TiPSE

The Territorial Dimension of Poverty and Social Exclusion in Europe

Applied Research 2013/1/24

Work Package 2.6

Development and mapping of social exclusion indicators

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The ESPON TiPSE Project:

The TiPSE project has been commissioned by the European Observation Network for Territorial Development and Cohesion (ESPON) programme. It is concerned with the issue of poverty and processes of social exclusion in Europe. The project aims to improve the evidence base for policy which promotes inclusive growth, within the context of the EU2020 strategy.

One of the key challenges in Europe is to address regional or local concentrations of poverty and social exclusion. This remains a national responsibility within the context of EU strategic guidance. In practice it is often regional or local administrations which face the challenge of implementing national policies to ameliorate deprivation and exclusion. At a higher level, the EU defines its role as identifying best practices and promoting mutual learning.

The ESPON TIPSE project aims to support policy, both by enhancing the evidence base and by identifying existing good practice. Poverty and social exclusion are essentially relative concepts, arguably meaningful only within a specified geographical context. This underlines the central importance of observation, measurement, and careful data analysis as an essential preparation for intervention.

A central aim of the project is to generate a regional database, and associated maps, of poverty and social exclusion indicators. The project will thus establish macro and micro-scale patterns of poverty and social exclusion across the ESPON space. Such quantitative analysis of geographical patterns is considered a crucial part of the evidence base for policy.

In addition, in order to better understand the various social and institutional processes which are the context of these patterns, a set of ten case studies are to be carried out. These are more qualitative in approach, in order to convey holistic portraits of different kinds of poverty and social exclusion as experienced in a wide variety of European territorial contexts. An important goal for the project will be to identify policy approaches which can effectively tackle exclusion, and thus strengthen territorial cohesion. The case studies are intended to further this objective by exploring local policy processes and highlighting good practice.

The TiPSE research team comprises 6 partners from 5 EU Member States:

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LP	Nordregio - Nordic Centre for Spatial Development	SE	Petri Kahila
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LIST OF ABBREVIATIONS

CAP – Common Agricultural Policy

ERDF – European Regional Development Fund

ESPON – European Observation Network for Territorial Development and Cohesion

EU – European Union

GDP – Gross Domestic Product

LAU – Local Administrative Unit

LFS – Labour Force Survey

NUTS – Nomenclature of Territorial Units for Statistics

OMC – Open Method of Coordination

TiPSE – The Territorial Dimension of Poverty and Social Exclusion in Europe

UNDP – United Nations Development Programme

WP – Work Package

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The aim of WP2.6 'Development and mapping of social exclusion indicators' of the research project TiPSE (The Territorial Dimension of Poverty and Social Exclusion in Europe) was to establish a link between WP2.1 (Review of concepts of poverty and social exclusion) and WP2.8 (Analysis of conceptual implications of social exclusion maps), with the help of the TiPSE database generated in WP2.3.

Methodologically, the project uses a hypothetico-deductive framework: after conceptualisation of social exclusion in WP2.1, the task of this work package was the operationalization of social exclusion. Thus, the basic issues were

- to find specific indicators throughout the ESPON space which cover domains and dimensions of social exclusion, decided earlier in WP2.1;

- to collect data at the lowest possible regional scale from different official sources (see also WP2.3), integrate and map them (thereby offering a meaningful starting point for macro-regional and cross-European comparisons in WP2.8);

- reflect on the usability of the database in understanding the territorial dimension of social exclusion in Europe.

The study identified four domains and 10 dimensions of social exclusion (see the table below).

Domain identified by WP2.1	Dimension recommended by WP2.6	Number of indicators (excluding census 2011 data)
Earning a living	Income earned by tax payers	2
	Employment	27
Access to basic services	Health	3
	Education	2
	Housing	6
Social environment	Age	3
	Ethnic composition	1
	Immigrants	1
	Household structure	4
Political participation	Citizenship	1

The indicators were chosen after detailed considerations by project partners regarding relevance, policy implications and data availability. Data sources are partly standardised Eurostat datasets, partly official national statistics collected by TiPSE project partners. As for September 2013, non-census Eurostat data and census 2001 data from national sources is part of ESPON TiPSE's integrated database (WP2.3). Census 2011 data collection – both from

Eurostat and national sources – is envisaged for the next phase of the research project, as census 2011 reaches the dissemination phase throughout Europe.

This research conceptualized social exclusion as a relational, process-oriented and multidimensional phenomenon. ESPON TiPSE identified several indicators for each of the dimensions as proxy variables. The reason for not using more complex mathematical-statistical analysis during the interpretation of the dataset is that this is more viable for applied projects with policy relevance.

An important deliverable for WP2.6 was a set of maps which visualised all indicators throughout the ESPON space. Until now, from Eurostat and census 2001 data 50 maps of the ESPON space was prepared. The maps used different categorisations, but mostly followed the equal interval method (if not, the maps ensure a better representation of the distribution curve). Apart from that, to ease partners' duties in WP2.8, separate maps with the same categorisation were prepared for each of the 4 macro-regions in the TiPSE project; these were used in the macro-regional chapters of WP2.8. Maps with census 2011 data will be prepared after the data collection.

After collecting and mapping the data for social exclusion, this work package concluded that Eurostat covers some dimensions of social exclusion at the NUTS 3 spatial scale, but not all. Therefore, census data from national sources was indispensable to capture some dimensions. Non-standard statistical sources were not considered in the project because of comparability issues across European countries.

This methodological paper ended with a discussion on possibilities and limitations of mapping the socially excluded. Macro-level mapping is important in outlining social exclusion, but the social construction of maps through researchers has also to be taken into account. People's place-based and context-dependent perceptions on social exclusion are not part of WP2.6, but are discussed in detail in ESPON TiPSE's case studies.

1 Introduction

This methodological paper on social exclusion indicators is one of the outputs of WP2.6 entitled 'Development and Mapping of SE indicators' (the other being a set of maps on the territorial dimension of various aspects of social exclusion). The project proposal of ESPON TiPSE described the aims of WP2.6 and established links to other work packages. As page 23 of the Application form Part B states, this WP 'aims to develop "mapable" indicators of social exclusion at the NUTS 3 or LAU 1 level'. WP 2.6 established explicit links to the definitions of social exclusion put forward in WP2.1 (see Annex 1 of the TiPSE Interim Report, December 2012). The first part of this methodological paper therefore explains, how 'academic' definitions summarised in WP2.1 might be matched with 'Implications for indicators'; i.e. how issues touched upon in academic literature are to be elaborated on in a meaningful way in cross-European regional mapping of the territorial dimension of social exclusion.

As for the implementation of this mapping exercise, ESPON TiPSE project proposal advanced the simple proxy indicator methodology. In order to validate the usefulness of this approach, this methodological paper also offers a short overview of possible methods when one is to measure or quantify different dimensions of (territorial) social exclusion. These aspects have already been highlighted in WP2.1 'Review of concepts of poverty and social exclusion' (see Annex 1 of the TiPSE Interim Report, December 2012). However, WP2.1 did not aimed at putting emphasis on possibilities of comparisons throughout the ESPON space and the availability of cross-European regional (NUTS 3 level) data. In this sense, this paper distils some considerations from the academic debates and policy practices reported on in WP2.1, and triangulates these with WP2.3 on the TiPSE database (see also Annex 4 of the TiPSE Interim Report, December 2012).

In the chapter 'Measuring social exclusion – a step-by-step approach' we aim at showing the dimensions and some proxy variables of social exclusion at the European scale. This chapter still represents a work in progress, as only census 2001 data were collected so far; official publication of census 2011 data is to be expected for autumn 2013 in many countries and spring 2014 for Eurostat. According to the TiPSE project proposal, mapping has been undertaken primarily on NUTS 3 level, but regarding some indicators only NUTS 2 level data was available. Collection of data and mapping of social exclusion indicators on LAU 1 level (using primarily census data) was dedicated to the case studies of TiPSE (WP2.4) in the course of the project.

This paper ends with the discussion of the results and with some considerations for the EU-level policy-making regarding the mapping of social exclusion.

2 Domains, dimensions and indicators of social exclusion

Social exclusion and its 'territorial dimension' is a fuzzy concept both in the academic literature and in the policy practice. WP2.1 has already documented an extensive body of academic and policy literature on these concepts which is not needed to reiterate here. However, the review of academic practices has clear implications for the tasks to be undertaken in WP2.6, as far as how to operationalize these theoretical concerns in a cross-European regional level mapping exercise on different dimensions of territorial social exclusion.

One of the most important conclusions of WP2.1 for WP2.6 is that definitions of social exclusion, academic and policy practices are highly context-dependent, they reflect situated knowledges of researchers and policy-makers (cf. Haraway, 1988), and are also a result of how statisticians conceive the world (state-thinking in Bourdieu's words – Bourdieu, 2004: 90–91). They offer a partial view from partial closed spaces of the research or policy field of the particular studies and policy actions. Hence, they cannot be easily upscaled to an ESPON-space-wide NUTS 3 level mapping of social exclusion. Nevertheless, the literature brought together in WP2.1 was essential in making decisions in ESPON TiPSE on domains, dimensions and indicators of social exclusion.

Social exclusion is a relational, dynamic and multifaceted phenomenon, according to Silver (1994). Consequently, measuring and mapping (territorial) social exclusion should aim at finding indicators and proxy variables which

a) at least in some examples reflect the relational nature of included and excluded people / groups of people (gender gaps are good examples of this type of understanding);

b) as exclusion is not only a state of 'being in a society' but also a process, apart from stock indicators flow indicators may be used as well (this is one of the reasons for collecting both 2001 and 2011 census data) (cf. also Madanipour et al, 2003);

c) cover several dimensions of social exclusion that are inseparable from each other but interact in complex ways and on different geographical scales (for this aspect, WP2.6 will only deliver inputs, results will be analysed in WP2.7 and WP2.8).

