

STRUCTURE OF HOUSING IN THE EU COUNTRIES ACCORDING TO EU SILC

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Abstract

The main objective of the paper is to compare structures of housing in the European Union countries with regard to social housing. Social housing in the European Union is characterized by the wide diversity of national housing concepts and policies across the member states. Therefore, at first a short description of a variety of implemented approaches across the EU, in terms of tenures, providers, beneficiaries and funding arrangements is offered. In most publications, the individual EU countries difference in the proportions by tenure status is only mentioned as a fact. Thus we quantified these differences between selected EU countries using measures of similarity of structures. The paper provides the final graphical and numerical results of statistical analysis of data from the European Union Statistics on Income and Living Conditions (EU SILC). The data of EU SILC are available for all EU countries and provide a relatively high degree of comparability. The research results can be useful for the EU authorities and can contribute to the better allocation of resources and improving the financial management of the social housing in the EU.

Key words: social housing, spatial analysis, EU SILC, European Union, measure of structure similarity

JEL Code: R21, D63, C10

Introduction and References

The head of the European Commission Jean-Claude Juncker stated at his recent ‘State of the Union’ speech: “...this growth is leaving many behind and our societies are increasingly unequal. Similarly, the recent ‘recovery’ in housing markets is far from benefitting everyone and the state of housing in the European Union today remains critical. Growing needs of homeless and people in need for affordable housing...”.

The housing quality and affordability are often perceived as the living standard evaluation indicators of society and are the key components of quality of life. Socio-economic

importance of housing lies in creating conditions for the development of human potential, creative abilities and social activities of man (Hills, 2001; Hills, 2008).

In view of the need for the development of the social housing sector, it is necessary to analyze divergences in necessities and provisions of affordable social housing in the EU countries. Formulation of objectives and conclusions contained in this paper are based on the definition of the notion of “social housing”. The common feature of social housing is the fact, that the purpose of it is the general interest, the increase of affordable housing supply and that concrete social housing objectives are based on the socio-economic status and risk factors presence. At the EU level a common definition of social housing is absent and definitions and explanations of the concept of social housing vary from one EU country to another. However, as for the state aid, the European Commission adheres to *a restrictive definition of social housing, according to which this type of housing is reserved for disadvantaged groups of population*.

The wide diversity of national housing concepts and policies across the EU countries we discuss at source. A brief summary of different approaches in EU states on the topic can be found for example on the official website of the organization CECODHAS Housing Europe¹. The publication Quality of Life in the EU² according the 2016 survey provides a number of interesting indicators on housing (including for instance number of rooms in accommodation, types of ownership/tenures, quality aspects, the likelihood of having to move due to affordability. Its electronical version allows for the production of maps visualizing data across Europe, and some of the key indicators are presented through the use of interactive graphs. Besides many valuable conclusions, it notes that “data show the highest rates of satisfaction in Austria and Finland, followed by Denmark and the Netherlands, countries where the social housing sector is relatively large and typically houses are for wide and diversified population group. Malta also shows a rate of satisfaction, despite having a smaller social housing sector”.

¹ Housing Europe is the European Federation of Public, Cooperative & Social Housing established in 1988. It is a network of 45 national & regional federations. The country profile of „social housing“ on the official website Housing Europe provides an overview of facts about what is social housing, who provides social housing, how social housing is financed and who can access social housing. [ONLINE]. Available at: <http://www.housingeurope.eu/section-14/research?topic=&type=country-profile&order=datedesc>. (20 June 2018).

² Results of analysis of quality of life in the EU region based of the Survey 2016 are published by Eurofond at brochure Quality of Life in the EU (december 2017). [ONLINE]. Available at: <https://www.eurofound.europa.eu/publications/report/2017/fourth-european-quality-of-life-survey-overview-report> or <https://www.eurofound.europa.eu/surveys/european-quality-of-life-surveys/european-quality-of-life-survey-2016>. (9 June 2018).

A valuable source of opinions, facts and summaries about resolutions and trends in the theme are publications, and documents from conferences (the latest in Tirana, Albania in September 2017), of the European Network for Housing Research (ENHR) and are presented on its official webpage. The European Social Housing Observatory³ is the research department of the international not-for-profit organisation CECODHAS Housing Europe, that brings data about the sector, information of national housing statistics and facts about market trends per country, research briefings and publications.

