EXPLORING THE CONCEPT OF SOCIAL INNOVATION USING OFFICIAL STATISTICS[1]

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Abstract. The concept of social innovation is linked to a new way of producing goods and services able to enhance the quality of life by developing new processes of integration in the labour market, creating new relations, meeting new needs (Mulgan, 2007). Moreover, the relevance of social innovation grows in the local development models as factor of change of territorial context (Moulaert *et al.*, 2017). The agents of this process are different: public institutions, enterprises, nonprofit institutions. Within the Istat Research Project "The nonprofit sector as factor of local development and social innovation", the concept of social innovation has been decomposed into its main dimensions in order to identify specific indicators able to describe the socioeconomic actor's initiatives and to explore their role in the regional development.

The Research Project applied a methodology based on the following steps: study of literature; breakdown of social innovation concept and definition of the dimensions to study; identification of indicators and the best territorial scale according to the research aim and to available data. A multivariate analysis was performed on data collected by Istat surveys on socio-economic units. In particular, the data sources were: Permanent Census of NPI, Permanent Census of Enterprises, Permanent Census of Public Institutions, Survey on Research and Development in enterprises and Community Innovation Survey (CIS).

The paper describes the main results about the different steps of analysis, from the operational definition of the concept to the multidimensional analysis performed in order to explore the possibility of studying the social innovation by applying official statistics in territorial analysis.

1. The Research Project

The paper describes the results achieved with the Research Project "The nonprofit sector as driver of local development and social innovation", approved by the Scientific Committee for the Innovation and scientific research Laboratories set up by Istat (2017/2018).

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[1] Although the contribution is the joint responsibility of the authors, sections 1 and 3.3 are attributed to Sabrina Stoppiello, sections 2.1 and 3.2 are attributed to Manuela Nicosia, section 2.2 and 3.1 are attributed to Stefania Della Queva. Final remarks and future steps (section 4) is the result of joint work by all the authors.

The aim of the Project was to analyse the role of nonprofit sector as factor of local development and social innovation, within the socio-economic context. Based on data analysis, a secondary objective was enhancing data availability, in order to create indicators able to measure social innovation at territorial level. The Research Project applied a methodology based on the following steps: study of literature; breakdown of social innovation concept and definition of the dimensions to study; identification of indicators and the best territorial scale according to the research aim and to available data; multivariate analysis with explorative aim. In order to improve the measurement of social innovation within official statistics, new contents have been defined to be included in the surveys on socio-economic units.

During the three years-Project, the concept of social innovation has been studied and explorative analysis have been performed by applying indicators from official statistics in order to enhance the statistical sources available. It is important to stress that the research have been carried out thanks also the cooperation with experts from University and the Third sector, whom contributed to enrich each step with their reflections and allowed to come up with a shared vision of results.

2. Methodology and data

2.1 Breakdown of social innovation concept and definition of data analysis dimensions

The concept of 'social innovation' is closely linked to the economic and socio-cultural changes that have arisen since the Second World War as a result of globalisation, international financial crises, as well as climate change and the increase and ageing of the world population. There was the need for European welfare systems to face new demographic, social and cultural challenges and, at the same time, to involve different actors, whom are in charge of community services in the definition of public policies. What emerges from the study of the literature is the polysemic nature of the concept, which has led scholars to identify different connotations and construct taxonomies to define its theoretical boundaries. We can find different theoretical approaches, which highlight different aspect of social innovation. One the most important comes from Mulgan, who defines social innovation as "new ideas that work in meeting social goals … Innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organisations whose primary purposes are social" (Mulgan, 2007, p. 8). Among others, Moulaert (2017) underlines the connection between social innovation and the new models of local development. Social innovation takes play as factor of change of socio-economic

context. The new models of economics and way to produce goods and services, which lead to the concept of 'social innovation', refer to the development of new services that improve the quality of life of individuals and communities, the development of new labour market integration processes and new skills and professions, and the creation of new forms of participation (Murray et al, 2010). The actors in these processes are different in nature: public institutions, business organizations and nonprofit institutions.