In this section, following some notes on the territorial dimension of social exclusion, *domains, dimensions and indicators* of ESPON TiPSE's understanding of social exclusion will be introduced and discussed. This approach of having a three-level hierarchy is following the seminal study of Levitas et al. (2007) which differentiated between three subject groups and ten dimensions of social exclusion each of which measured by various indicators.

2.1 Some notes on the territorial dimension of social exclusion

ESPON TiPSE project does not focus on social exclusion in general, but the overarching aim is to draw conclusions on the *territorial aspects* of the phenomenon. As WP2.1 noted, most of the EU policy documents are aware that there is some sort of spatiality (or regional inequalities) in the distribution of poverty and social exclusion, but they more or less theorise 'the spatial' as an appearance, i.e. only registering that social phenomena differ over space.

WP2.1 emphasised that many of contemporary approaches address sites and spaces of exclusion, such as exclusive and inclusive spaces. Examples catalogued in Annex 1 of the TiPSE Interim Report vividly show that most of these empirical studies are on the 'micro-level' (research on exclusion within the city, in rural spaces and places etc.), and regional level studies focus largely on which natural, social and economic endowments regions possess of.

Social sciences in the past decades more or less univocally understand ontologies of 'the social' and 'the spatial' in their co-constitution (for an early example see Gregory and Urry, 1985). This approach dismisses the idea of space as being a stage on which social relations unfold, as well as the idea of the abstract space which has a pure distance-decay function (as put forward by neoclassical economics). What this 'new' approach stressed instead is the view that social relations are constructed over space, and that space plays a role in how social relations are constructed (Massey, 1985; Sayer, 1985).

This understanding has some serious implications for the research done on social and spatial exclusion (also in the context of ESPON TiPSE). Firstly, spatiality of social exclusion is not something to be abstracted of in any research. In this sense, ESPON has a crucial role in directing policy-makers' attention towards the idea that social exclusion is inherently spatial (at multiple scales) which must be considered in any policy-making practice.

Secondly, spatiality of social exclusion is not yet another dimension or aspect to be conceptualised. In this sense, maps on different dimensions of social exclusion (and specific indicators derived from these dimensions) show the co-constitution of society and space in a complex way. ESPON TiPSE also tackles this theoretical, methodological and ethical issue by combining mapping (WP2.6) and its interpretation (WP2.8) with case studies (WP2.4).

Thirdly, although the maps produced in WP2.6 may be easily interpreted as showing socially excluded NUTS 3 regions, one has to take into consideration that it is not the region which is excluded, but in the end people or groups of people. As social exclusion is an issue also addressed by EU's regional policy, it is meaningful nonetheless to map social exclusion on NUTS 3 level. For it is important to gather information which regions and in which meaningful ways may be targeted by EU's regional policy to open up more inclusive realities for people living in these areas.

Fourthly, socio-spatial exclusion is a multi-scalar phenomenon. Although current literature on the social constructedness of scale (Herod, 2011) challenges that different social phenomena can be meaningfully linked to pre-constructed 'levels' and territorialisations of space, a consequence for ESPON TiPSE is to elaborate on the multi-scalarity of social exclusion. Hence, different dimensions of social exclusion have different importance at certain geographical scales. This means that a mixed-method approach with a combination of NUTS 3 level mapping and qualitative micro-level case studies (at lower spatial scales) would tell us something about how social exclusion actually takes place. In fact, NUTS 3 level mapping alone can also reveal some aspects of the multi-scalarity of social exclusion. To name a few examples, intra-household exclusion may be indicated by the proportion of inactive population (housewives are also within this group); ethnic/migrant composition of a region may indicate neighbourhood-level exclusion in urban areas; NUTS 3 level data on access to cultural institutions (such as a library) or passenger car density within the population may reveal that inhabitants of small villages within a rural region are facing social exclusion. State-level social policies (such as laws on social transfers) impact undoubtedly NUTS 3 level data as well.

This summary on the territorial dimension of social exclusion attempted to put forward some key theoretical issues on how 'the social' and 'the spatial' interact, the co-constitution of which may interfere with the mapping exercise of WP2.6. Some further notes will be made in the methodological and concluding part of this progress report.

2.2 Domains of social exclusion

This part of the ESPON TiPSE research project from outlining social exclusion as a scientific and policy concept (WP2.1) through obtaining data (WP2.3) through mapping (WP2.6) and interpretation of maps (WP2.8) more-or-less follows a hypothetico-deductive scheme. It might be conceived as a testing exercise starting from hypotheses on social exclusion and testing them in the ESPON space. WP2.1 undertook the conceptualization of social exclusion, the major value added of WP2.6 being the operationalization of the same term.

In the course of the conceptualization of social exclusion, WP2.1 identified different domains of social exclusion. According to Reimer (2004) and Philip and Shucksmith (2003), social exclusion operates in an interrelated way through four overlapping major social systems:

1. Market relations, or private systems;

2. Bureaucratic relations, or state administrative systems;

3. Associative relations, i.e. collective action processes based on shared interests;

4. Communal relations, based on shared identity, among family and friends networks.

This concept of different relations undoubtedly helps in making sense of how social relations unfold (also over space) in order to exclude or include people or groups of people. Nevertheless, for TiPSE they represent an abstract level of social exclusion which has to be measured by some 'clear' indicators which are meaningful and available at NUTS 3 regional level in the ESPON countries. Because of these limitations, WP2.1 has already identified four domains of social exclusion for the mapping exercise:

1. Earning a living;

2. Access to basic services;

3. Social environment;

4. Political participation.

WP2.1, however, did not established the conceptual links between Philip and Shucksmith's social systems and ESPON TiPSE's domains. There is apparently a direct link between the two, but some deviations will be summarised in the following chapter on ESPON TiPSE Indicators.

EU level policies' frameworks changed in the past whether they identify domains of social exclusion. As WP2.1 noted, EU-commissioned research in 1998 identified five domains (factors) that *cause* social exclusion, namely social, economic, institutional, territorial factors and symbolic references (European Commission, 1998). Hence, *a difference should be made between a) domains–dimensions–indicators along which causes of social exclusion may be measured, and b) domains–dimensions– indicators along which policy intervention can tackle social exclusion.* A slightly similar approach is adopted by a Polish case study which differentiates between 'symptoms' of social exclusion and refers also to the monitoring of policy intervention by assessing subjective exclusion consequences (for the latter, survey data was used) (Ministry of Labour and Social Policy and UNDP 2006).

EU level policies following the 1998 report focused more on the 'Earning a living' domain. WP2.1 concluded that the Lisbon Strategy and its re-launch in 2005 shifted the emphasis from economic and social cohesion to growth and jobs; which means that the policy discourse is focused on coping social exclusion by job-creation and increasing (per capita) income. The EU 2020 agenda – also cited in WP2.1 – on the one hand pushes forward a slightly different understanding by emphasising social exclusion throughout the life-cycle, on the other hand the growth-related understanding of social exclusion did not change at all. In this sense, the approach followed by the EU policy-making corresponds to only one or two of the three characteristics of social exclusion referred to earlier (relationality, process-orientation and multidimensional character). Relationality of social exclusion is considered one-sidedly, as relations between the 'excluded' and the 'included' are narrowed down to

economic, growth-related issues (i.e. exclusion can be solved only by the fact that some 'included' people are working and producing added-value in the economy). Process-orientation of social exclusion is covered by focusing EU policy on a process (growth), and not on some static goal. Multi-dimensionality of social exclusion is, however, largely omitted. Generally speaking, the same approach was followed in the aforementioned Polish study which conceptualised social exclusion as reflected in two areas: exclusion from the labour market and exclusion from the market of goods and services (consumption), thereby offering a 'pure economic' perspective of the phenomenon (for the details see Ministry of Labour and Social Policy and UNDP 2006).

There are other examples, however, which take into account different, non-economic areas of social exclusion. UNDP (2011) differentiates between exclusion from economic life, social services, civic and social participation; and the OMC (Open Method of Coordination on Social Protection and Social Inclusion) also follows the same approach with the following domains: income (poverty), material deprivation, health, (low) educational attainment, access to the labour market, access to social care.

Neither approach is necessarily capable of solving the conceptualisation problem of social exclusion in all prevailing socio-spatial contexts or 'welfare regimes' throughout Europe. For example, several studies in both Western and post-socialist countries (with research undertaken before and after the 2008 crisis) analysed the emerging group of working poor, which means that people with jobs are also facing poverty and social exclusion in these regions (Smith, Stenning, Rochovská and Świątek, 2008; Wills and Linneker 2013). Although many (mostly theoretical) criticisms on the 'active inclusion through employment' approach were cited by WP2.1, it is also important to note that it is exactly the territoriality (or socio-spatial embeddedness) of social exclusion because of which cross-European, univocal understandings and 'treatments' may fail in the end. In this sense, the EU's reformed regional policy focusing on place-based approaches would establish a good opportunity to take into account the variegated socio-spatial contexts of exclusion.

2.3 Dimensions of social exclusion

WP2.1 identified four domains of social exclusion for the TiPSE project to be used in the mapping exercise. To operationalize these four domains, several 'dimensions' were chosen as the next step.

Although explicit domains of social exclusion are mostly missing from European policy-related documents (but these can be elaborated on 'inductively' in research overviews such as WP2.1 or WP2.6 of TiPSE), dimensions of poverty and social exclusion are present in many cross-European and national social policy documents.

As WP2.1 offered an extensive overview of them, only the European level will be discussed further in this paper.

Poverty is not a central concept in WP2.6, and poverty is mostly defined one-sidedly, only relating to material-financial assets. In spite of that, some documents move towards a multi-dimensional understanding, as identifying dimensions of poverty is present in some documents of the EU policy. As an example, also referred to in WP2.1, the European Commission's Platform against Poverty and Social Exclusion monitors and targets social exclusion with using three dimensions: the at-risk-of-poverty rate after social transfers, the index of material deprivation (lacking 4+ deprivation items) and the percentage of people living in households with very low work intensity (Bradshaw and Mayhew, 2010).

