Approaches towards social deprivation: Reviewing measurement methods

Agnieszka Świgost[CDFMR]

Institute of Urban Development, Cieszyńska 2, 31-410 Krakow, Poland; phone: +48 126 342 953, e-mail: a.swigost@irm.krakow.pl

Abstract. The phenomenon of social deprivation is highly diversified; hence there are a number of methods for measuring it. This article is a summary of a literature review concerning the methodology for calculating deprivation indices showing differences in research on deprivation. Reports, carried out on behalf of public administrations as well as academic articles from ten socially and economically developed countries, although diversified, were analysed. Partial indicators from the indices were classified into eight thematic groups representing different deprivation dimensions. A total of 166 partial indicators were analysed. Moreover, other methods of researching social crisis phenomena were discussed i.e. the indices employed by the UN and the USA. In the analysed countries, indicators of education and living conditions were considered most frequently while those relating to health and crime the least. The most common partial indicators are average levels of income, unemployment, overcrowding and education.

Contents:

1. Introduction

The accumulation and concentration of crises such as poverty, unemployment, poor quality of education, crime and a low level of social commitment, combined with negative phenomena in the economic, environmental, spatial, functional, and infrastructural spheres lead to intensification of deprivation.

Kitchen (2001) defines social deprivation as a set of social, economic and housing problems which concern the residents of a particular area as compare to the rest of the population. A slightly different aspect is emphasized by Smętkowski (2015: 5) who defines it as *the lack of access to opportunities and resources which are seen as common in a particular society.* Moreover, Townsend (1987) distinguishes both material and social deprivation. Material deprivation is understood as the access to goods, services, and conditions (environmental, housing) which enables living with dignity. Social deprivation refers to an individual's ability to fully participate in community life (Townsend, 1987).

The mechanism of negative causality is composed of a number of overlapping elements, which are of segregationist character, and known as multiple deprivations (Garrington, 2005; Pacione, 2005). The process called "the cycle of deprivation" is activated by economic transformations – the cessation of production or the collapse of – dominant industries (e.g. mining). The phenomenon of deprivation is twofold: through the fall and physical degradation of a specific location (destruction of buildings), and by deepening social degradation among residents – long-term unemployment, change of social status, decreased activity, social assistance dependency, pathology (vandalism, crime). In addition, increased migration, – the outflow of wealthy families and the influx of the poor – deepen the negative image of an area. Simultaneously, the market value of properties decreases which results in stigmatisation of the neighbourhood, hence further impoverishment of residents (Herbst, 2008).

Social deprivation studies are focused mainly on sub-fields of human geography such as social inequality (e.g. Coates et al., 1977; Smith, 1987; Gregory et al., 2001) and urban policy (e.g. Higgins et al., 1983; Cochrane, 2006). Additionally researchers (e.g. Gatrell, 2001; Curtis, 2004) concentrate on the issue of deprivation in relation to the sub-fields of the health and medical geography. It is noteworthy that the deprivation phenomenon is analysed by sociologists and researchers from other fields as well.

This article presents the results of a review of social deprivation indices operating in ten countries based on an overview of the source literature. The aim of this review is to compare the indicators in terms of deprivation research stage and an analysis and definition of the partial indices used to create synthetic indicators. Furthermore, the analysis was indirectly used to indicate differences in the perception of deprivation in different countries. The synthesis and comparison of deprivation indicators may provide an inspiration for researchers who prepare them. Furthermore, the comparison of various indices can be valuable for practitioners – representatives of public administration who are concerned with social policy, crisis phenomena and statistical data collection. The basis for any action leading to a resolution of the issues of crisis phenomena should be a reliable diagnosis based on objective indices. An appropriate diagnosis is essential for well-oriented policies.

Indices from the following countries were taken into account: the United Kingdom, Canada, New Zealand, the United States, Germany, Norway, Spain, Portugal, the Czech Republic and Poland. The analysis was based on purposive sampling. Following the *Human Development Report* (2015), developed countries were selected for analysis. Developing countries such as India or South American countries were excluded from the study due to their incomparable level of social deprivation. The countries analysed are varied in terms of socio-economic advancement, political and economic history for

example, as well as geographical conditions. Moreover, their models of social policy were a significant factor distinguishing them. The review includes countries with different social policy regimes, from those with social democratic regimes (like Norway), post-socialist regimes (Poland, the Czech Republic), to liberal-minded countries like the USA (Esping-Andersen, 1999; Ebbinghaus, 2012). Another criterion for selection was the number of indicators used for the construction of a synthetic indicator for research goals. Deprivation indices are used as a monitoring tool by public administrations or contribute to academic research. Other synthetic indicators used for the measurement of crisis phenomena in the social sphere were also analysed. These are indicators commonly recognized internationally i.e. the indices employed by the UN (Human Development Index, Human Poverty Index, and Multidimensional Poverty Index) and the USA (Hardship Index).