During the first step of research, the teamwork performed a brainstorming on social innovation definition, in order to compare different ideas and to develop new visions. Each definition was argued and each concept enunciated went into a shared picture, enriching the group's reflections. The ideas that emerged were reordered and grouped around four key-concepts, such as: Process, Objectives, Actors, and Results. The method of mind mapping (Buzan, 1995) was applied to the result of brainstorming. The mind map presents hierarchies and associations between concepts more clearly. The team worked with a digital mode during the lockdown period (in July 2020) addressing specific tasks: better specify the concepts already present; add more "branches" and sub-branches, i.e., other related concepts; add associations between concepts and branches (Figure 1).

Figure 1 – *Mind mapping on social innovation concept implemented by the teamwork and experts.*

Source: Istat – Research Project (Innovation and scientific research Laboratories)

The final step allowed to identify the dimensions of social innovation to be studied. Social innovation concerns: 1) the pursued objective, which is linked to social needs, and focuses on community well-being; 2) the result achieved, in terms of services, products or creation of new relations; 3) the process, in terms of collective initiative able to change the community conditions; 4) the resources (human, economic and social) which social innovation involve when it takes action. Based on these four dimensions, single indicators were selected in order to measure the different aspects of social innovation.

2.2. *The selection of indicators and data analysis*

After the definition of conceptual model through the identification of the dimensions and sub-dimensions that characterize the concept of social innovation, the study involved into the operationalization phase by the association of the elementary indicators with the sub-dimensions. The variables, included in the analysis, were identified and selected by various statistical sources, which allowed us to obtain a very rich informative dataset.

In particular, the data sources were the Permanent Census of NPI (2015), the Permanent Census of Enterprises (2018), the Permanent Census of Public Institutions (2017), the Survey on Research and Development in enterprises (2017) and the Community Innovation Survey-CIS (2018). Although the reference year of the data is different, it is necessary to underline that the sources have been selected to represent the information in a limited period and thus allow a comparison between the different data. Even though, in some cases, more up-to-date data exists, it was preferred to use those with a time reference closer to that of the census results, which play a central role in this analysis process.

All selected variables, on which we built the set of indicators useful for investigating the phenomenon, are at the regional level so that the first indicators built refer to the presence/diffusion of public, profit and nonprofit institutions in relation to the resident population and of particular types/sectors of activity.

The indicators relating to NPIs, which allow assumptions on the capacity of NPIs to generate social innovation, have been outlined based on some significant objectives, which can also be read in the analysis in terms of results (where produced). The objectives outlined are the reduction of inequalities and the social inclusion of disadvantaged and vulnerable people; the ability to reach new social categories; community wellbeing; the care of the commons; the economic development of the territorial context of reference; innovation in fundraising activities. Furthermore, another pillar on which social innovation is based is the creation of new relationships, therefore a fundamental indicator included in the

analysis is the spread of multi-stakeholder nonprofit institutions, capable of structuring significant relationships with different stakeholders (with different ways of involving them). Considering the subjects with which the NPIs structure significant relationships, two indicators were included in the analysis: the incidence of the NPIs which have beneficiaries as stakeholders and the NPIs that have public institutions as stakeholders.

As regards public institutions, the main indicators are the services provided in the sectors of social assistance and personal services, environmental protection and sustainability, and the research and development activities (by direct or indirect management). The survey on R&D activities in public institutions made it possible to select indicators on the propensity to implement innovation-oriented policies and on the relevance of R&D public spending on (considered in terms of impact on GDP) which represents a strategic variable for measuring the competitiveness of economic systems. In the questionnaire for the multi-purpose survey of enterprises was included a new section to investigate social and environmental responsibility as well as the role they play in the implementation of initiatives of collective interest. Thanks to this section, many indicators were selected precisely following the articulation of the questions. However, as regards the dimension that refers to R&D activities, the indicators were selected from the information bases relating to the surveys on Research and Development and on Innovation in companies.

A multivariate analysis was performed on data collected. In the principal component analysis carried out for exploratory purposes, a total of 46 numerical variables were taken into consideration, synthesized through linear combinations, in two synthetic indices (principal components), which allowed to outline the regional contexts. For the purposes of providing a summary framework, the first two components were selected which reproduce 46% of the variance and which define the different dimensions of social innovation linked to the presence of different peculiarities of the non-profit sector, businesses and public institutions on the territories. As is known, the first principal component extracted is the one that reproduces the maximum percentage of variance (in our case 27.8%) and the second, orthogonal to the first, presents a slightly lower percentage of variance extracted (18.7%). Given the small amount of variance explained by the subsequent components, it was decided not to proceed with the interpretation of other components[2].