The Fifth report on economic, social and territorial cohesion (European Commission 2010) identified different aspects of social exclusion. In the evaluation of the impacts of cohesion policy, the document takes into consideration the important role of cohesion policy in reducing unemployment and increasing employability, as well as in tackling disadvantages in education and training. Furthermore, it discusses the contribution ERDF made by funding infrastructural investments throughout Europe. All of these aspects are covered by ESPON TiPSE's proposal on the different dimensions and indicators of social exclusion (see the next chapter as well). In the Fifth cohesion report the multi-dimensional character of exclusion is discussed as to be tackled by identifying vulnerable groups (whose constitution as a separate group reflects different dimensions of their social exclusion), such as 'people with special needs', 'migrants and minorities', 'asylum seekers' or 'Roma people' (pages 227–230.). Targeted may it sound, and not calling into question the easiness of this understanding in the policy practice, an inherent problem in this approach is the stigmatisation of whole groups of people as being excluded (because they are migrants or because they are Roma). Having said that, ESPON TiPSE's forthcoming work packages will partly aim at the verification these approaches by cross-comparisons of several dimensions and indicators (such as the dimension of ethnic composition or that of immigrants with the employment dimension).

Another sectoral policy discussed by WP2.1 is the common agricultural policy (CAP). In the past decades the emphasis of CAP shifted from direct subvention of agriculture to a multi-faceted rural development agenda. In this sense, the EU is targeting with the common agricultural policy-making one territorial appearance of social exclusion, namely that of rural areas and of people living in rural areas. A logical conclusion to be drawn is that industrial structure of regional economies (e.g. agriculture's share in the GDP or in the employment) may also be considered as one possible dimension in the 'Earning a living' domain, to be touched upon by ESPON TiPSE. However, it will not be considered among the indicators in this project. The main reason for that is that the sectoral composition of regional economies is in non-mutual relationship with the vulnerability to social exclusion (e.g. higher percentage

of the manufacturing industry may indicate a region of industrial decline with higher social exclusion or prosperous manufacturing with less social exclusion).

Following that, the four domains of social exclusion have been disaggregated into different dimensions (see Table 1).

Table 1: Domains and dimensions of social exclusion recommended by WP2.1 and WP2.6

Domain identified by WP2.1	Dimension identified by WP2.1 and recommended by WP2.6
Earning a living	Income earned by tax payers
	Employment
Access to basic services	Health
	Education
	Housing
	Transport and communication*
Social environment	Age
	Ethnic composition
	Immigrants
	Crime and safety*
	Municipal income from property taxes*
	Municipal spending on social assistance*
	Household structure**
Political participation	Citizenship
	Voters*
	Civic engagement*

Notes:

* Listed as potential dimension in WP2.1 and omitted during the operationalization in WP2.6.

** New dimension proposed by WP2.6 and not included in WP2.1.

Using this approach, a vast majority of dimensions covered by EU's and member states' social policy are taken into account. Moreover, this combination reflects the multi-dimensionality of social exclusion which is the mainstream understanding in the academic discourses evaluated in WP2.1. The dimensions also address Reimer (2004) and Philip and Schucksmith's (2003) four overlapping social systems, further specified in Table 2.

Table 2: Matching TiPSE's domains and dimensions with Reimer (2004) and Philip and Schucksmith's (2003) systems of social exclusion

Domain identified by WP2.1	Dimension identified by WP2.1 and recommended by WP2.6	Reimer (2004) and Philip and Schucksmith's (2003) social systems			
		Market relations (Private systems)	Bureaucratic relations (State systems)	Associative relations (voluntary systems)	Communal relations (family and friends)
Earning a living	Income earned by tax payers	X			
	Employment	X			
Access to basic services	Health		X		
	Education		X		
	Housing	X	(X)		
	~~Transport and communication~~*	(X)	X		
Social environment	Age			(X)	(X)
	Ethnic composition			(X)	
	Immigrants			(X)	(X)
	~~Crime and safety~~*			(X)	
	~~Municipal income from property taxes~~*		X		
	~~Municipal spending on social assistance~~*		X		
	Household structure**				X
Political participation	Citizenship		(X)	X	
	~~Voters~~*		(X)	X	
	~~Civic engagement~~*			X	

Notes:

* Listed as potential dimension in WP2.1 and omitted during the operationalization in WP2.6.

** New dimension proposed by WP2.6 and not included in WP2.1.

X primary correspondence; (X) secondary correspondence

Reimer (2004) and Philip and Schucksmith's (2003) market relations in the society show strong links with three dimensions of TiPSE's social exclusion: inclusion into labour markets, income earned by individuals/households and housing are mostly defined by market processes and private systems. In addition to that, transport and communication infrastructure is partly governed by private actors. The state system or bureaucratic relations are represented in TiPSE by several variables: health, education, transport and communication infrastructure. The former two are mostly influenced by public policies, whereas transport and communication only partly (see the more detailed description of indicators in the next section). Housing may include some elements of social housing (as part of the municipal or state policy), political participation includes some associations with the role of the state, therefore both of them are considered as secondary constitutive within the dimensions. Associative relations, collective action processes cover realms of social life where relationships based upon shared interests within a group are taken into account. Primarily, these may be linked to various aspects of political participation (citizenship, voting intentions and civic engagement); secondary, these are related to different dimensions of identification and identity-building factors (age, ethnicity, migrant background, criminality). Communal relations (or relations with friends and families leading to social exclusion) is probably the least covered aspect of ESPON TiPSE. This social system may be operationalized, measured and quantified in a cross-European comparative study in an uneasy way. Household structure is a proxy dimension for this aspect and there are only two other dimensions somewhat implying characteristics of family and friends relationships.

2.4 Indicators of social exclusion

Following the identification of domains and dimensions of social exclusion for ESPON TiPSE, key indicators or variables of the different dimensions were chosen. We are aware that there are certain limitations in the selection of the indicators (many of these concerns are discussed in Levitas 1999), and we conceive research results of TiPSE as a starting point for a wider discussion on the relevance of these indicators in understanding and tackling social exclusion. In this phase, theoretical considerations of WP2.1 and WP2.6 outlined earlier in this paper are to be matched with findings of WP2.3. Major criteria of finding suitable indicators were the following:

a) the indicator represents the dimension (and the domain) of social exclusion in a meaningful way;

b) the chosen indicator is most possibly an established or potential key variable in social policies throughout Europe (this aspect is important for the policy-implications of the ESPON project);

c) data is available at least at NUTS 3 level (LAU 1 data availability is important for the case studies, and for national policy making, less for the spatial scale of the EU).

The indicators presented in this methodological paper represent a result of longer discussions of ESPON TiPSE partners. Some dimensions had to be dropped during the implementation phase, because criterion a) or c) was not fulfilled. These shortcomings have already been reported in the Interim Report (such as the virtual absence of data in the domain Political participation).

The review of EU and member states' policies on social exclusion in WP2.1 clearly showed that measurement and monitoring of social exclusion is based on indicators which in the majority of the cases are not grouped in dimensions and domains. Hence, there is a marked difference between the approach of ESPON TiPSE – which follows a deductive way of making sense of the world by starting with theories and distilling them to indicators – versus that of social policy which approaches inductively, i.e. it starts with collecting and interpreting indicators in order to draw conclusions on processes of social exclusion on the more abstract and more general level.

Having said that, it is still possible to establish conceptual links between the four domains of ESPON TiPSE and the indicators of different social policy practices.

WP2.1 emphasised that EU level policy (such as the Laeken indicators) are more focused on the domains 'Earning a living' and 'Access to basic services'. Consequently, they fail to correspond the three criteria of relationality, process-orientation and multi-dimensionality referred to earlier in this paper.

Other studies cited in WP2.1 focus more on the lack of social integration. This approach covers predominantly the Social environment and the Political participation domains of ESPON TiPSE. As for the mapping exercise undertaken in WP2.6 these indicators are hardly useful, as data is collected during extended fieldwork via sampling and survey-methodology, and is not available in a harmonised way for a reliable cross-European comparison. (For example, Eurobarometer's studies offer representative regional level data either on NUTS 1 level – mostly for countries with smaller population – or on NUTS 2 level.)

Yet another group of studies referred to in WP2.1 uses indicators which identify vulnerable social groups (drug addicts, homeless people etc.) by using context-variables in a more direct, one-dimensional way than our approach. As those studies stigmatise 'a priori' by referring to one dimension (a surface appearance) as a sole cause of social exclusion – e.g. homeless people are socially excluded and they are excluded because they are homeless (cf. Mitchell, 2011) –, this approach will not be followed in ESPON TiPSE because of ethical and moral concerns.

As the further step, indicators of social exclusion were gathered to all domains and dimensions. Both Eurostat and national data sources (for census 2001 variables) were consulted in the course of the project by partners. Table 3 contains the list of

variables at this stage of the project which will be extended by census 2011 variables during the next phase. For derived variables, further discussion is to be found in Chapter 4.