The findings of the report “2012 Housing Europe Review” by Pittini and Laino (2011) are summarised in the article by Pittini (2012) from different perspectives: the diversity of definitions at the national level and common characteristics across Europe. Pittini analyze the size of the sector, which kind of actors are involved in social housing provision, who can benefit from a social dwelling in the different national contexts, how the sector is financed and what are the most significant trends and challenges.

Christine Whitehead in her chapter “Developments in the Role of Social Housing in Europe” (Jones, White and Dunse, eds., 2012) looks at the development of social housing especially since the 1970s and identifies major trends and their potential impact on social housing. In addition to trends identification, an analysis of how the social housing system works in each EU country, supported by relevant statistics, together with opportunities for innovation and improvement are presented by editors Scanlon, Whitehead, Arrigoitia (2014), as well as Lunde and Whitehead (2016).

Contribution to the understanding of social housing in two specific ways could be found updated in Poggio and Whitehead (2017). The first way is to investigate the role of social housing in European countries. The second way is to inform how social housing has fared across Europe since the global financial crisis and the subsequent recession - which in some countries is still unresolved. They specify three types of EU countries: the first, “Western European countries are with varying emphasis on providing for poorer more vulnerable households through social renting: Finland with 10% social housing; Ireland with 14% and France with 17%; than three smaller transition economies, Albania, Romania and Slovakia all of which have long experience of state owned housing but now have very small proportions of social renting; and last the Southern European countries of Greece and Cyprus neither of which have a tradition of social housing and indeed do not distinguish social housing in their official statistics.

³ Online available at: <http://www.housingeurope.eu/page-91/the-observatory>. (8 June 2018).

“As all the important studies on the issue show, the challenge of affordable housing in Europe has turned out to be huge. The data at European level show that most residents live in their own homes, and that rental tends to be a secondary option; homeowners have medium or high salaries, whereas renters tend to be those with fewer resources. The 2007 financial crisis widened social inequalities. There is a clear delay in certain European states that have not known how to keep a significant part of housing out of the speculative market”, indicated Tusell (2017) in his studies. He concluded, that “the increased cost of living above employment income is a key problem for more than a third of citizens in the European Union”. Tusell points out that “it is necessary to be attentive to the changes in individual preferences and technological disruption, because the traditional measures in terms of legislation and urban development come too late and are insufficient”.

However, only some important research conclusions could be recapitulate in the paper. For that reason, we are not dealing with, but we strongly emphasize other problems which highlight the importance of analyzes regarding the subject of “social housing of poor people or members of socially vulnerable groups in EU”, that are substandard and inadequate housing⁴, social housing for a diverse young population⁵, housing as the highest expenditure for Europeans⁶, finding adequate and affordable housing in places where job opportunities are, is increasingly hard⁷, affordable housing and the challenge of an ageing population – increasing needs of older people in the field of social housing, social housing of imigrants, nonprofit of social services versus social entrepreneurship, etc.

The individual EU countries differ in the distribution of population by tenure status. In most publications, this difference is only mentioned as a fact. Particularly, we quantified the enormous differences are in structures of housing in regard to the tenure status (e.g.

⁴ For more informations about the true cost of substandard housing for EU Member States, that suggests policy initiatives that might help address its social and financial consequences see Inadequate housing in Europe: Costs and consequences, Eurofond, 18 August 2016. [ONLINE]. Available at: <https://www.eurofound.europa.eu/sk/publications/report/2016/quality-of-life-social-policies/inadequate-housing-in-europe-costs-and-consequences>. (20 June 2018).

⁵ It is important to know that over 70% of young Slovaks living with their parents. More than 1 out of 4 of the EU young population (age 15-29, 17.7 % of the population) live in an overcrowded household. See more at Housing the EU Youth, A Research Briefing by the Housing Europe Observatory. [ONLINE]. Available at: <http://www.housingeurope.eu/resource-1081/housing-the-eu-youth>; or at Young people - housing conditions, Eurostat, available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Young_people_-_housing_conditions. (20 June 2018).

⁶ While house prices are growing faster than income in most EU member states, and inequality and housing exclusion are mutually reinforcing.