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[2] The third component extracted reproduces the 10.8% of the variance. The study of the graphic representation of the components' eigenvalues according to their order of extraction shows how the line presents a strong inclination in correspondence with the second component after which an inflection is recorded.

3. Results

3.1 Profit and nonprofit sectors for community wellbeing

The first component represents the role of nonprofit institutions for community wellbeing and their spread across the territories (Figure 2).
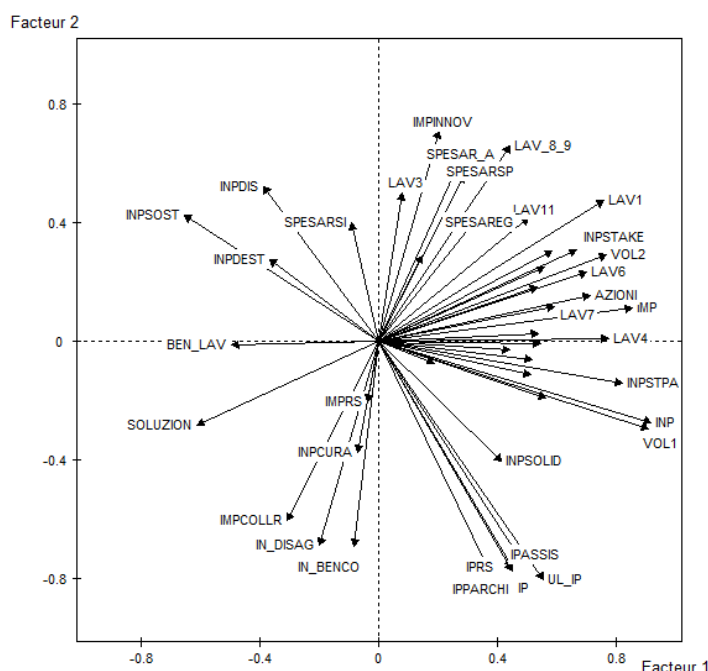
The positive values of the index, related to the first principal component, are associated with the significant presence of nonprofit institutions (Inp in Figure 2[3]) and enterprises in relation to the resident population (Imp). The public sector emerges as key-stakeholder of nonprofit institutions (Inpstpa), which build relations with different actors (Inpstake) as well. The index describes the presence of employees of nonprofit institutions engaged in the provision of services of social assistance and civil protection (Lav6). The identified component is also characterized by the presence of NPIs and enterprises dedicated to the economic and social wellbeing. On the one hand, the component synthesizes the relevant presence of paid workers in the sectors of Culture, sports and recreation (Lav1), Economic development and social cohesion (Lav6), Law, advocacy and politics (Lav7). On the other hand, the component describes the role of enterprises that have undertaken at least one action to reduce the consumption of natural resources and sustainably manage them (Azioni), by reflecting the commitment of these economic institutions in the future development of territories that is also achieved through attention to the environment. The indicators related to the presence of nonprofit institutions dedicated to the support of weak or struggling individuals (Inpsost) and oriented to fragile groups (Inpdis), with a role therefore in supporting social vulnerability, are associated with the negative semi-axis of the index. This typology is flanked by nonprofit institutions that recognize as stakeholders their beneficiaries (Inpdest), who are "at the center" of both planning and carrying out various social activities. The business sector is characterized by the presence of enterprises that have adopted at least one solution to promote environmental sustainability (Soluzion) or initiatives in favour of labour welfare and the development of equal opportunities within the company (Ben_lavo). The action of these economic actors also reaches outward, paying particular attention to combating poverty and social hardship (In_disag). The dense network of institutions is linked to the properly innovative component, which is that of research and development. Indeed, the variables referring to R&D activity in collaboration with external entities (Impcollr) and the high incidence of public R&D spending on GDP (Spesarsi) are found here.

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[3] Figure 2 shows the representation of the variables on the first two components; variables' labels are included in brackets when each single indicator is described.

3.2 The role of different actors for the local development

The second component provides a synthetic measure of the role which different actors (public, private for profit and nonprofit) play in the local development, by considering their offered services, the initiatives carried out in addressing community wellbeing, the care of common goods and driving to innovation (Figure 2).