2.   Deprivation indices overview

The overview includes ten indices of deprivation designed for various countries. Their key features are shown in Table 1. One of the most famous is the *Index of Multiple Deprivation* designed in the 1990s by academics from the University of Oxford on behalf of the Department for Communities and Local Government in the UK. The index is distinctive due to its complex methodology (35––40 variables), regularity – every 3-4 years, use of a common methodology for England, Wales, Northern Ireland and Scotland and research conducted at so-called *neighbourhood* level (English Indices of Deprivation,

2015). This overview includes the latest version of the index (2015). Another indicator, developed at the request of a government, is the *NZDep Index* whose fifth edition was published in 2014 in New Zealand (Atkinson et al., 2014). The *District Deprivation Index* was developed in 2015 by the Centre for European Regional and Local Studies – *EUROREG* and was used as one of the few studies conducted in Poland concerning issues of deprivation made at a local level (poviat) (Smętkowski et al., 2015).

Academics from the Spanish School of Public Health also conducted an analysis at the local level where the authors made an attempt to develop a deprivation index for cities (Sánchez-Cantalejo et al., 2008). For the Czech Republic, an indicator proposed by researchers at the University of Brno was used (Sirovátka et al., 2006). Extensive research was made in Oslo in order to determine the relationship between social deprivation, mortality and air pollution. The particular topics were examined separately and the new index was designed in order to study deprivation for the purpose of the work (Næss et al., 2007). A German index developed to examine social deprivation among immigrants was taken as an example model (Haisken-DeNew et al., 2007). Kitchen and Langlois (2001) attempted developing an index for Canada based on data from Montreal. As far as Portugal is concerned, an index designed for a comparative study of five EU countries (France, Italy, Spain, the UK and Portugal) was employed. The example of Portugal was used because of the substantial difference in variables from this country (Guillaume et al., 2016). The American *Area Deprivation Index* is an example developed by researchers at the National Institute of Health (Knighton et al., 2016).

Table 1. Characteristics of indicators included in the analysis

	Index name	Index purpose	Range of analysis	Scale of analysis
Czech Republic	*Deprivation Index*	scientific research	national	national
Spain	*Deprivation Index*	scientific research	national	local
Canada	*General Deprivation Index*	scientific research	local – Montreal	inside local
Germany	*Deprivation Index*	scientific research	national	national
Norway	*Deprivation Index*	scientific research	local	local – Oslo
New Zealand	*NZDep Index of Deprivation*	administration	national	inside local (primary sampling units)
Poland	*District Deprivation Index*	scientific research	national	local – poviat

Portugal	*European Deprivation Index*	scientific research	national	national
The USA	*Area Deprivation Index*	scientific research	regional – Stan Utah	inside local
The UK	*Index of Multiple Deprivation*	administration	national	inside local (neighbourhoods)

Source: Own studies

All the indices included in this overview are synthetic and were calculated on the basis of an aggregation of variables. The number of partial indicators varies from 37 for the UK to 4 in the case of Norway (Table 2). In most countries, the number of partial indicators is no lower than 14 but no higher than 22. The indices include both stimulants and destimulants.

3. Dimensions of social deprivation

A common feature of all the indices analysed is the use of a multi-dimensional approach to measure deprivation. Each of the examined synthetic indicators consists of a series of partial indices covering different thematic fields. The analysis included eight spheres depicting human needs (Smętkowski et al., 2015). The overview shows that the most commonly used synthetic deprivation indicators are those related to education, living conditions, access to goods and services, the labour market and income (Table 2). These kinds of indicator could be a direct reflection of the deprivation definitions of Townsend (1987) and Kitchen (2010). Variables concentrating on health and crime are much less common as far as index design is concerned. It should be noted that the type and number of partial indicators varied in each thematic group. Moreover, in the countries surveyed, the presentation was different relating to the purpose and scope of the theoretical research, local context and availability of data.