Table 3: ESPON TiPSE indicators of social exclusion by dimensions and domains

Domain identified by WP2.1	Dimension identified by WP2.1 and recommended by WP2.6	Indicator recommended by WP2.1	Indicator further specified by WP2.6	Source
Earning a living	Income earned by tax payers	Income earned by tax payers	Net disposable household income	Eurostat
			Ratio of employed persons in elementary occupations	Census
	Employment	Employed	Economic activity rate	LFS (Eurostat)
			Economic activity rate	Census
			Male economic activity rate	LFS (Eurostat)
			Male economic activity rate	Census
			Female economic activity rate	LFS (Eurostat)
			Female economic activity rate	Census
			Activity gender gap	LFS (Eurostat)
			Activity gender gap	Census
			Employment rate	LFS (Eurostat)
			Employment rate	Census
			Male employment rate	Census
			Female employment rate	Census

			Employment gender gap	Census
		Unemployed	Unemployment rate	LFS (Eurostat)
			Unemployment rate	Census
			Male unemployment rate	LFS (Eurostat)
			Male unemployment rate	Census
			Female unemployment rate	LFS (Eurostat)
			Female unemployment rate	Census
			Youth (15–24) unemployment rate	LFS (Eurostat)
			Youth (15–24) unemployment rate	Census
			Unemployment gender gap	LFS (Eurostat)
			Unemployment gender gap	Census
		Inactive	Inactivity rate	Census
			Male inactivity rate	Census
			Female inactivity rate	Census
			Inactivity gender gap	Census
		Long-term unemployed	–	–
		Jobless households	–	–

Access to basic services	Health	Access to primary health	Health personnel per 100,000 inhabitants	Eurostat (NUTS1–2)
			Hospital beds per 100,000 inhabitants	Eurostat (NUTS1–2)
		Healthy life expectancy	Healthy life expectancy at birth	Eurostat (NUTS1–2)
	Education	Pre-school access	–	–
		Primary school access	–	–
		Cultural house / library access	–	–
		Educational attainment: primary or less than primary education (ISCED levels 0–1)	Ratio of population with low qualification	Census
		Educational attainment: tertiary education (ISCED 5–6)	Ratio of population with high qualification	Census
	Housing	Tenure status of households	–	–
		–	Ratio of housing units without water supply system	Census
			Ratio of housing units without inside toilet	Census
			Ratio of housing units without bath or shower	Census

			Ratio of housing units without central heating	Census
			Number of occupants per room	Census
			Useful floor space per occupants	Census
	Transport and communication	Post office	–	–
		Broadband internet	–	–
		Transport	–	–
		Number of passenger cars	–	–
Social environment	Age	–	Total dependency rate	Census
			Child dependency rate	Census
			Old age dependency rate	Census
	Ethnic composition	–	Ratio of Roma population	Census
	Immigrants	–	Ratio of foreign-born population	Census
	Crime and safety	–	–	
	Municipal revenue from property taxes	–	–	
	Municipal spending on social assistance	–	–	–
	Household structure (new dimension of WP2.6)	–	Ratio of lone parent households	Census
			Ratio of lone parents	Census

			Average household size	Census
			Ratio of households with 6 or more persons	Census
Political participation	Citizenship	–	Ratio of population not citizens of the country	Census
	Voters	–	–	–
	Civic engagement	NGOs	–	–
		Members of NGOs	–	–

The two most important datasets used in ESPON TiPSE project are Eurostat and national statistical sources (census variables). Pros and cons using Eurostat data are the following:

- ☺ harmonised data for all member states, therefore data is 'fully' comparable (metadata offers some hints on the geographical, context-dependent cross-comparability);

- ☺ longitudinal comparisons are possible (e.g. between census data of 2001 and 2011);

- ☺ easy-for-use datasets, available free of charge;

- ☹ not all data is available on NUTS 3 level;

- ☹ few of the dimensions of social exclusion are covered in Eurostat datasets.

Several data is only available from censuses in either some or most or all of the countries. Although Eurostat gathered census data for the 2001 round, there are gaps because of various reasons (no census was carried out, such as in Germany; new and non-member states' data is missing, etc.). Regional breakdowns of the 2011 census period are only partially available in September 2011, but will be expected to access in the course of the project (cf. WP2.3). EC Regulation 763/2008 Article 5 (2) states that 'Member States shall provide the Commission (Eurostat) with final, validated and aggregated data and with metadata, as required by this Regulation, within 27 months of the end of the reference year [2011].' This means that data will be available no later than March 2014 for all of the member states. Collecting census 2011 data by project partners for the TiPSE project is anticipated for the next phase of the project.

In this methodological paper, detailed descriptions are offered for each indicator, and all changes between WP2.1 and WP2.6 are explained (some of them have already been touched upon in the Interim Report of TiPSE). Another deliverable of WP2.6 is a set of maps for all indicators.

Further considerations were made during the implementation phase whether to use other data sources from all of ESPON countries' national statistical offices and other official or non-official data producers. This exercise is however not easy, as the TiPSE project and TiPSE's project partners do not possess capabilities of a statistical institution in harmonising different datasets which use different methodologies. A value-added of this project is that project partners have collected some 2001 and 2011 census data for many dimensions of social exclusion from official national sources; these datasets have been integrated and are part of WP2.3 (TiPSE database).

Several studies use survey-based data indicators in identifying causes and consequences of social exclusion. Thereby, they try to tackle shortcomings of above-mentioned understandings, for example that the Laeken indicators do not include any

measurement of social isolation or subjective well-being (cf. Lelkes 2006). As these kinds of statistics are not available for a cross-European comparison in the above-mentioned databases, ESPON TiPSE does not aim to cover these aspects explicitly. However, some conclusions will still be drawn from the case studies (WP2.4) regarding 'subjective' dimensions of social exclusion.
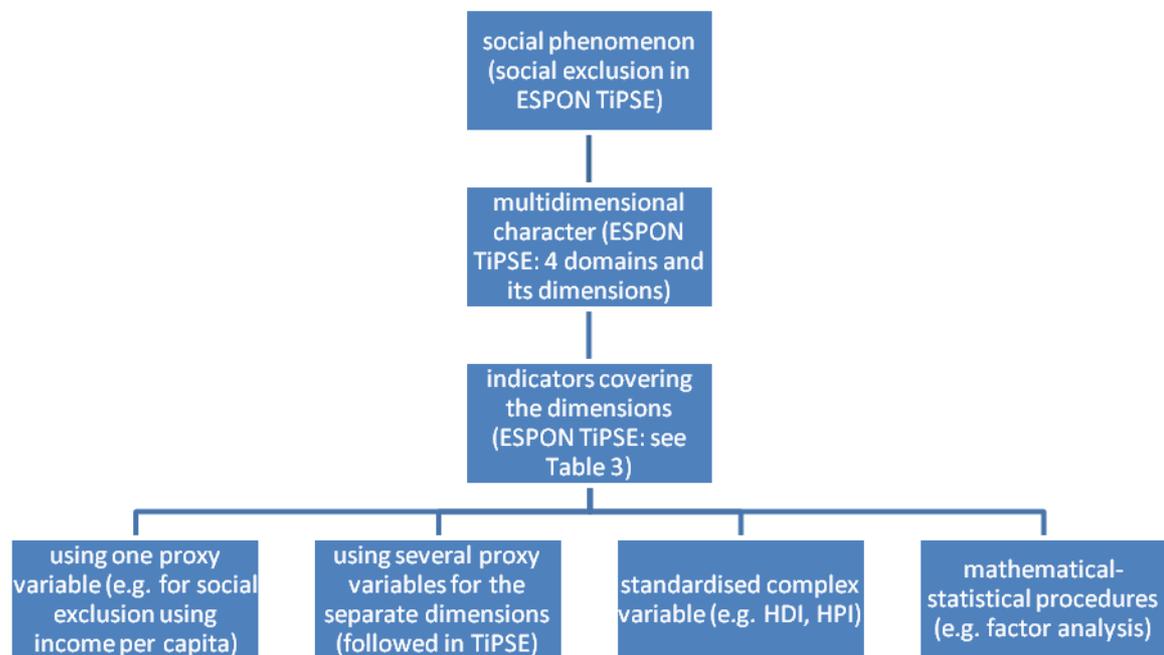
3 Methodology

Within the social sciences' research practice several methods exist how to measure multifaceted social phenomena and how to make sense of the world 'outside'. In this section several options for tackling this issue are discussed. Conclusions will be drawn for firstly how to measure social exclusion in the TiPSE project, and secondly certain implications for geographical or territorial analyses will be examined.

As already outlined in WP2.1, social exclusion is mostly understood in a logocentric way in the literature. This means that social exclusion 'as such' is thought of to be existing in an ordered world which can be fully accessed by scientific method. This is practised in TiPSE by extensive research and quantification (WP2.3 and WP2.6), a more qualitative interpretation of the extensive research phase (WP2.8) and by intensive research (WP2.4's case studies) (cf. Sayer, 1992). In ESPON TiPSE, data analysis is having less an exploratory character in the sense that understanding of social exclusion as a concept is constructed by interpreting datasets. Rather, TiPSE uses a deductive way of thinking by constructing domains and dimensions of social exclusion, before the data collection and mapping exercise starts (with some fine-tuning during the data collection process). WP2.1 also referred to social exclusion as a multidimensional phenomenon (or process) the dimensions of which are intersecting, i.e. there are certain overlaps and/or causal relations between them. The dimensions should be measured by several indicators in the course of any project dealing with multifaceted phenomena.

In the quantitative social sciences literature there exist several methods for measuring complex phenomena. The most prevailing methodologies are summarised in Figure 1.