⁷ Political response to Europe’s housing challenge remains poor, a fact reflected in increasing levels of homelessness. More informations about topic in EU regions could be find in the publication The State of Housing in the EU 2017, Housing is still Europe’s challenge, Brusel, October 2017. [ONLINE]. Available at: <http://www.housingeurope.eu/resource-985/the-state-of-housing-in-the-eu-2017>. (20 June 2018).

owner, with mortgage or loan, no outstanding mortgage or housing loan, rent at market price and tenant, rent at a reduced price or for free). And so, in the part of the article: “Structures of housing in the EU countries relating to tenure status” we subsequently present the results of similarity of structures comparison by housing type in the EU countries’ populations.

1 Methodology, data source and variables description

For the quantitative comparison of distribution of population by tenure status, measures of similarity of structures can be used. To characterize the similarity of a pair of structures $\mathbf{p}_1 = (p_{11}, p_{12}, \dots, p_{1m})$ and $\mathbf{p}_2 = (p_{21}, p_{22}, \dots, p_{2m})$, we used coefficient constructed on the principle of measuring the distance of two vectors \mathbf{p}_1 and \mathbf{p}_2 . Cosine coefficient of structure similarity is a cosine of an angle φ , $0 \leq \varphi \leq \frac{\pi}{2}$, which is formed by a pair of nonnegative vectors \mathbf{p}_1 and \mathbf{p}_2 . Cosine of this angle is given by formula (Bartošová & Bína, 2010)

$$k(p_1, p_2) = \frac{\sum_{k=1}^m p_{1k} p_{2k}}{\sqrt{\sum_{k=1}^m p_{1k}^2 \sum_{k=1}^m p_{2k}^2}} \quad (1)$$

where p_{1k} is the proportion of k -th component on the total of the first structure, p_{2k} is the proportion of k -th component on the total of the second structure, m is the number of components of the structure. The values of cosine coefficient lay in interval $\langle 0, 1 \rangle$. Its upper values signalize higher similarity of structures. When the structures are identical $k(p_1, p_2) = 1$ and in case of their complete difference $k(p_1, p_2) = 0$.

The data used in this article are primarily derived from microdata from EU-SILC 2007 – 2016. The reference population is all private households and their current members residing in the territory of an EU member state at the time of data collection. EU-SILC is the EU reference source for comparative statistics on income distribution, living conditions and social exclusion at European level, particularly in the context of the Open Method of Coordination (OMCs) on social inclusion, pensions and health care. The relative size of the social housing sector is calculated as a proportion of the population living in a dwelling with a reduced-price rent or occupying a dwelling free of charge.

We analysed variable *Tenure status* (TENSTA_2, online data code: ilc_lvho02). We used the following classification for the accommodation tenure status in EU-SILC datasets: *Total* (TOTAL), *Owner, with mortgage or loan* (OWN_L), *Owner, no outstanding mortgage or housing loan* (OWN_NL), *Tenant, rent at market price* (RENT_MKT), *Tenant, rent at reduced price or free* (RENT_FR).

2 Definitions of social housing in 28 EU member countries

There is no common definition of the term ‘social housing’ across Europe. Different definitions are related to a different level of public intervention in this sector. The common feature is the fact that the purpose of social housing is the general interest, the increase of affordable housing supply and that concrete social housing objectives are based on the socio-economic status and risk factors present. However, as for the state aid, the European Commission adheres to a restrictive definition of social housing, according to which this type of housing is reserved for disadvantaged groups of population⁸.

In many countries, there is also no definition for social housing (e.g. Estonia, Cyprus, Croatia, Germany,), no official definition (e.g. Austria, Netherlands, Poland, Czech Republic, Ireland, Hungary) or no definition that is unanimously accepted (e.g. France). There is no social housing in Cyprus and Greece (Braga and Palvarini, 2013).

In the countries where the legislation exists, definitions of social housing refer to different aspects of this tenure. Social housing provision in *Belgium* is meant to offer adequate housing, i.e. qualitatively suitable to ensure hygienic standards and sound living conditions, but still affordable and with a certain security of tenure for households on a low income.