Table 2. Deprivation dimensions of the synthetic indicators analysed*

	Income	Labour market	Living conditions	Education	Access to goods and services	Groups at risk of exclusion	Crime rate	Health	Other	Number of partial indicators
Czech Republic	**X** (1)		**X** (3)		**X** (7)	**X** (3)		**X** (1)	**X** (1)	16
Spain		**X** (1)		**X** (1)	**X** (1)	**X** (2)			**X** (1)	6
Canada	**X** (1)	**X** (6)	**X** (4)	**X** (1)		**X** (3)			**X** (5)	20
Germany	**X** (1)	**X** (1)	**X** (3)	**X** (1)	**X** (10)			**X** (4)	**X** (2)	22
Norway	**X** (1)		**X** (1)	**X** (1)	**X** (1)					4
New Zealand	**X** (1)	**X** (2)	**X** (1)	**X** (1)	**X** (3)	**X** (2)				10
Poland	**X** (5)	**X** (4)	**X** (4)	**X** (3)	**X** (4)					20
Portugal		**X** (4)	**X** (5)	**X** (1)	**X** (2)	**X** (3)	**X** (1)		**X** (1)	17
The USA	**X** (2)	**X** (2)	**X** (5)	**X** (2)		**X** (3)				14
The UK	**X** (6)	**X** (5)	**X** (6)	**X** (7)	**X** (4)			**X** (4)	**X** (4)	**X** (1)	37
Total:	**18**	**25**	**32**	**18**	**32**	**16**	**5**	**9**	**11**	**166**

* Comment: The number of partial indices in each dimension was given in brackets

Source: Own studies based on Smętkowski M., Gorzelak G., Płoszaj A., Rok J., 2015, Powiaty zagrożone deprywacją: stan, trendy i prognoza (Poviats threatened of deprivation: the status, trends and forecasts – in Polish), Warszawa

3.1. Income

The level of income distribution within a society is a factor which directly affects the level of deprivation. A very low income may be a result of problems in the labour market and can affect the ability to meet various material needs. In addition, a low income can lead to social exclusion and an accumulation of problems (Pacione, 2005). Data from this particular thematic group was used to create a deprivation index in eight out of the ten countries analysed. The most common partial indicator was the one concerning average income in relation to the rest of a country's population. This type of data was used for example in the Czech Republic, Canada, Germany and Norway. A different approach can be seen in the indicators constructed in Poland and the UK. The UK researchers mainly use data on groups at risk of exclusion who are divided into internal thematic groups. Therefore, among the partial indicators included in the *Index of Multiple Deprivation*, concerning income, are the percentage of families benefiting from social assistance, children needing maintenance, percentage of immigrants seeking asylum and other related social support (English Indices of Deprivation, 2015). In order to design the Polish *District Deprivation Index* the following partial indicators were taken into account: revenues consisting of personal income tax per capita of municipalities and cities with poviat rights, and wage levels in business entities employing more than nine employees (Smętkowski et al., 2015).

3.2. Labour market

Employment, as well as the availability and diversity of the labour market, is another important factor to satisfy basic needs (Atkinson, 1998). The majority of partial indicators concern the level of unemployment (variously defined). The method used in New Zealand is particularly interesting due to the fact that not only the level of unemployment but also the level of employees' qualifications is examined (Atkinson et al., 2014). Portugal and the United States also deepened their analysis of the labour market. In the case of Portugal, in order to measure the level of deprivation in the employment and

labour market, the percentage of those working physically is taken into account (Guillaume et al., 2016) whereas in the USA the percentage employed in occupations which require higher qualifications (white-collar), are included in the calculations (Knighton et al., 2016).

3.3. Living conditions

Poor housing conditions and low quality of life are closely related to financial scarcity. In the Polish statistics (GUS – Central Statistical Office of Poland), buildings of low technical condition or lacking adequate domestic installations are perceived as substandard. Overcrowding is also considered as an indicator of bad housing (Methodological instruction to the National Census of Population and Housing, 2002). Indicators concerning living conditions are the most numerous (32 partial indicators) and an internally diverse group of factors are analysed. In eight out of the ten examined countries (the Czech Republic, Canada, Norway, New Zealand, Poland, Portugal, the USA and the UK) overcrowding was used as an indicator of living conditions. In addition, variables such as the condition of housing, its value and natural environmental surroundings were taken into consideration. Indicators of housing standards included bathroom equipment, central heating and running water. An interesting example comes from Germany where subjective opinions of inhabitants regarding the size of an apartment or presence of a balcony and garden are seen as important indicators (Haisken-De-New et al., 2007).

3.4. Education

The low level of education and its impact on social deprivation can be treated in two ways. On the one hand, a low level of education and lack of skills contributes to deprivation in economic terms due to a high probability of unemployment or low wages. On the other hand, a low level of education itself may be seen as deprivation in socio-cultural terms (Smętkowski et al., 2015). The level of education is usually measured by number of years in education or number of leaving grades at school. The per-

centage of those with higher education and averages of exam results are commonly used as indicators. Countries such as the UK and Poland are distinctive in terms of education deprivation indices. An interesting indicator used in the UK is frequency of truancy (English Indices of Deprivation, 2015), whereas in Poland the number using public libraries per thousand was used while calculating the *District Deprivation Index* (Smętkowski et al., 2015).