Figure 1: Measuring complex phenomena: an outline of possible methodologies

a) The easiest solution to capture a multidimensional phenomenon is to use one proxy variable. The theoretical underpinning is that this sole indicator represents the whole complexity exactly because the dimensions are interlinked in a causative way. WP2.1 already noted some examples from the literature which belongs to this group. For instance, if social exclusion and poverty is used interchangeably in research practice, and poverty is conceptualised and operationalised as people with an income below 60% of the equivalised disposable national median (after social transfers), then per capita income is regarded as a simple proxy variable of social exclusion. Another example is from EU's regional policy where regional per capita GDP and GNI are the sole variables for measuring the concept 'development'. It is unquestionable that this approach is easy to understand, easy to implement in policy discourse, there are no high-excess data collecting and data processing costs in governing the society. On the other hand, this approach oversimplifies social realities in a vast majority of cases, thereby TiPSE needs a more fine-grained way of interpretation.

b) A more complex way of operationalizing research on multifaceted issues is to use more than one proxy variable. Here, the deductive way of thinking starts with conceptualising a phenomenon by constructing several dimensions. These may be hypothesised as being interlinked, or being separate and

showing separable aspects. Dimensions might be measured by one single indicator per dimension, or several indicators might be considered for each of the dimensions. For example, UNDP (2011) operationalised 3 dimensions of social exclusion with 8 indicators each (24 altogether), then for all cases (here: individuals and not regions) it was assessed in how many indicators one is socially excluded (certain thresholds were used for all the indicators). The approach of identifying different dimensions and several indicators for each of them is followed by ESPON TiPSE, as it was described in the preceding parts of this paper in detail. The considerations for this choice are that it is more complex than a simple variable method (thereby offering a more nuanced understanding of social exclusion), and that it is still simple enough to implement in social policies at the EU, national and regional scales. This approach leaves a considerable room for manoeuvre in the further course of the project regarding capturing interlinkages across dimensions and indicators: other work packages of ESPON TiPSE will elaborate on this aspect as well.

c) The third option is to use a standardised complex variable for measuring complex social phenomena. For example, in the English Indices of Deprivation 38 separate indicators grouped into seven domains are used; income, employment, health, education, crime, access to services and living environment, inter alia. Each domain has a distinct weight in the complex index calculated using the 38 variables (http://www.communities.gov.uk/documents/statistics/pdf/1871208.pdf). This understanding is also followed by the UN and other national and supra-national policy actors when using the Human Development Index (HDI) or the Human Poverty Index (HPI) in conceptualising and operationalising development or poverty (for a European example on NUTS 2 level see Bubbico and Dijkstra, 2011). This method may be understood as a follow-up to b) – identifying dimensions, each of which measured by one or two variables, then these variables forming a simple composite variable after various mathematical transformations. The normalization of variables is done by using descriptive statistics (maximum and minimum) in the case of HDI and HPI, and the weighting of the disparate aspects is possible in combining the dimensions into the index. Regarding the (in)separability of the dimensions, this method is quite Janus-faced. On the one hand it tells apart different dimensions (and represents them as having no interlinkages between them; if there were any, then it would be possible to look only at one of the correlating dimensions), on the other hand with the practice of calculating the average of the dimensions for the index it underlines that the dimensions are interchangeable (i.e. human development may be increased by a better educational attainment in the same way as with extending life expectancy).

d) The most complicated possibility is to use complex mathematical-statistical methodology, such as multi-dimensional regression, factor or principal component analysis. When using multi-dimensional regression (such as in PovMap) one aims to capture an unknown phenomenon by a combination of different variables for which there is a data coverage. The aim of the factor and principal component analysis is to reduce the number of variables by combining them into dimensions (factors) which are statistically independent from each other. Whereas in some cases factor analysis offers a meaningful way to capture multifaceted social phenomena (such as social exclusion), it is still a complicated method which is not really capable of channelling into social policy. Another problem is the comparability of the method: in different spatio-temporal contexts the results (factors) are different, thereby hardly comparable. Moreover, the method is based on a certain black-boxing: it uses a huge dataset as an input and results in factors as an output, but what happens during the calculation process is blinded out by the method itself. As one of the consequences, it is quite problematic when we try to understand mechanisms among different aspects of social exclusion. Another limitation for territorial analyses is that the method itself is not capable of saying anything about the spatiality and spatial structure of the phenomenon in question (as during the method correlations are calculated between variables and not between regions), and the results of the factor analysis is only valid at the geographical scale of the data (for a further discussion see Czirfusz, 2010). Another possibility of using sophisticated mathematical transformations for getting social exclusion indices is presented in a Polish case study (Ministry of Labour and Social Policy and UNDP 2006, Annex 2).

In ESPON TiPSE, WP2.6 puts forward a methodology of b) – to use different proxy variables for different dimensions of social exclusion throughout Europe.

The mapping process (as part of WP2.6) also needs some methodological explanation. One of the issues the mapping process faced was which categorisation of the data is meaningful to use. One option might have been to use quantiles in the legend (quantiles are defined using the whole dataset, not the countries' data separately; this would have meant that the maps are more comparable). However, because of the limitations of this approach, namely that this understanding implies that there are X percent of each society which are socially excluded or are vulnerable to social exclusion, we used different categorisations for each indicator. In the TiPSE mapping exercise the distribution curve of the indicator was considered, and Team HAS's background knowledge on the dataset was mobilised to produce the best possible visualisation. If it was meaningful, the equal interval method was used. If it resulted in uneven number of cases in each category, or the dataset seemed to be clustered in larger groups, the categories were modified accordingly. For each map 6 categories (plus 'no data') were used.
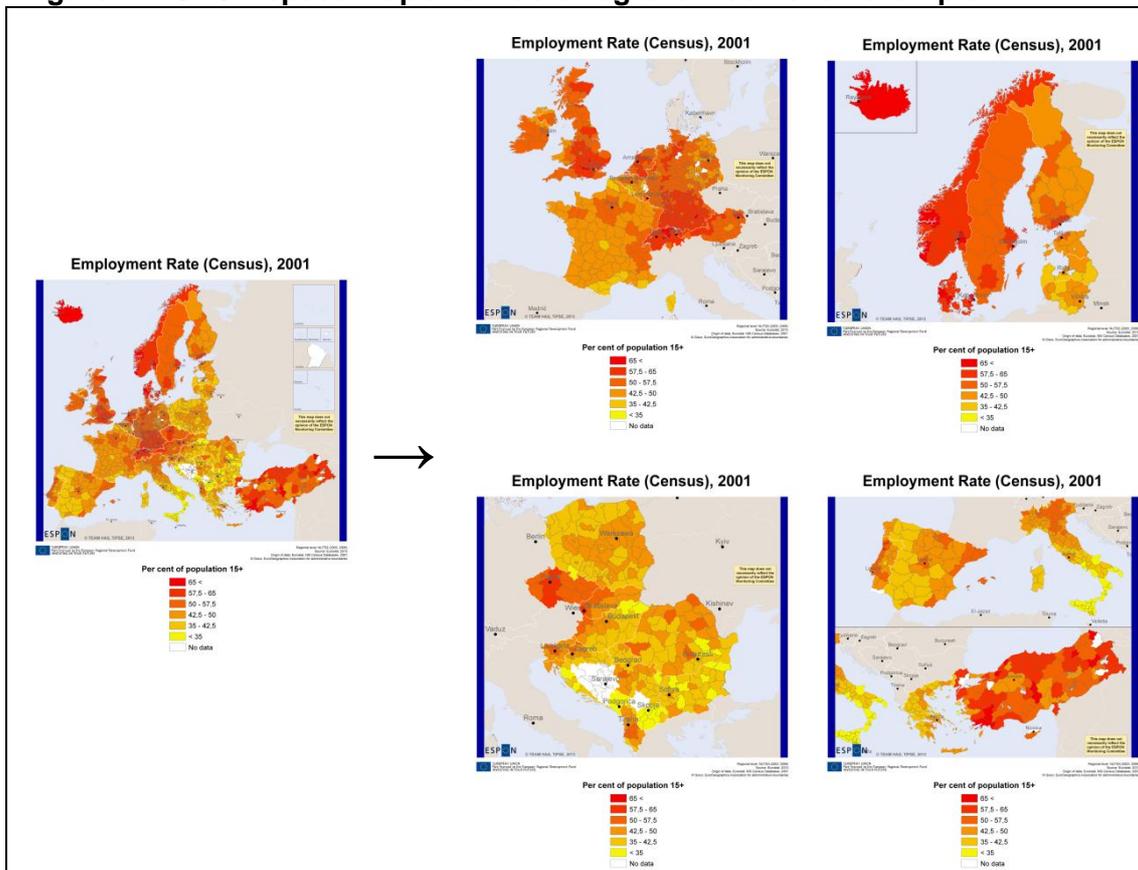
To ensure integration of the mapkit into macro-regional descriptions of WP2.8, 4 macro-zooms with the same categorisation were prepared for each of the 50 maps produced until now (Table 4, Figure 2). These macro-zooms were used in the exploratory phase in WP2.8, i.e. to study the inner territorial differentiation of social exclusion in each macro-region; and also as illustrations for WP2.8's working paper.

Table 4: Macro-regions of the TiPSE project

Macro-region	Countries
Atlantic and Central European region	Austria, Belgium, France, Germany, Ireland, Liechtenstein, Luxemburg, Switzerland The Netherlands, United Kingdom
Nordic and Baltic region	Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, Sweden
Mediterranean region	Cyprus, Greece, Italy, Malta, Portugal, Spain, Turkey
East Central Europe and the Balkans region	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia

Figure 2: ESPON space map and macro-regional zooms: an example

4 Measuring social exclusion – description of the indicators

The following part introduces all of the domains, dimensions and indicators used by ESPON TiPSE (see also Table 3). This paper also discuss limitations the project faced during the implication, and solutions for overcoming methodology and data availability issues.

4.1 Earning a living

4.1.1 Income earned by tax payers

Short description: Statistical data on income of persons and households is one of the key dimensions and indicators of poverty and social exclusion. Thereby, including it into social exclusion dimensions was unquestionable. Two indicators were used to cover this dimension.

Data availability: Eurostat data on disposable and primary income of households is available, but only for NUTS 2 and NUTS 1 regions. Net disposable household

income from this source was collected and mapped as the first variable. The other indicator has been the Ratio of employed persons in elementary occupations, available in census datasets.

Census 2001 coverage: Ratio of employed persons in elementary occupations (ISCO major group 9) was largely available for the ESPON space, only 213 missing cases are among the 1517 regional entities (major gaps: Belgium, Norway, Turkey, Albania, Bosnia and Herzegovina).

Census 2011 coverage: Data to be collected later on employed persons in elementary occupations.

Comments: WP2.3 also noted that data on disposable income is only available in Eurostat datasets on the NUTS 2 level. The ESPON 2013 project which covers this aspect, ReRisk, includes disposable income per capita for NUTS 2 regions (year 2004–2005). Therefore, national statistical sources should have been consulted and a second proxy variable (ratio of employed persons in elementary occupations) was chosen.

4.1.2 Employment

Short description: Employment is one of the two dimensions in the Earning a living domain. Its several aspects imply vulnerability to social exclusion in a very clear way.