Social housing in *Bulgaria* consists of municipally-owned dwellings let to particularly needy people. In *Finland*, the right to housing is established by the Constitution, and the purpose of social housing is to facilitate the access to secure and high-quality housing for all. In *Denmark*, social housing or, more specifically, not-for-profit housing consists of housing for rent provided at cost prices by not-for-profit housing associations. Social housing in *Latvia* consists of „social houses“ and „social apartments“ rented by municipalities at affordable rents to vulnerable households. Municipal apartments let at a rent fixed by the state

⁸ State Housing Policy Concept to 2020 of Ministry of Transport, Construction and Regional Development of the Slovak Republic (3.3, p. 21). [ONLINE]. English version available at: <https://www.mindop.sk/ministerstvo-1/vystavba-5/bytova-politika/dokumenty/koncepcie>; (15 June 2018).

represent social housing in *Lithuania*. Social housing in *Malta* refers to the provision of housing and housing assistance to households that are in particularly severe need, usually on a rental basis. In *Portugal*, legal concept based on 1983' legislation defined social housing as housing built and bought with the financial support of the State.

In *Romania*, the term social housing (or social houses) is officially defined as “public dwellings with subsidized lease, allocated to individuals or families whose financial position would not otherwise allow them access to tenements leased on the market”. In *Slovenia*, social housing is officially defined as non-profit rented dwellings and it is addressed to people on low to middle income. Social housing in the UK is low-cost housing allocated on the basis of need.

In *Sweden*, the term “social housing” is not used. The corresponding sector is called “allmännyttig”, which literally means “public utility” or “for the benefit of everybody”. Social housing in Italy consists mainly of dwellings rented on a permanent basis; also dwellings built or rehabilitated through public and private contribution or the use of public funding (Pittini and Laino, 2011).

3 Structures of housing in the EU countries relating to tenure status

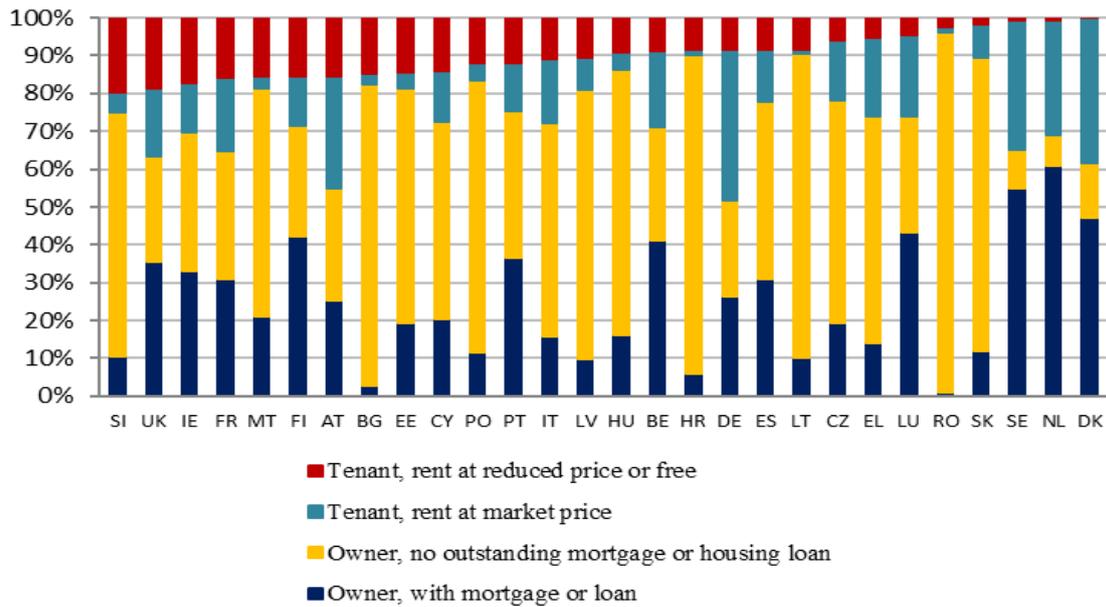
On the basis of data from the European Union Statistics on Income and Living Conditions (EU-SILC)⁹ in 2016, as such, 7 out of every 10 (69.2%) persons in the EU-28 lived in owner-occupied dwellings, while 19.9% were tenants with a market price rent, and 10.9% were tenants in reduced-rent or free accommodation. The share of the population living in a dwelling with a reduced-price rent or occupying a dwelling free of charge was less than 20.0% in all of the EU member states.