Figure 2 – *Graphical representation of variables on the first two components.*

Negative values of the index are associated with a strong prevalence of public institutions (Ip; Ul_ip) in the territory and related services, especially those for environmental protection (Ipparchi) and assistance, public charity and personal care (Ipassis). The for-profit sector is characterized by enterprises that carry out initiatives for the public interest (In_benco) and against poverty and social hardship (In_disag). Drive for innovation at local level is well represented in the index, both in the public and private sector. In fact, the component synthesizes the presence of R&D services provided by public institutions (directly managed by the PA and/or entrusted to third

parties) (Iprs) and the presence of enterprises that have carried out R&D activities in cooperation with other organizations (Impcollr). As for nonprofit sector, negative values of the Component are associated with NPIs oriented to solidarity (Inpsolid), NPIs which mission is caring of commons (Inpcura) and voluntarism on Culture, sport and recreation (Vol1), which represents the most relevant part of the sector.
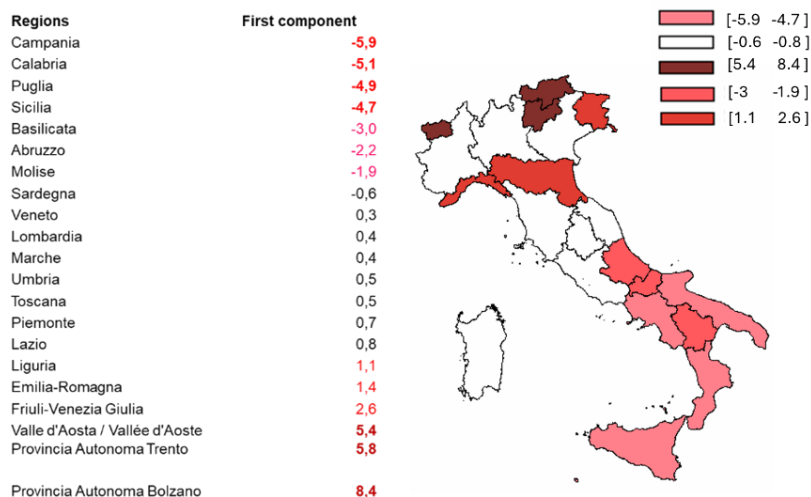
Positive values of the component represent a different contribution from actors to the local development. The index synthesizes the for profit sector investment on R&S, through the presence of enterprises that have introduced product and/or process innovations (Impinnov), the incidence of public (Spesarsi) and private R&D expenditure on GDP (Spesarsp), the incidence of business R&D expenditure (Spesar_a) and the average of regional expenditure on business innovation (Spesareg). Associated with these kind of economic actors are NPIs active in sectors more closely linked to hardship and social emergency. In fact, the component synthesizes the prevalence of NPIs focusing on vulnerability and the higher share of employment in sectors such as Health (Lav3), Philanthropy and promotion of voluntary work and International cooperation (Lav_8_9).

3.3 The regional contexts through the two components

The analysis of the Regions' scores on the first two components allows to describe the territories by considering the dimensions and to identify some homogeneities. Looking at the role of economic actors for the community wellbeing, Southern Italy shows a greater presence of NPIs oriented towards hardship and vulnerability, along with the presence of enterprises aimed at community wellbeing and at social responsibility. In the Autonomous Provinces of Trento and Bolzano, Valle d'Aosta, Emilia-Romagna, Liguria and Friuli Venezia Giulia there is a greater presence of volunteering and nonprofit institutions, of enterprises and networks between the various economic actors, as well (Figure 3).

Emilia-Romagna, followed by Lazio, Lombardia, Toscana and Piemonte shows the highest scores on the second component outlined, which describe the role of different actors for the local development. These regions are characterised by investments in research and development, nonprofit employment in healthcare, NPIs dedicated to the disadvantaged and fragile categories. In the regions of Southern Italy, in the Autonomous Provinces of Trento and Bolzano and in Valle d'Aosta, there is high presence of public institutions active in the management of services on the territory, businesses oriented towards social responsibility and NPIs dedicated to the community and common goods (Figure 4).