Data availability: Cross-comparable data with LFS and Census methodology is available from the Eurostat website and from official national sources. WP2.3 has already reviewed the availability of employment and unemployment data in detail.

The sub-topic Employment was measured by 13 variables: the Economic activity rate (whole population, male, female; both LFS and census datasets), the calculated Activity gender gap, Employment rate (whole population – both LFS and census datasets, male and female statistics from censuses), and the calculated Employment gender gap. As employment data is provided only on NUTS 2 level by Eurostat, census data was also used to ensure NUTS 3 coverage.

The second sub-topic has been Unemployment with 10 indicators. Unemployment rate datasets are more modest than that of activity rate, WP2.3 concluded that year 2005 is the most suitable for mapping. Statistics on long-term unemployment rate were available for NUTS 2 regions only, and official census data was not available either. Thereby, a mixture of LFS and census data in the indicator list was used to overcome limitations. Unemployment rate for the whole population, for male and female population separately, and the youth (15–24 years) unemployment rate was collected from both census and LFS (Eurostat) sources. Unemployment gender gap was calculated.

The third sub-topic, Inactivity, was operationalized by 4 variables: inactivity rate, male and female inactivity rate, and the calculated inactivity gender gap; all from national census data.

Census 2001 coverage: Eurostat published data on its website on some employment-related data. National statistical sources were consulted by all partners which ensured a better coverage. Still, for about one-third of the regions no data was available for most of the indicators – the major limitation being that datasets from Germany are missing. Exceptions are the Economic activity rate, Inactivity rate, Employment rate, Unemployment rate (only for the whole population, statistics according to gender are missing) where data from Germany was accessible.

Census 2011 coverage: Regulation 763/2008 lists current activity status (employment, unemployment, inactivity) as not available on NUTS 3 and LAU 2 levels for the 2011 census round (Regulation Annex, 1.1.1.). They will not be provided in the Hypercubes of Census 2011 (Commission Regulations 1201/2009, 519/2010). National sources will be consulted later on in the project.

Comments: Year-by-year data is available from the Eurostat website, although some aspects are not covered on NUTS 3 level. LFS methodology ensures an easy comparability of data throughout Europe. Lack of data was mitigated by using different national official sources if it was possible. An emerging topic and indicator in Europe in the post-2008 period is the high youth unemployment rate which was also included into the TiPSE dataset. Census 2011 data unavailability from Eurostat is a limitation for the TiPSE project. Two indicators, long-term unemployed and jobless households (both proposed by WP2.1) were omitted from the database because data coverage was scarce.

4.2 Access to basic services

4.2.1 Health

Short description: Health related issues represent a major aspect why certain groups of people become vulnerable to social exclusion. They will therefore also being covered in ESPON TiPSE.

Data availability: The indicator list identified two aspects of health: access to primary health services, and healthy life expectancy. The former is covered in Eurostat databases, but only at NUTS 2 level (hlth_rs_prsrg). Here, health personnel and hospital beds per 100,000 inhabitants is a common indicator used by social exclusion and quality of life studies – these two are also covered in the TiPSE project. The other aspect, healthy life expectancy is a variable of the Human Development Index. This index is calculated on the regional level in the EU by Bubbico and Dijkstra (2011), however, only at NUTS 2 level (demo_r_mlifexp and tgs00101 datasets). Nevertheless, in this project we used this variable to capture the complex phenomenon of health.

Census 2001 coverage: Not applicable.

Census 2011 coverage: Not applicable.

Comments: As statistics are not available on NUTS 3 level, only NUTS 2 level data was used. National official sources might cover this aspect more broadly, but comparability problems would have arisen across different countries' data procession.

4.2.2 Education

Short description: Educational attainment is one of the key dimensions of social exclusion. People with lower educational attainment are more vulnerable to social exclusion than people with tertiary education. Additionally, a spatially variegated gender gap of this dimension throughout ESPON space is expected.

Data availability: Data on educational attainment is available from the decennial censuses with almost full coverage of people at NUTS 3 level. Other statistics on education are only published in the Eurostat website on NUTS 2 level. ESPON 2013 project EDORA lists educational statistics in its indicator list; this data source covers not all countries on NUTS 3 level, and only for the years 2005–2006. As education is mostly a public service, several official data is collected year-by-year.

As a consequence, WP2.1 listed different indicators to cover this dimension. After further discussion with project partners three variables (pre-school access, primary school access, cultural house / library access) must have been omitted because non-standard statistical sources were not available or not comparable for a majority of ESPON space. Others were collected from Eurostat census datasets and other national official statistical resources.

Census 2001 coverage: Census data for 2001 is available on the Eurostat website. However, there are limitations of this dataset regarding its coverage. For most of the countries data on population by educational attainment is provided for ISCED levels 0 and 1 (combined), so there was no opportunity to discern primary and pre-primary education (apart from Austria, where there is data only for ISCED 1). ISCED 5 and 6 (tertiary education) is also covered in combination. A serious limitation of the dataset is that for several countries demographic data on age groups is not available for calculating proportions of the population with each educational attainment; thus census data collection also had to tackle this lack of data. Changes in the NUTS system also affect the coverage in several countries (such as Poland). As a result, valid statistical information covers about two-third of the regions (apart from smaller gaps Bosnia-Herzegovina and Germany is fully missing, such as one variable for Finland and one for Turkey).

Census 2011 coverage: Regulation 763/2008 lists data on educational attainment as not available on NUTS 3 and LAU 2 levels for the 2011 census round (Regulation Annex, 1.1.1.). They will not be provided in the Hypercubes of Census 2011

(Commission Regulations 1201/2009, 519/2010). National statistical sources must be consulted therefore in the following phase of the project.

Comments: Maps revealed significant differences in the spatiality of social exclusion. There are inequalities within countries (such as in Italy or in the UK in ISCED 0–1 attainment), but in some aspects countries may seem more homogeneous (Spain in ISCED 0–1 or Finland in ISCED 5–6 attainment). There are considerable intra-national inequalities in Central and Eastern European countries as well. Following that, this indicator was very useful in operationalizing social exclusion on the regional level in ESPON TiPSE.

4.2.3 Housing

Short description: Lack of accessible and affordable housing is one of the key aspects why people and households are vulnerable to social exclusion. Certain aspects of housing are therefore essential to be included in ESPON TiPSE. There are certain limitations, however, of the comparability of data on the 'more qualitative' aspects of housing, as ESPON states have different housing markets (more or less private forms, prevalence of renting apartments etc.) and different social policies on housing.

Data availability: In most of the ESPON countries, extensive and comparable housing statistics are provided primarily by the decennial censuses. These will be discussed in the next paragraphs.

Other data sources come from infrastructure datasets, such as population connected to public water supply and to wastewater treatment. This data, however, is only published for NUTS 2 regions by Eurostat (env_n2_pws and env_n2_pww datasets), so that national statistical sources from censuses were consulted for these variables.

Tenure status of households proposed by WP2.1 was omitted because of less meaningful cross-European comparison.

Census 2001 coverage: Census 2011 coverage will offer very detailed statistics on housing. Census 2001 data availability is more limited than census 2011 will be, but because of the process-oriented understanding of social exclusion some indicators were collected. These include: Ratio of housing units without water supply system, Ratio of housing units without inside toilet, Ratio of housing units without bath or shower, Ratio of housing units without central heating, Number of occupants per room, Useful floor space per occupants. As a result of the data collection about two-thirds of the regions represent missing cases. Most of the data is missing from the Atlantic and Central European region, from the Nordic and Baltic region the Baltics are better endowed in terms of coverage, for East Central Europe and the Balkans data collection was quite successful, and some data also exist for the Mediterranean region. Macro-zooms are useful for WP2.8 despite the lack of data.

Census 2011 coverage: Regulation 763/2008 lists household status as available on NUTS 3 level for the 2011 census round (Regulation Annex, 1.1.1.). The following categories will be provided by Eurostat (Hypercubes 48, 49, 52), out of which groups should be identified in TiPSE as being vulnerable to social exclusion (provisionally vulnerable groups are underlined):

- persons living in a private household:

  - persons in a family nucleus (persons in a married couple, partners in a registered partnership, partners in a consensual union, lone parents, sons/daughters);

  - persons not in a family nucleus (living alone, not living alone);

  - persons living in a private household, but category not stated;

- persons not living in a private household:

  - persons in an institutional household;

  - primary homeless persons;

  - persons not living in a private household, but category not stated.

Further breakdowns are available in the type of family nucleus dataset (with or without children, children under or over 25 years; size of family nucleus – 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or more persons; a vulnerability threshold should be elaborated on for TiPSE).

A prospective measurement of social exclusion in housing is the percentage of people living in vulnerable household status types and vulnerable family status types. Combinations with other dimensions are available (e.g. with age: living alone, over 65 years) for identifying potentially socially excluded groups.

Tenure status of the households will not be available for NUTS 3 levels according to the EU regulations (Regulations 763/2008 and 1201/2009, 519/2010). Here, an important aspect is how to delimit tenure statuses which are indicating social exclusion throughout Europe: different countries have different housing markets, national and municipal social policies offer different solutions for example in social housing. Because of this comparability problem dropping this indicator was proposed. Data on unoccupied dwellings (which is also one aspect of the tenure status) is offered for NUTS 3 and LAU 2 levels, but these statistics are possibly not indicating social exclusion (as there are no people living in unoccupied dwellings who may be facing social exclusion).

Housing overcrowdedness may be measured by the density standard – floor space in square meters per occupant (or alternatively number of rooms per occupant – national statistical offices shall provide data on either this or that), thresholds will be discussed later on in TiPSE. Hypercube 54 will offer data on NUTS 3 level, but not on LAU 2 (Regulations 763/2008, 1201/2009, 519/2010).

Other data on the quality of housing (e.g. water supply system, toilet facilities, bathing facilities, type of heating) will only be provided on NUTS 1 and NUTS 2 levels according to the Regulation 763/2008. Data collection from national sources is advisable for the next phase of the project.