3.5. Access to goods and services

A key element in all definitions of social exclusion is the availability of goods and services (National Strategy for Social Inclusion, 2004). This access can be understood in several ways. In the UK, it is availability of time and space – the *Index of Multiple Deprivation* includes indicators such as average distance to the nearest post office, elementary school, grocery store and clinics (English Indices of Deprivation, 2015). In other countries, it is a physical ability to have certain goods, directly related to household finance. The most frequent indicator applies to car ownership but the question of housing ownership is also common. Access to goods and services can be also discussed in socio-cultural terms (Batorski, Płoszaj, 2012) including digital exclusion. In the Czech Republic and Germany, access to cultural services (cinema, theatre, museum, concert etc.) as well as sporting and religious events was regarded as an important factor (Sirovátka et al., 2006; Haisken-DeNew et al., 2007).

3.6. Groups at risk of exclusion

Studies of social marginalization distinguish groups particularly vulnerable to social exclusion. People who are unemployed, especially low-skilled workers or at a certain age (the young or those older than 50) along with disabled, single-parent or multi-child families, families struggling with alcohol problems, drug addiction or violence, as well as refugees are all in an exceptionally difficult situation (Guidance on the implementation of support for the socially excluded and disadvantaged under the Human Capital Operational Programme, 2010). In the analysed

countries, groups at risk of exclusion are defined twofold – either representatives of ethnic or national minorities or families relatively exposed to social deprivation. Variables such as single parents (Canada, New Zealand, Portugal, the USA) or retirees living alone (Czech Republic, Portugal) are among indicators concerning a family.

3.7. Crime rate and health

Crime rate and health are two dimensions of deprivation which are frequently not taken into account in the construction of indices. Poor health can serve as an indirect indicator of the standard of living (Townsend, 1979). Partial indicators on health were taken into account in the Czech Republic, Germany and the United Kingdom. In the case of the Czech Republic overall health status was analysed (Sirovátka et al., 2006) while in Germany the number of hospital and clinic visits throughout a year, a period of incapacity to work and general physical disability were taken into account (Haisken-DeNew et al., 2007). In the UK, the following indicators were included: the mortality rate for pre-term infants, the number of admissions to the emergency room, occurrence of depression and anxiety disorders and the number of suicides (English Indices of Deprivation, 2015).

Intensification of conflicts with the law, especially at the local level, can attest to the accumulation of a variety of social problems (Pacione, 2005). Crime rate, understood as a dimension of deprivation, is included only in the British and Portuguese indices. *Index of Multiple Deprivation* includes variables such as the number of reported violent crimes, burglaries, thefts and petty crimes. All the data are calculated per 1000 events (English Indices of Deprivation, 2015). In Portugal, numbers of crimes and acts of vandalism were used (Guillaume et al., 2016).

3.8. Other partial indicators

In order to create synthetic indicators other variables, which are not of deprivation but can be used to better understand this phenomenon, are used. The indices are frequently designed based on var-

ious kinds of demographic data for example the number of people of pre- and post-production age or number of women and marriages in the general population. This type of auxiliary indicator has been used in Canada, Spain, Germany and Portugal.

4. Other methods of crisis phenomena measurement in the social sphere

Apart from indices measuring deprivation, there are also various indices used to measure other crisis phenomena in the social sphere. Four common indices are listed below.

The *Human Development Index* is a commonly used indicator of the quality of life, developed in 1990 by the economists Mahbuba ul Haqa and Am-

artya Sen (Glatzer, 2006). Since 1993, the Development Agenda of the United Nations has used it as a base for its annual international reports. The index is constructed from four partial indicators (Table 3) concerning income, health and education. The index has had a number of modifications and since 2010 has been composed of various partial indicators, for example the average duration of education among people aged 25 and older, the expected duration of education for children starting education, life expectancy and gross domestic product per capita in purchasing power parity of a currency (Antczak, 2012). In addition to changes in the partial indicators, HDI was extended in the form of the *Human Poverty Index* used by the UN in 1997–2010. HPI was slightly more complex consisting of changeable partial indicators depending on the development level of the country analysed.

Table 3. Selected indices measuring crisis phenomena in the social sphere*

	Income	Labour market	Living conditions	Education	Access to goods and services	Groups at risk of exclusion	Crime rate	Health	Other	Number of partial indicators
Human Development Index	X (1)			X (2)				X (1)		4
Human Poverty Index		X (1)		X (1)		X (1)		X (1)		4
Multidimensional Poverty Index			X (6)	X (2)				X (2)		10
Hardship Index	X (1)	X (1)	X (1)	X (1)		X(1)			X (1)	6

* Comment: The number of partial indices in each dimension was given in brackets
Source: Own studies based on Smętkowski M., Gorzelak G., Płoszaj A., Rok J., 2015, Powiaty zagrożone deprywacją: stan, trendy i prognoza (Poviats threatened of deprivation: the status, trends and forecasts – in Polish), Warszawa.