Figure 3 – *Graphical representation of regional scores on the first principal component*

Regions	First component
Campania	-5,9
Calabria	-5,1
Puglia	-4,9
Sicilia	-4,7
Basilicata	-3,0
Abruzzo	-2,2
Molise	-1,9
Sardegna	-0,6
Veneto	0,3
Lombardia	0,4
Marche	0,4
Umbria	0,5
Toscana	0,5
Piemonte	0,7
Lazio	0,8
Liguria	1,1
Emilia-Romagna	1,4
Friuli-Venezia Giulia	2,6
Valle d'Aosta / Vallée d'Aoste	5,4
Provincia Autonoma Trento	5,8
Provincia Autonoma Bolzano	8,4

[-5.9 -4.7]
[-0.6 -0.8]
[5.4 8.4]
[-3 -1.9]
[1.1 2.6]

Source: Our data processing from Istat – Research Project (Innovation and scientific research Laboratories)

Figure 4 – *Graphical representation of regional scores on the second principal component.*
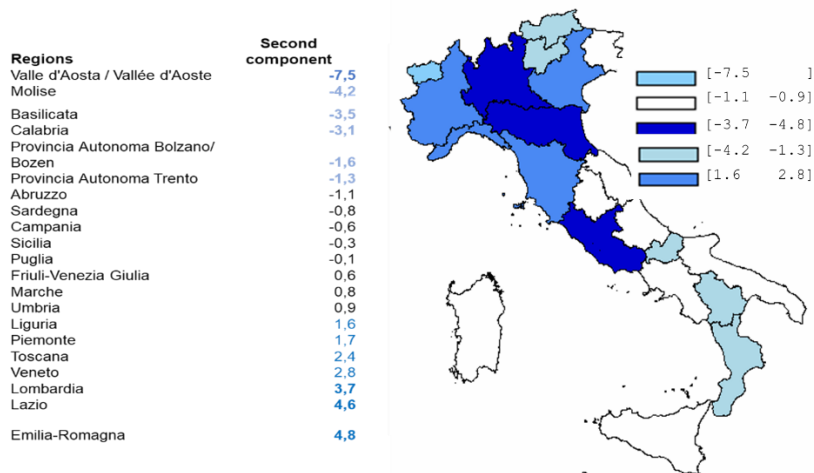
Regions	Second component
Valle d'Aosta / Vallée d'Aoste	-7,5
Molise	-4,2
Basilicata	-3,5
Calabria	-3,1
Provincia Autonoma Bolzano/ Bozen	-1,6
Provincia Autonoma Trento	-1,3
Abruzzo	-1,1
Sardegna	-0,8
Campania	-0,6
Sicilia	-0,3
Puglia	-0,1
Friuli-Venezia Giulia	0,6
Marche	0,8
Umbria	0,9
Liguria	1,6
Piemonte	1,7
Toscana	2,4
Veneto	2,8
Lombardia	3,7
Lazio	4,6
Emilia-Romagna	4,8

[-7.5]
[-1.1 -0.9]
[-3.7 -4.8]
[-4.2 -1.3]
[1.6 2.8]

Source: Our data processing from Istat – Research Project (Innovation and scientific research Laboratories).

In order to summarize the results of multivariate analysis, it is interesting looking at the position of Italian regions in the two component simultaneously (Figure 5).

Figure 5 – *Regional scores on principal components.*

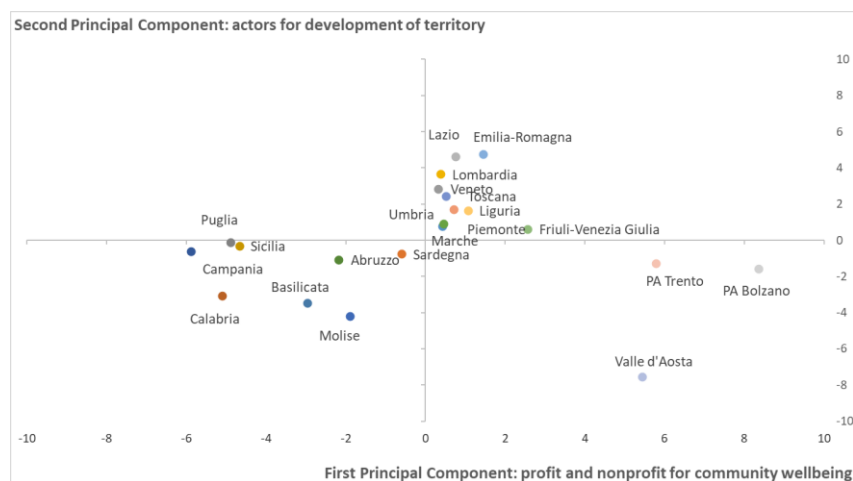*Source: Our data processing from Istat – Research Project (Innovation and scientific research Laboratories)*

