and Policy Options. In C. Nauwelaers and R. Wintjes (eds.*), Innovation Policy in Europe*, Edward Elgar: Cheltenham, 53-106.

European Commission (2015). Indicators for promoting and monitoring Responsible Research and Innovation. Report from the Expert Group on Policy Indicators for Responsible Research and Innovation. Directorate-General for Research and Innovation. EC, Brussels.

Dosi, G. (1982). Technological paradigms and technological trajectories: A suggested interpretation of the determinants and directions of technical change. *Research Policy*, 11(3): 147-162.

Fagerberg, J. (2014). Schumpeter and the revival of evolutionary economics: an appraisal of the literature. *Journal of Evolutionary Economics*, 13(2): 125-159.

Fleetwood, S. (1997) Aristotle in the 21st century. *Cambridge Journal of Economics,* 21(6): 729–744.

Hubrich, D.-K., Schmitz, B., Mildenberger, G. & E. Bund (2012). The Measurement of Social Economies in Europe - a First Step towards an Understanding of Social Innovation. A Deliverable of the Project: "The Theoretical, Empirical and Policy Foundations for Building Social Innovation in Europe" (TEPSIE), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.

Krlev, G., Bund, E. & G. Mildenberger (2014). Measuring What Matters: Indicators of Social Innovativeness on the National Level. *Information Systems Management*, 31(3): 200–224.

Lundvall, B. A., ed. (1992). *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter.

Mazzucato, M. (2013a). *The Entrepreneurial State – Debunking Public vs. Private Sector Myths*, Anthem Press.

Mazzucato, M. (2013b). Financing innovation: Creative destruction vs. destructive creation. *Industrial and Corporate Change*,22(4): 851-867.

Mulgan, G. (2010). Measuring Social Value. *Stanford Social Innovation Review,* 8(3): 38-43.

Nardo, M. & Michela Saisana (2005). OECD/JRC Handbook on constructing composite indicators: Methodology and User Guide. *OECD Statistics, Working Papers* 2005/3, OECD Publishing.

Nelson, R. R. & S. G. Winter (1982). *An Evolutionary Theory of Economic Change*. Cambridge, Massachusetts: The Belknap Press.

Nicholls, A. (2009). We do good things, don't we? Blended Value Accounting in social entrepreneurship, *Accounting, Organizations and Society,* 34(6–7): 755–769.

Rehfeld, D., Terstriep, J., Welschhoff, J. & S. Alijani (2015). Comparative Report on Social Innovation Framework. Deliverable D1.1 of the project «Boosting the Impact of Social Innovation in Europe through Economic Underpinnings» (SIMPACT), European Commission –7th Framework Programme, Brussels: European Commission, DG Research and Innovation.

Schumpeter, J.A. (1912), *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*, (2008) translated from the German by Redvers Opie, New Brunswick and London: Transaction Publishers.

Schumpeter, J. A. (1937) "Preface to the Japanese Edition of "Theorie der Wirtschaftlichen Entwicklung," reprinted in Schumpeter, J. A. (1989) *Essays on Entrepreneurs, Innovations, Business Cycles and the Evolutions of Capitalism*, R. V. Clemence (ed.), New Brunswick NJ: Transaction Publishers, 165-168.

Smith, A. (2000). *The Wealth of Nations (1776).* New York: The Modern Library.

Srholec, M., & B. Verspagen (2012). The Voyage of the Beagle into innovation: explorations on heterogeneity, selection, and sectors*. Industrial and Corporate Change*, 21(5): 1221-1253.

Stiglitz, J.E.; Sen, A. & Fitoussi, J-P. (2009). Measuring Economic Performance and Social Progress., Paris: Report by the Commission on the Measurement of Economic Performance and Social Progress.

Terstriep, J., Kleverbeck, M., Deserti, A. & Rizzo, F. (2015). Comparative report on social innovation across Europe. Deliverable D3.2 of the project "Boosting the impact of SI in Europe through economic underpinnings" (SIMPACT), European Commission - 7th Framework Programme, Brussels: European Commission, DG Research & Innovation.