The proportion of people living in a dwelling with a reduced-price rent or occupying a dwelling free of charge was highest, among the EU Member States, in Slovenia (19.6%), UK (18.6%) and Ireland (17.1%). The lowest proportion was registered in Sweden (0.8%), Netherlands (0.7%) and Denmark (0.1%) – see Fig. 1.

Between 2007 and 2016, the share of people who lived in subsidized rental accommodation (Fig. 2) remained more or less stable in many countries (BE, DK, ES, HR, HU, NL, SK, UK).

⁹ EU statistics on income and living conditions (EU-SILC) methodology – concepts and contents. <http://ec.europa.eu/eurostat/statistics-explained/pdfscache/35201.pdf>.

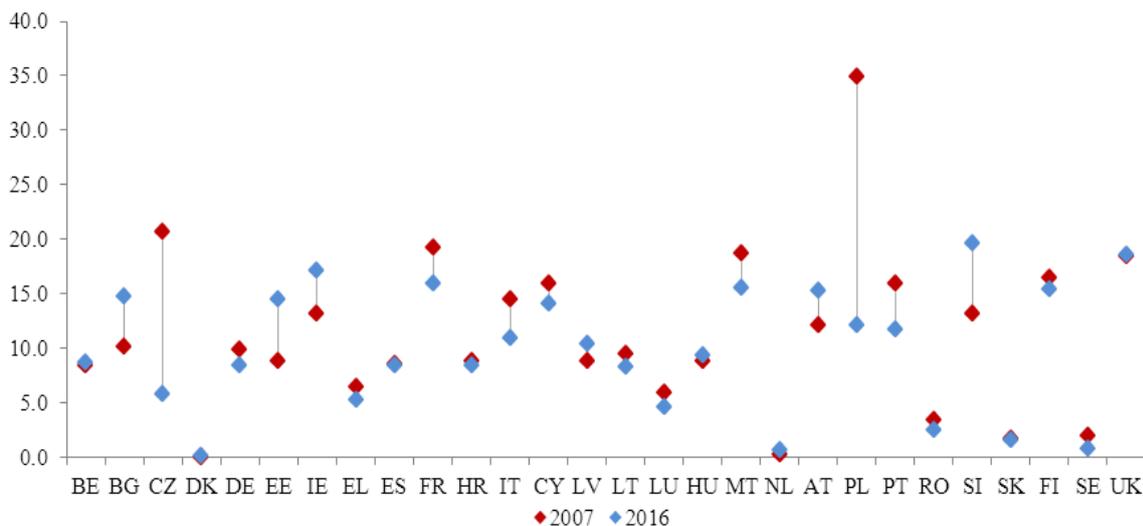
Fig. 1: Distribution of population by tenure status (% of population), 2016



Source: Eurostat (online data code: ilc_lvho02), own processing

The share of people living in a dwelling with a reduced-price rent or occupying a dwelling free of charge fell in Poland (from 34.9% in 2007 to 12.1% in 2016), in the Czech Republic (from 20.7% to 5.8%), in Portugal (from 16.0% to 11.8%), in France (from 19.2% to 16.0%), in Malta (from 18.7% to 15.6%) and in Italy (from 14.5% to 11.0%). By contrast, in Estonia, Ireland, Austria and Slovenia the share of people who lived in subsidized rental accommodation has risen.

Fig. 2: Change in share of population living in a dwelling with a reduced-price rent or occupying a dwelling free of charge (2007 – 2016, % of population)



Source: Eurostat (online data code: ilc_lvho02), own processing

Differences between distribution of population by tenure status of the individual EU countries were quantified using a coefficient of similarity of structures. For requirements to find similarities we have quantified cosine coefficient of structures similarity by the formula (1), based on the structure of the variable *Tenure status*. We compared distribution of population by tenure status in the Slovak Republic with other EU countries. The cosine coefficient of similarity takes the values signaling high level of similarity of structure of population by tenure status of Slovakia and Latvia (0.9924), see Table 1.