Hence, for developed countries four indicators were used: long-term unemployment (over 12 months), percentage of illiterates, proportion living below the poverty line and the probability of death before 60. For developing countries different indicators were used: the probability of death before 40, percentage of illiterates, proportion without sustainable access to water and the percentage

of underweight children (Human Development Report, 1997). From the start of its operation this index was heavily criticized due to the method of data aggregation (arithmetic average) (Krishnaji, 1997). In 2010, the HPI was replaced by the *Multidimensional Poverty Index*. The MPI was developed in collaboration with the Oxford Poverty and Human Development Initiative and consists of ten partial

indicators of three thematic areas (Table 3) i.e. living conditions, education and health. The index includes partial indicators such as access to electricity, presence of floors in houses, school attendance and infant mortality (Multidimensional Poverty Index, 2010).

An index which is not functioning in the framework of the United Nations, which is however very popular especially in the USA, is the *Hardship Index* (Short, 2003) developed in the 1970s by Nathan and Adams (1989). Since then, a comparative analysis of more than eighty major US cities is prepared every ten years by the Rockefeller Institute (Montiel et al., 2004). Moreover, this index is used to develop strategies for crisis management and social policies. The '*Health Atlas for the City of Los Angeles*', developed by the Department of City Planning in Los Angeles, can be an example of Hardship Index use (Health Atlas for the City of Los Angeles, 2013). The index consists of six partial indicators (Table 3): the level of income per capita, the share of unemployed in the total population, the percentage of homes with more than one person per room, the proportion aged over 25 with only primary education or lower, the proportion living below the poverty line and the proportion at pre and post-production age in the total population (Montiel et al., 2004).

5.   Summary and conclusions

The leading country conducting research on social deprivation is the United Kingdom where regular, nationwide studies called the *Index of Multiple Deprivation* are conducted. The analysis includes a number of partial indicators based on seven dimensions of deprivation. Moreover, in the UK, several studies on deprivation and social inequality in spatial terms have been carried out (Gregory et al., 2001; Noble et al., 2006; DeVerteuil, 2009; Rae, 2012). Deprivation problems are frequently connected with issues of revitalization, social exclusion and economic crisis (Garrington, 2005; Tallon, 2010).

Multiple deprivation is also a subject of research in the United States and Canada (Herbert et al., 1979; Tietze et al., 1998; Pacione 2005). Apart from the spatial context, a dynamic approach is also taken. Kitchen (2001) describes a model of changes

in social deprivation in Montreal by stating a series of hypotheses which link changes over time with changes in deprivation indicators. In addition, in the United States, the *Hardship Index* is used to measure crises in the social sphere.

Research conducted in post-socialist countries, where the phenomenon of social deprivation has a different character than in Western Europe and North America, proved to be an important reference. In Poland and other post-socialist countries, compulsory segregation within settlements, a legacy of housing of the second half of the twentieth century, can be clearly seen. Currently, slight changes in the structure of housing – a slow outflow of a wealthier group of residents to the outskirts of cities is noticeable (Sykora, 2009; Cirman et al., 2013).

Due to the large diversity of social situations at a regional level, deprivation is a relative measure – specific to a particular condition. Thus, a significant diversity among partial indicators of the indices analysed can be perceived. However, the analysis did not show a direct link between the model of social policy and the methodology for calculating deprivation indices. Furthermore, the issue of social deprivation can be viewed from different perspectives; therefore, indicators and indices can also be constructed differently. Some of them (e.g. Norway and Spain) are based on only a few main variables. For other countries (e.g. Great Britain) the number of partial indicators, and the number of dimensions in which social deprivation is analysed, can be proof of an in-depth analysis of the phenomenon. The types of analysed variable indicate the complexity of measuring methods. In most cases, stimulants as well as destimulants were used; however, a clear dominance of variables perceived as negative is present. It is worth mentioning that a certain limitation in the analysis is the implementation of eight dimensions of deprivation (based on Smętkowski et al., 2015). Some countries (e.g. Great Britain, Poland) have their own division of deprivation dimensions, and classification may be subject to debate. The indicator of *Asylum seekers in England in receipt of subsistence and accommodation support* may be an example. In the *Index of Multiple Deprivation* this indicator is analyzed as a partial indicator of income, while in other countries (Canada, Portugal, Spain) immigration issues are included in the sphere of groups at risk of exclusion.

The most popular indicators used in the analysed countries were education and living conditions (9 out of 10 countries studied). The least popular were those concerning health and the crime rate. The most numerous, in terms of the number of partial indicators, are those related to living conditions. Certain repeatability is visible among the analysed partial indicators: average income level, unemployment, overcrowding, and the level of education (measured by a number of years of education or leaving grades at school).