Comments: Census 2011 data is indispensable for TiPSE in covering this aspect of social exclusion. Alternative data sources are not available, or are not as detailed as census data. Census 2001 data collection was only partially successful.

4.2.4 Transport and communication

Short description: Social groups and households are facing social exclusion also because they are inaccessible by means of transportation and communication. TiPSE is going to take into consideration this aspect of social exclusion as well. The four provisional indicators covered various 'material' aspects: whether people have access to a post office, to broadband internet, are accessible by means of transportation, and are able to access other places by a passenger car.

Data availability: Eurostat data is hardly available for covering this dimension. The only aspects for which Eurostat provides statistics on NUTS 2 level is the number of passenger cars (tran_r_vehst) and households with broadband internet access (isoc_r_broad_h). NUTS 3 level data is available on freight transport which is not relevant for measuring social exclusion.

Some former ESPON studies addressed accessibility topics in the past. ESPON 2006 database offers the variable 'time to nearest motorway access, by car' at NUTS 3 level. This measurement is on the one hand outdated (year 2001, since which significant infrastructural investments have been undertaken throughout Europe), and is not useful because of different geographical endowments (a motorway is not needed in every part of Europe to access places in order to conduct a 'socially included' life). Europe-wide accessibility data is irrelevant for TiPSE (as we imply that it does not count for socially excluded people that their region is easily accessible from all over Europe; or this accessibility has already been mirrored in other indicators and dimensions – such as employment opportunities).

Following this, TiPSE partners decided to leave out all transport-related indicators proposed by WP2.1 from this part of the research.

Census 2001 coverage: Not applicable.

Census 2011 coverage: Not applicable.

Comments: None.

4.3 Social environment

4.3.1 Age

Short description: For capturing the different age-composition of NUTS 3 regions with three proxy variables, the total dependency ratio (number of people aged 0–14 and 65+ combined, divided by the number of people between 15 and 64 years), child dependency ratio (number of people aged less than 15 divided by people aged 15–64) and old age dependency ratio (number of people aged 65 or more divided by people aged 15–64) were calculated.

Data availability: NUTS 3 level Eurostat data is available throughout Europe for 2011 (for UK and France: 2010). WP2.3 already noted the excellent coverage of this dataset. Mapping and discussing changes over time (in line with the process-based understanding of social exclusion) on a longer-term (10 years) was made possible by collecting 2001 census data.

Census 2001 coverage: There are only few gaps in the dataset collected by TiPSE partners. For the child dependency rate, data on French and Bosnian regions is missing; for the other two variables only 20 regions lack the valid data (of which 10 regions are from Bosnia and Herzegovina)

Census 2011 coverage: Regulation 763/2008 lists age as available on NUTS 3 and LAU 2 levels for the 2011 census round (Regulation Annex, 1.1.1.). For NUTS 3, data in one-year cohorts will be available, LAU 2 level data will be provided by 5-years cohorts (Regulation 1201/2009) (Hypercube 55 for NUTS 3 data, Hypercube 56 for LAU 2 data). Mapping the three chosen variables for 2011 is envisaged for the next phase of TiPSE.

Comments: There is high variance within the dataset throughout the ESPON space. The three variables are quite different, and reveal different aspects of age-related social exclusion. The proxy variables are easily understandable and might be good departure points for social policies. Limitations of cross-country comparison are minimal or non-existent.

4.3.2 Ethnic composition

Short description and comments: as this data is almost exclusively found in census statistics, and it was not an obligatory question in the 2011 census round, this aspect is measured by only one variable: ratio of Roma population. The cause of this limited coverage is that belonging to the ethnic minority is not a cause of social exclusion in each and every country (see for example the multi-ethnic character of Switzerland). In addition, ethnicity is a socially constructed category, and is very context-dependent. Individuals have more diverse identities than to reduce their social exclusion to the sole fact that they belong to ethnic minorities. Following that, official census data (if available) is not very reliable and does not tell too much about social realities within different places, because it is not able to capture complex

identities of people. Moreover, several articles stress that Western European (or UN) definitions and understandings of ethnicity do not work throughout Europe (for an Eastern European historical perspective on nationalisms, ethnicity and identity see Todorova, 2005). Ratio of the Roma population, however, is a serious social issue – mostly in East Central Europe and the Balkans – so that census data were collected.

Census 2001 coverage: For most of the East Central European and Balkan countries relevant data could be collected and interpreted in WP2.8. There is scarce coverage in other macro-regions.

Census 2011 coverage: TiPSE aims at collecting data for 2011 in the next phase of the project.

4.3.3 Immigrants

Short description: Immigrants are representing one social group which is vulnerable to social exclusion in European countries. Although the issue is not affecting each ESPON country and region evenly, measuring immigrants' share in the regions may inform TiPSE on one aspect of social exclusion.

Data availability: Census data is the most extensive source to be used for capturing this indicator. The chosen indicator is the ratio of foreign-born population.

Census 2001 coverage: Eurostat data on immigrants was not available on its website for the 2001 census round, national sources were consulted. There are about 1150 missing cases from the 1500 NUTS 3 regions, thus the coverage is rather scarce.

Census 2011 coverage: Regulation 763/2008 lists country/place of birth, as available on NUTS 3 and LAU 2 levels for the 2011 census round (Regulation Annex, 1.1.1.). NUTS 3 level data on place of birth outside the reporting country can be extracted from Hypercube 46 (Commission Regulation 1201/2009).

Comments: Census 2011 data is indispensable for TiPSE in covering this aspect of social exclusion.

4.3.4 Crime and safety

Short description: 'Revealed criminal cases per 1000 persons' was anticipated for use as the most important indicator of crime and safety. The implication was that in poorer or more excluded societies/places criminal cases (at least in some crime categories) may be more prevailing than in 'wealthy' places.

Further research on the usability of this indicator in ESPON TiPSE raised serious concerns both theoretically and methodologically. Critical social studies underlined in the past years how crime statistics are culturally produced, how through crime statistics 'socially excluded' Others are produced for the police practice (cf. Belina,

2009), and how popular criminological theories (such as broken windows and situational crime prevention) use simplistic understandings of social and spatial exclusion (cf. Herbert and Brown, 2006). Other scholars still argue for a consideration of interrelations between crime and poverty, as the 'debate on crime needs to widen to remember all victims who are unjustly robbed of their possessions, and even of their lives, both here and abroad through the violation of political or moral law' (Dorling 2006, p. 1993).

As a further methodological problem for ESPON TiPSE, Eurostat metadata reminds us that crime statistics are not comparable across different countries because of five reasons: 'different legal and criminal justice systems, rates at which crimes are reported to the police and recorded by them, differences in the point at which crime is measured (for example, report to the police, identification of suspect, etc.), differences in the rules by which multiple offences are counted, differences in the list of offences that are included in the overall crime figures' (http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/crim_esms.htm). Eurostat metadata lists two variables which may be used comparatively: homicide rates and prison population rates. Homicide data probably does not capture meaningfully any dimension of social exclusion in ESPON TiPSE. Incarceration, however, may be an important entry point for understanding complex processes of social exclusion (by state policies): a case study by Peck and Theodore (2008) in Chicago vividly shows how the penal state is connected to the new economic and ethno-racial order which causes social exclusion of significant groups of people.

Following that, crime statistics may only be used very carefully by all research projects on social exclusion and by applied research resulting in social policy interventions as ESPON TiPSE.

Data availability: Data may be available from non-standard official sources on the regional level.

Census 2001 coverage: Not applicable.

Census 2011 coverage: Not applicable.

Comments: Although this indicator was foreseen for use by TiPSE WP2.1, this aspect of vulnerability for social exclusion was left out after discussion with TiPSE partners. Cross-European comparisons are not meaningful.

4.3.5 Municipal revenue from property taxes

Short description: property taxes at the municipal/regional level might be one aspect how local governments are socially and spatially excluded from the national economy and governance. In each of the countries where tax systems or revenues of the government sector are somewhat decentralised it is a good measurement of the territorial dimension of social exclusion on the national scale.

Data availability: Eurostat does not cover this aspect on regional level.

Census 2001 coverage: Not applicable.

Census 2011 coverage: Not applicable.

Comments: Although statistics on government revenues and expenditures are comparable throughout Europe because of the standardised ESA95 system of national accounts (http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/gov_a_tax_ag_esms.htm), the tax systems in European countries are so different that a meaningful comparison along this aspect is not possible. Different economic advantages and endowments of local governments to capture this dimension of social exclusion are more or less reflected in the 'Earning a living' domain of social exclusion in ESPON TiPSE (by combining income- and employment-related statistics). Therefore, project partners opted for dropping this variable from the list.

4.3.6 Social transfers

Short description: Statistical data on social assistance is one of the key dimensions and indicators of poverty and social exclusion. Following that, including it into social exclusion dimensions was thought to be important.

Data availability: Eurostat data on social assistance is available within the nama_r_ehh2s dataset, but only for NUTS 2 regions (cf. WP2.3 on TiPSE indicators). Regional economic accounts (reg_ecobrch) cover some data on NUTS 3 level, but not social transfer-related statistics. Most recent statistics are from year 2009. The same applies for measuring households' income (see above).

Census 2001 coverage: Not applicable.

Census 2011 coverage: Not applicable.

Comments: The original indicator (proposed by WP2.1 of TiPSE) for covering this aspect of social exclusion was 'municipal spending on social assistance'. This measurement is most possibly not comparable throughout Europe, as there are different divisions of labour between municipalities and the nation state in different countries in the sense how they provide social assistance to persons and households. As WP2.3 observed, disposable income and social transfers may be substitutes for each other, so we left out this variable from our catalogue of indicators.

4.3.7 Household structure

Short description: WP2.1 envisaged many indicators for capturing the domain social environment, most of which could not be operationalized during the data

collection phase. As a substitute dimension for this domain the household structure was proposed.