Tab. 1: Cosine coefficient of similarity in 2016 (Slovakia and other countries)

LV	LT	HU	HR	PO	RO	BG	CZ	EL
0.9924	0.9917	0.9898	0.9892	0.9883	0.9854	0.9770	0.9743	0.9729
EE	IT	SI	MT	CY	ES	PT	IE	FR
0.9678	0.9665	0.9632	0.9574	0.9455	0.8966	0.8041	0.7959	0.7717
AT	BE	LU	UK	FI	DE	DK	SE	NL
0.7140	0.6890	0.6799	0.6744	0.6706	0.6138	0.4065	0.3403	0.2971

Source: Own calculation

In the group of countries with the largest share of social housing (SI, UK, IE, FR, MT, FI, AT), following countries had the most similar population structure by tenure status: Ireland and France, United Kingdom and Finland, Slovenia and Malta (Tab. 2).

Tab. 2: Cosine coefficient of similarity in 2016 (the highest share of social housing)

	SI	UK	IE	FR	MT	FI	AT
SI	1.0000	0.7399	0.8480	0.8179	0.9842	0.7196	0.7526
UK	-	1.0000	0.9808	0.9884	0.8101	0.9876	0.9519
IE	-	-	1.0000	0.9916	0.9077	0.9766	0.9318
FR	-	-	-	1.0000	0.8723	0.9703	0.9703
MT	-	-	-	-	1.0000	0.8106	0.7855
FI	-	-	-	-	-	1.0000	0.9031

Source: Own calculation

In the group of countries with the smallest share of social housing (CZ, EL, LU, RO, SK, SE, NL, DK), the most similar population structure by tenure status was had by the following countries: Sweden and Netherlands (0.9947), Czech Republic and Greece (Table 3).

Tab. 3: Cosine coefficient of similarity in 2016 (the smallest share of social housing)

	CZ	EL	LU	RO	SK	SE	NL	DK
CZ	1.0000	0.9936	0.8166	0.9244	0.9743	0.5300	0.4865	0.5921
EL	-	1.0000	0.7772	0.9286	0.9729	0.4922	0.4386	0.5675
LU	-	-	1.0000	0.5480	0.6799	0.9136	0.8995	0.9242
RO	-	-	-	1.0000	0.9854	0.1756	0.1322	0.2470
SK	-	-	-	-	1.0000	0.3403	0.2971	0.4080
SE	-	-	-	-	-	1.0000	0.9947	0.9907
NL	-	-	-	-	-	-	1.0000	0.9718

Source: Own calculation

Conclusion

The wide diversity of national housing concepts and policies across the EU countries are discussed. The diversity implies huge differences in the levels of social housing present in each country. More than half of the population in each EU member country lived in owner-occupied dwellings in 2016, ranging from 51.7 % in Germany up to 96 % in Romania. The share of the population living in a dwelling with a reduced price rent or occupying a dwelling free of charge (social housing) was less than 20.0 % in all of the EU member states (from 0.1 % in Denmark to 19.6 % in Slovenia) and less than 10.0 % in 14 member states.

Particularly, the enormous differences in structures of housing in regard to the tenure status (e.g. owner, with mortgage or loan, no outstanding mortgage or housing loan, rent at market price and tenant, rent at a reduced price or for free) were quantified. In this paper, we analysed the distribution of population by tenure status in EU member countries. We were mainly interested in the part of population living in a dwelling with a reduced-price rent or occupying a dwelling free of charge (social housing). Data from EU SILC (variable *Tenure status*) were used.

The relative size of the social housing was calculated as a proportion of the population living in a dwelling with a reduced-price rent or occupying a dwelling free of charge. These differences in the volume of social housing between Slovakia and selected EU countries in 2016 were quantified using measures of similarity of structures. The cosine coefficient of similarity signalizes a high level of similarity of structure of population by tenure status of Slovakia and Latvia (0.9924), Lithuania (0.9917), Hungary (0.9898), Croatia (0.9892), Poland (0.9883) and Romania (0.9854).

Acknowledgment

This article is provided as one of the outputs of the research projects: VEGA 1/0770/17: Availability and affordability of housing in Slovakia and VEGA 1/0548/16.

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