Indirectly, analysis of particular indicators may point to differences in the perception of deprivation. In Germany, one of the partial indicators in terms of living conditions is having a garden, whereas in post-socialist countries (Poland, Czech Republic) it is having a bathroom. Furthermore, there are significant differences in the use of income indicators and other dimensions of life. In the United Kingdom, deprivation can led to a variety of income support, while in the Czech Republic and Germany the emphasis is on the 'soft' indicators like cultural involvement or local activity. The problem of perception of deprivation is an interesting research issue. In further research, it is worth emphasizing how the perception of deprivation and the choice of specific indices determine the development of social and other policies (e.g. revitalization).

Nowadays, due to rapid changes, it is important to match the indicators to current social challenges such as increased migration or growing social pauperization. In this context, it is important to look at the deprivation indicator constructed in a slightly wider perspective. From an academic perspective as well as a practical approach, it would be worthwhile making observations of deprivation on a larger scale, e.g. the European Union or among other developed countries. For further research a commonly developed index based on the currently functioning indicators could be used.

References

Antczak, R., 2012: Nowe ujęcie wskaźnika rozwoju społecznego HDI (A new approach to Human Development Index – in Polish). In: *Studia i Prace Kolegium Zarządzania i Finansów*, Volume 117, Warszawa, pp. 7–24. http://kolegia.sgh.waw.pl/pl/KZiF/publikacje/Zeszyty%20Naukowe%20KZiF/Documents/117.pdf, DoA: 08.09.2017.

Atkinson, A.B., 1998: Poverty in Europe. Oxford: Wiley-Blackwell, pp. 67–111.

Atkinson, J., Salmond, C. and Crampton, P., 2014: NZDep2013 Index of deprivation. New Zealand Ministry of Health, Wellington, pp. 48–64.http://www.otago.ac.nz/wellington/otago069936.pdf, DoA: 08.09.2017.

Batorski, D. and Płoszaj, A., 2012: Diagnoza i rekomendacje w obszarze kompetencji cyfrowych społeczeństwa kompetencji cyfrowych społeczeństwa i przeciwdziałania wykluczeniu cyfrowemu i przeciwdziałania wykluczeniu cyfrowemu w kontekście zaprogramowania wsparcia w latach 2014–2020 (Diagnosis and recommendations in the field of digital society and counteract digital exclusion in the context of programming support in 2014–2020 – in Polish). Warszawa: Ministerstwo Rozwoju Regionalnego, pp. 14–24. http://www.euroreg.uw.edu.pl/dane/web_euroreg_publications_files/3513/ekspertyza_mrr_kompetencjecyfrowe_2014-2020.pdf, DoA: 08.09.2017.

Cirman, A., Mandic, S. and Zoric, J., 2013: Decisions to Renovate: Identifying Key Determinants in Central and Eastern European Post-Socialist Countries. In: *Urban Studies*, No. 50 (16), pp. 3378–3393. DOI: http://dx.doi.org/10.1177/0042098013482509

Coates, B., Johnston, R. J. and Knox, P., 1977: Geography and inequality. Oxford University Press, London.

Cochrane, A., 2006: Understanding Urban Policy: A Critical Approach. Oxford: Blackwell. DOI: http://dx.doi.org/10.1080/01944360701755634

Curtis, S.E., 2004: Health and Inequality: Geographical Perspectives. London: Sage Publication, pp. 84–112. DOI: http://dx.doi.org/10.4135/9781849209243

DeVerteuil, G., 2009: Inequality. In: Kitchin, R. and Thrift N. editors, *International Encyclopedia of Human Geography*, Oxford: Elsevier Press, pp. 433–445.

Ebbinghaus, B., 2012: Comparing Welfare State Regimes: Are Typologies an Ideal or Realistic Strategy?. European Social Policy Analysis Network, ESPAnet Conference, Edinburgh, UK, September 6–8, 2012, pp. 1–20. http://www.cas.ed.ac.uk/__data/assets/pdf_file/0005/89033/Ebbinghaus_-_Stream_2.pdf, DoA: 08.09.2017.

Esping-Andersen, G., 1999: Social Foundations of Postindustrial Economies. Oxford: Oxford University Press. DOI: http://dx.doi.org/10.1093/0198742002.001.0001

Garrington, S., 2005: Redevelopment of an inner-city area – Liverpool. In: *Geofile*, No. 506, pp. 1–4. http://pmt.physicsandmathstutor.com/download/Geography/A-level/Notes/WJEC/Changing-Places/Urban%20Redevelopment%20Liverpool.pdf, DoA: 08.09.2017.

Gatrell, A. C., 2001: Geographies of Health: An Introduction. London: Blackwell, pp. 23–54.