In the second quadrant, at the top right (given by the intersection of the positive semi-axes of the first and second components), we find the regions in the Centre-North of Italy, including Lombardia, Emilia-Romagna, Toscana and Veneto, characterised by the forms of social innovation identified by the second component. In these territories we find a capillary infrastructural endowment of enterprises and NPIs (among which those active in the cultural, sports and recreational sector and employing paid staff emerge). Crucial factors of development, such as private sector investments in research & development, high average of regional expenditure for business innovation and presence of enterprises that innovate and collaborate with other organizations are associated to those indicators. The region of Lazio stands out in this group because its socio-economic system, which is mainly characterised by the presence of NPIs dedicated to the various social emergencies and voluntarism committed to assisting vulnerable people.

In the third quadrant of Figure 5, we find the Autonomous Provinces of Bolzano and Trento and Valle d'Aosta, whose socio-economic system is characterised by the high presence of the nonprofit sector oriented to the wellbeing of the community and to the care of commons and of volunteering linked to expressive, cultural and socialisation needs. In these contexts, the propensity of NPIs towards multi-

stakeholder relations also prevails, especially with PA subjects, which is present to a capillary extent (to resident population ratio), offering specific services linked to environmental care, assistance and public charity, and research and development services. As for the business sector, we find the same high incidence of units to the resident population ratio, connected to enterprises that have taken at least one action to reduce the consumption of natural resources and apply the sustainability to the business management.

Finally, in the fourth quadrant, the regions of Southern Italy are characterized by the presence of enterprises oriented to social responsibility, which have undertaken initiatives of community wellbeing, to fight poverty and social hardship, the incidence of which to the total number of enterprises is particularly evident in Calabria, Campania and Basilicata. In these territories, enterprises that have adopted solutions to promote environmental sustainability, such as the acquisition of voluntary environmental product or process certifications, the drafting of sustainability reports, and the designation of an internal contact person, are also widespread. The incidence of this kind of enterprises (out of the rest of enterprises in the region) is also important in Puglia and Sicily. The attention of for-profit sector to the human resources, through the adoption of measures to promote working wellbeing and guarantee equal opportunities within the company and thus favour the professional growth and empowerment of employees, is considerable especially in Calabria and Sardegna. As for the nonprofit sector, the presence of human resources involved in the social assistance and civil protection sector (both volunteers and paid workers) is significant in these territories. The presence of enterprises that have set up forms of collaboration with other actors (particularly relevant in the regions of Calabria, Sardegna, Puglia, Campania and Molise) can also be observed in these territories. Networking also characterises the nonprofit sector, consisting of institutions that involve their beneficiaries in the design and implementation of the various initiatives and nonprofit institutions providing services aimed at the community.

4. Final remarks and future steps

Although the results described come from an exploratory analysis, some interesting issues can be highlighted. The multi-actor aspect of social innovation: we can thus confirm the existence of a virtuous link between factors of social cohesion - fostered by the presence of a high number of nonprofit institutions focusing on vulnerability - and the presence of for-profit sector oriented to community wellbeing and to environmental protection (Venturi and Santuari, 2023). Therefore, it is necessary to study social innovation through the interdependence between economic

and institutional actors. A need to produce new statistics that are able to describe more accurately the social innovation in connection with the quality of life, especially in terms of resilient responses during crisis period, emerged from the analysis carried out. For this purpose, a new section was included in the questionnaire of the Permanent Census of Non-Profit Institutions 2021 in order to collect information about social innovation projects or initiatives carried out by NPI, i.e. the constituent elements of the project, the partnerships set up, as well as the territorial level of the projects. These data will allow to deepen the social innovation analysis by applying new statistics in a perspective of territorial analysis and comparability trough time.

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