Data availability: Household structure is also an indicator which could indicate vulnerability to social exclusion. Data is available from the censuses and is reliable throughout Europe. The four indicators represent four sub-groups more vulnerable to social exclusion: Ratio of lone parent households, Ratio of lone parents, Average household size and Ratio of households with 6 or more persons are useful as proxy variables.

Census 2001 coverage: Missing cases for the variables are between 470 and 630 regions, most of which are the 429 German regions at NUTS 3 level, and Turkey with 81 (data from Turkey is solely available for the average household size).

Census 2011 coverage: Census 2011 data will be collected later on in the project to interpret changes over time.

4.4 Political participation

4.4.1 Citizenship

Short description: Foreign citizens are representing one social group which may be vulnerable to social exclusion in some European countries. As the issue is not affecting each ESPON countries and regions evenly, measuring foreign citizens' share in the regions may inform TiPSE on one important aspect of social exclusion.

Data availability: Census data is the most extensive source to be used for capturing this indicator.

Census 2001 coverage: Eurostat data on citizenship is available for the 2001 census round, for other countries national data sources were consulted. There are only 151 missing cases from the ESPON space which means a good coverage.

Census 2011 coverage: Regulation 763/2008 lists country of citizenship as made available on NUTS 3 and LAU 2 levels for the 2011 census round (Regulation Annex, 1.1.1.). NUTS 3 level data on country of citizenship outside the reporting country can be extracted from Hypercube 46 (Commission Regulation 1201/2009).

Comments: Census 2011 data is indispensable for TiPSE in covering this aspect of social exclusion across time. Alternative data sources are not available, or are not as detailed as census data.

4.4.2 Voters

Short description: Voting is one of the most important political rights in today's European democracies. In ESPON TiPSE it is implied that lack of political participation makes people more vulnerable to social exclusion. To measure political

participation several indicators may be used, one of which is the voter turnout in national or EU-wide elections.

Data availability: Voter turnout in EU and parliamentary elections is listed among Eurostat's indicators on the national level (tsdgo310). Metadata, however, reminds users that in Belgium, Luxembourg and Greece, voting is compulsory, and it is a civic obligation (with no penalty) in Italy. As a result, statistics are on the one hand not comparable across European countries (another limitation of the comparability is that the population with the right to vote may be slightly different in each of the countries). On the other hand, one may interpret compulsory voting as the nation state's effort to minimise this dimension of social exclusion through obligatory political participation.

Census 2001 coverage: Not applicable.

Census 2011 coverage: Not applicable.

Comments: As data is not comparable across Europe, the dimension of Voters was dropped.

4.4.3 Civic engagement

Short description: Civic engagement is one of the means by which people and groups of people become more included in the society. Following that, it would have been an important aspect in conceptualising social exclusion for our project.

Data availability: Cross-comparable Eurostat data is not available on this aspect of political participation. Official non-standard sources (e.g. on number of NGOs per 1000 inhabitants) could not be collated meaningfully for the ESPON space.

Census 2001 coverage: Not applicable.

Census 2011 coverage: Not applicable.

Comments: The implied indicators by WP2.1 have been the number of NGOs per 1000 inhabitants, as well as members of NGOs per 1000 inhabitants. Cross-European comparability of data (including issues like definitions of NGOs, relevance of NGOs in the legal structure of the countries, available statistical sources on the issue etc.) could not have been ensured.

5 Discussion and preliminary policy implications

5.1 Indicators list – possibilities, limitations and comparability issues

Mapping different dimensions of social exclusion is one of the main outputs of the ESPON TiPSE project. This methodological paper showed how the project used a deductive framework to delimit different domains, dimensions and indicators for the project, and how the mapping exercise was undertaken.

Multi-dimensionality of social exclusion will be elaborated on in other work packages using the deliverables from this work package (such as the set of maps). At this stage of TiPSE, the main conclusions on possibilities, limitations and comparability issues of the indicators are as follows.

- Eurostat covers some dimensions of social exclusion with comparable data. For some variables, there are certain limitations regarding which countries are covered and which not. Overcoming these data availability problems is possible in the majority of the cases (see also WP2.3).

- Census data is indispensable for some of the social exclusion dimensions, as they are collected only in the decennial censuses (or other data sources are not as reliable as censuses). Standard realms in this group are demographic data (age, employment, country of birth), educational attainment, employment, housing and country of citizenship.

  - Several variables will be available from the 2011 census round on NUTS 3 level (such as immigration, housing, country of citizenship). The serious limitation is that comparable Eurostat data will only be provided starting March 2014. National statistical offices are not expected to publish these 'hypercubes' earlier either. TiPSE partners will collect these data in the further course of the project.

  - Several variables will not be available from the 2011 census round on NUTS 3 level from Eurostat (such as the education and employment dimensions). This results in a problem for ESPON TiPSE, as data might only be collected from national statistical sources which have different policies of publishing territorial data on NUTS 3 level. Availability is not expected until early 2014 in this group either.

  - After the submission of the Interim Report, TiPSE partners decided to collect census data from 2001. This exercise was useful, because for many aspects cross-European (or at least cross-macro-regional) comparisons were made possible. Collecting 2001 data is also indispensable for interpreting changes over time (between the two censuses), underlining the process-based understanding of social exclusion.

- For some 'census' dimensions, non-census Eurostat data is available, as in the employment dimension. For employment, standardised data using LFS methodology is available for a longitudinal comparison as well.

- 'Non-standard' official or non-official statistical sources on the national level were not considered for use by ESPON TiPSE. The most important concerns here were the availability of data and the geographical cross-comparability (not only methodologically, but also whether these variables capture social exclusion in a same way throughout Europe – cf. the Voting dimension

discussed before). Case studies of the TiPSE project reflect on these omitted dimensions in some aspects.

• Some indicators were listed in WP2.1, but further considerations in WP2.6 opted for leaving them out, mostly because theoretical-ethical issues (dimension of crime and safety) or because of limited geographical cross-comparability of data (such as municipal revenue from property taxes). Some indicators have been reformulated or refined in WP2.6 (such as household structure).

5.2 Mapping the socially excluded – possibilities and limitations

Mapping practices, and particularly mapping social phenomena has been in the focus of social scientific practice for several decades, in order to understand, explain, monitor and change social realities. In this last section of the progress report, some theoretical and methodological concerns will be raised about mapping social exclusion.

In the past 2-3 decades, a research strand has been developed in critical social theory which tries to understand research practices of mapping, and explores issues under the label 'critical cartography'. This group of research mixes post-positivist theories (such as social constructivism or post-structuralism), uses new practices (such as reflexivity – cf. Bourdieu 2004) and new methodologies stemming from them.

These new approaches understand maps as both a social product (also reflecting the world-views of its producer), as well as an active agent in the processes of communication and governmentality (Ball and Petsimeris, 2010; Michel, 2010). Mapping poverty and social exclusion has had the intellectual baggage of constructing poverty and interpreting poverty in a certain, univocal and powerful way for the past more than a century (cf. Ball and Petsimeris, 2010). The Chicago School's heritage, for example, established 'spaces of exclusion' through its research methods and practices culminating in mapping social classes. Delimiting, researching and living in spaces and places have therefore become an integral step in the chain of events that results in scientific facts (cf. Gieryn, 2006). In addition, early works at intersections of poverty, wealth distribution and its spatiality have suggested that poverty is somehow inherited (Dorling and Pritchard, 2010), thereby conceptualising space as an important actor of social processes.

Critical studies on mapping social phenomena have referred to the power of maps in producing and distributing uncontested meanings, thereby excluding, marginalising and stigmatising different groups of people (cf. Belina, 2009). These researches have referred to false abstractions (Belina, 2009) in the mapping practice, and have denied the objective and neutral practices of visualisation using maps (Michel, 2010).

In the critical cartography literature, a distinction can be made between two strands. One of them is an approach which tries to understand (using mostly a framework of discourse analysis) how maps are produced, which power relations and geographical imaginations are coded in the map, how the interrelations of signifier and signified are constantly reproduced by researchers and in the everyday practice (see for example Mose and Strüver, 2009). The other not only tries to understand mapping practices, but also aims at offering alternatives to them in order to change the world for better. These latter approaches have been more or less informed by the Marxist critique (Belina, 2009), or have applied a diverse theoretical entry point, such as Gibson-Graham's action research (cf. Gibson-Graham, 2008) which merges feminist, post-structuralist and Marxian understandings.

This latter, 'more active' approach has also some implications for ESPON TiPSE, as some articles in the past decades also called for alternative representations of the spatiality of poverty, social exclusion, vulnerability of exclusion, or related social phenomena. Fahmy et al. (2008) on the one hand opted for a visualisation of poverty which uses tracts with the same number of population, which is a more 'democratic' representation of people offering everyone the same space on the map (see also the Online Census Atlas: Durham et al., 2006). St. Martin (2009) on the other hand, argues for countermapping strategies in order to reclaim resources for the dispossessed people, to constitute new imaginaries of places and to remap spaces and resources as common(s). St. Martin calls for mixed-method researches with combining 'traditional' mapping practices (of mostly official statistical data) with qualitative – primarily ethnographic – studies, so that alternative realities may be constructed together with marginalised groups of people. Within this research practices, mapping is not only a way of understanding spatial patterns of the reality, but also offering the entry point for proposing new or alternative realities. This approach is in line with other action researches which aim at dislocating different ontologies, such as 'the poverty', 'the social exclusion' or 'the economy'. J-K. Gibson-Graham (2008), for example, used action research in order to offer new and more inclusive understandings of 'the economy', and thereby change the lives of people who were partaking in these action researches for the better.

The practice of St. Martin and Gibson-Graham may also have some conclusions to be drawn for research practices in ESPON TiPSE. For example, it might be elaborated on, how research outputs of WPs 2.3 and 2.6 on the social exclusion database and the mapping exercise are to be used as an entry point for discussions on policy relevance. Using this approach, differences of the macro-level mapping and people's place-based perceptions on social exclusion might be compared. This research practice can result in a more nuanced understanding of social exclusion and more inclusive social policies put forward by the TiPSE research project.

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