Glatzer, W., 2006: Conditions and criteria for improving quality of life. In: Ostasiewicz, W. editor, *Towards quality of life improvement*, Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, pp. 9–32.

Gregory, I.N., Dorling, D. and Southall, H.R., 2001: A century of inequality of England and Wales using standardized geographical units. In: *Area*, No. 33.3, pp. 297–311. http://www.geog.ox.ac.uk/research/transformations/gis/papers/dannydorling_publication_id1463.pdf, DoA: 08.09.2017.

Guillaume, E., Pornet, C., Dejardin, O., Launay, L., Lillini, R., Vercelli, M., Marí-Dell'Olmo, M., Fernández Fontelo, A., Borrell, C., Ribeiro, A., de Pina, M., Mayer, A., Delpierre, C., Rachet, B. and Launoy, G., 2016: Development of a cross-cultural deprivation index in five European countries. In: *Journal of Epidemiology & Community Health*, No. 70, pp. 493––499. DOI: http://dx.doi.org/10.1136/jech-2015-205729

Haisken-DeNew, J.P. and Sinning, M., 2007: Social Deprivation and Exclusion of Immigrants in Germany. In: *IZA Discussion Paper*, No. 3153, pp. 1–36.

Health Atlas for the City of Los Angeles, Los Angeles Department of City Planning, Los Angeles, 2013, pp. 27–41. http://planning.lacity.org/cwd/framwk/health-wellness/text/healthatlas.pdf, DoA: 08.09.2017.

Herbert, D.T. and Smith, D.M., 1979: Social problems & the city. In: *Geographical perspectives*, Oxford: Oxford University Press, pp. 13–29.

Herbst, K., 2008: Społeczny sens rewitalizacji (Social sense of revitalization – in Polish). In: *Ekonomia Społeczna*, No. 3, pp. 6–8. http://www.ekonomiaspoleczna.pl/files/ekonomiaspoleczna.pl/public/teksty2008/081007ESteskty2008Herbstv2.pdf, DoA: 08.09.2017.

Higgins, J., Deakin, N., Edwards, J. and Wicks, M., 1984: Government and Urban Poverty. Inside the Policy Making Process. In: *Journal of Policy Analysis and Management*, Vol. 3, Issue 3, pp. 487–488. DOI: http://dx.doi.org/10.1002/pam.4050030378

Human Development Report, 1997: Poverty in the human development perspective: concept and measurement. New York: Oxford University Press, pp. 15–23. http://hdr.undp.org/sites/default/files/reports/258/hdr_1997_en_complete_nostats.pdf, DoA: 08.09.2017.

Human Development Report, 2015: Human Development Data. http://hdr.undp.org/en/data, DoA: 08.09.2017.

Instrukcja metodologiczna do Narodowego Spisu Powszechnego Ludności i Mieszkań w 2002 roku (Methodological instruction to the National Census of Population and Housing – in Polish). 2002: Warszawa: Główny Urząd Statystyczny Biuro Spisów.

Kitchen, P., 2001: An approach for measuring urban deprivation change: the example of East Montreal and the Montreal Urban Community, 1986-96. In: *Environment and Planning A*, No. 33, pp. 1901–1921. DOI: http://dx.doi.org/10.1068/a3450

Knighton, A.J., Savitz, L., Belnap, T. and Stephenson, B., 2016: Introduction of an Area Deprivation Index Measuring Patient Socioeconomic Status in an Integrated Health System: Implications for Population Health. In: *Generating Evidence & Methods to improve patient outcomes*, Vol. 4, Issue 3, pp. 2–15. DOI: http://dx.doi.org/10.13063/2327-9214.1238

Krishnaji, N., 1997: Human Poverty Index: A Critique. In: *Economic and Political Weekly*, Volume 32, No. 35, pp. 2202–2205.

Langlois, A. and Kitchen, P., 2001: Identifying and Measuring Dimensions of Urban Deprivation in Montreal: An Analysis of the 1996 Census Data. In: *Urban Studies*, Vol. 38, No. 1, pp. 119–139. DOI: http://dx.doi.org/10.1080/00420980020014848

Montiel, L., Nathan, R. and Wright, D., 2004: An update on urban hardship. New York: The Nelson A. Rockefeller Institute of Government, pp. 33––49. http://rockinst.org/pdf/cities_and_neighborhoods/2004-08-an_update_on_urban_hardship.pdf, DoA: 08.09.2017.

Multidimensional Poverty Index, University of Oxford, UK, 2010, pp. 1–2. http://www.ophi.org.uk/wp-content/uploads/MPI-One-Page-final.pdf, DoA: 08.09.2017.