Vargo, S.L., Maglio, P. & M. Akaka (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*, 26(3): 145-152.

Wintjes, R. & H. Hollanders (2010). Regional impact of technological change in 2020; Synthesis Report. DG Regional Policy, European Commission, Brussels.

Wintjes, R. & H. Hollanders (2011). Innovation pathways and policy challenges at the regional level: smart specialization. *UNU-MERIT Working Papers Series*, 2011-027. UNU-MERIT, Maastricht.

Wintjes, R., Es-Sadki, N., Glott, R. & Notten, A. (2016): Improved Measurement of the Economics of Social Innovation. SIMPACT Project Report Nr. D5.1 Gelsenkirchen: Institute for Work and Technology

Appendix I

Factor Analysis on Regional Indicators: Five SI Components, Pattern Matrix

Variable	1 Governance vs. Civil	2 Unemploy-ment	3 Trust in State & New Ideas	4 Failing Education	5 Engage-ment
Helping a stranger	**-0.899**				0.33
World Giving Index	**-0.839**				
Citizens are treated equally in public education	**0.823**				
Corruption persists in law enforcement	0.733				
Other citizens use bribery to obtain public services	0.713				
Quality of Government index	0.688				
Share of part time employment in total employment	0.669				
Housing as a part of well-being	0.646				
Quality of law enforcement	0.636				
Most people can be trusted	0.579				
Corruption persists in regional elections	0.572				0.323
Environment as a part of well-being	0.554			0.429	
Quality of public education	0.503				
Share of innovators cooperating with others	0.482				0.344
Female educational attainment: Tertiary education	0.474	0.332			
Most people treat you fair	0.456				
Structural funds allocations on innovation	-0.409				
Independence/Autonomy on RTDI	0.404				
Income as a part of well-being	0.402				0.324
Male educational attainment: Tertiary education	0.398				
Safety as a part of well-being	0.361				
Youth unemployment		**0.866**			
Total unemployment		**0.865**			
Female unemployment		**0.859**			
Employees who are involved in life-long learning		**0.850**			
Estimated total international immigration		**0.842**			
Future international migration: Extrapolation for 2020-2030		0.807			
Size of public sector: Employment		0.527		-0.464	
Students leaving compulsory education without a diploma		0.508			
Regional population density		0.317			
Trust in the police			**0.866**		

Variable	1 Governance vs. Civil	2 Unemploy-ment	3 Trust in State & New Ideas	4 Failing Education	5 Engage-ment
It is important to think new ideas and be creative			**0.864**		
It is important that government is strong			**0.829**		
Trust in the European Parliament			**0.818**	0.330	
Trust in the legal system			**0.815**		
It is important to try new and different things			**0.813**		
Trust in politicians	0.348		0.693		
Feeling people in local area help each other			0.643		
Helping or attending local area activities	-0.344		0.573		
Feeling close to people in local area			0.447		
Independence/Autonomy in general					
Education as a part of well-being				**-0.896**	
Educational attainment: Less than primary and lower secondary				**0.887**	
Early leavers from education and training				**0.764**	
Jobs as a part of well-being	0.315			**-0.676**	
Long term unemployment				0.634	
Self-employed persons as part total employment				0.614	
People at risk of poverty				0.579	-0.383
Accessibility to services	0.506			-0.563	
People at risk of poverty or social exclusion				0.502	-0.388
Infrastructure as part of well-being				-0.492	0.301
Internet access	0.398			-0.428	
Net migration plus adjustment	0.302			-0.411	
Annual expenditure of the municipal authority per resident				-0.358	
Size of philanthropic sector: Number of organisations	0.347			-0.369	**-0.686**
Civic engagement as part of well-being					**0.663**
Share of innovators receiving public financial support					**0.588**
Size of public sector: Government expense on operating activities and services				0.339	**0.571**
Share of companies that introduced a service innovation					**0.523**
Business sophistication		0.44		-0.371	0.493
Per capita number of small firms					0.464
Health as a part of well-being	0.371			0.341	0.422
Share foreigners in the regional population					0.422

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 17 iterations.


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