Næss, Ø., Piro, F.N., Nafstad, P., Smith, G. and Leyland, A. H., 2007: Air Pollution, Social Deprivation, and Mortality. A Multilevel Cohort Study. In: *Epidemiology*, Vol. 18, No. 6, pp. 686–694. DOI: http://dx.doi.org/10.1097/EDE.0b013e3181567d14

Narodowa Strategia Integracji Społecznej (National Strategy for Social Inclusion – in Polish). 2004: Warszawa: Ministerstwo Gospodarki, Pracy i Polityki Społecznej, pp. 21–23. http://www.mpips.gov.pl/userfiles/File/mps/NSIS.pdf, DoA: 08.09.2017.

Nathan, R. and Adams, Ch., 1989: Four Perspectives on Urban Hardship. In: *Political Science Quarterly*, Vol. 104, No. 3, pp. 483–503.

Noble, M., Wright, G., Smith, G. and Dibben, C., 2006: Measuring multiple deprivation at the small-area level. In: *Environment and Planning A*, 38, pp. 169–185. DOI: http://dx.doi.org/10.1068/a37168

Pacione, M., 2005: Urban Geography. London: Routledge Taylor and Francis Group, pp. 416–447.

Poradnik dotyczący realizacji wsparcia dla osób wykluczonych społecznie oraz zagrożonych wykluczeniem społecznym w ramach Programu Operacyjnego Kapitał Ludzki (Guidance on the implementation of support for the socially excluded and disadvantaged under the Human Capital Operational Programme – in Polish). 2010: Warszawa: Ministerstwo Rozwoju Regionalnego, pp. 5–12. http://www.ekonomiaspoleczna.pl/files/ekonomiaspoleczna.pl/public/Biblioteka/2010.2.pdf, DoA: 08.09.2017.

Rae, A., 2012: Spatial patterns of labour market deprivation in Scotland: Concentration, isolation and persistence. In: *Local Economy*, 27, pp. 593–609. DOI: http://dx.doi.org/10.1177/0269094212444569

Sánchez-Cantalejo, C., Ocana-Riola, R. and Fernández-Ajuria, A., 2008: Deprivation index for small areas in Spain. In: *Social Indicators Research*, Vol. 89, pp. 259–273. DOI: http://dx.doi.org/10.1007/s11205-007-9114-6

Short, K., 2003: Material and Financial Hardship and Alternative Poverty Measures. Paper presented at the 163rd annual meeting of the American Statistical Association, San Francisco, California, pp. 1–34.

Sirovátka, T. and Mareš, T., 2006: Chudoba, deprivace, sociální vyloučení: nezaměstnaní a pracující chudí (Poverty, Deprivation and Social Exlusion: The Unemployed and the Working Poor – in Czech). In: *Czech Sociological Review*, Vol. 42, No. 4, pp. 627––655. http://sreview.soc.cas.cz/uploads/79c9ef2919f909b9a9fdf5d794282d2e697aaaad_216_03sirovatka21.pdf, DoA: 08.09.2017.

Smętkowski, M., Gorzelak, G., Płoszaj, A. and Rok, J., 2015: Powiaty zagrożone deprywacją: stan, trendy i prognoza (Poviats threatened of deprivation: the status, trends and forecasts – in Polish). Warszawa: Centrum Europejskich Studiów Regionalnych i Lokalnych EUROREG, pp. 7–14. http://www.euroreg.uw.edu.pl/dane/web_euroreg_publications_files/5529/powiatowy_indeks_deprywacji_2015.pdf, DoA: 08.09.2017.

Smith, D. M., 1987: Geography, inequality and society. Cambridge: Cambridge University Press.

Sykora, L., 2009: Post-Socialist Cities. In: Kitchin, R. and Thrift, N. editors, *International Encyclopedia of Human Geography*, Oxford: Elsevier Press, pp. 387–395.

Tallon, A., 2010: Urban regeneration in the UK. London, pp. 140–153.

Teitz, M. and Chapple, K., 1998: The Causes of Inner-City Poverty: Eight Hypotheses in Search of Reality. In: *Journal of Policy Development and Research*, Vol. 3(3), pp. 33–69.

The English Indices of Deprivation 2015, Department for Communities and Local Government, London. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/465791/English_Indices_of_Deprivation_2015_-_Statistical_Release.pdf, DoA: 08.09.2017.

Townsend, P., 1979: Poverty in the United Kingdom. A Survey of Household Resources and Standards of Living. Penguin Books Ltd, Harmondsworth, Middlesex, England, pp. 31–59. DOI: http://dx.doi.org/10.5255/UKDA-SN-1671-1

Townsend, P., 1987: Deprivation. In: *Journal of Social Policy*, No. 16, pp. 125–146. DOI: http://dx.doi.org/10.1017/S0047279400020341

Ministry of Science and Higher Education
Republic of Poland