



**Doctoral School
of Sociology**

THESIS SUMMARY

Gergely Daróczy

Uncountable homeless people in Hungary in the 2000s

Ph.D. dissertation

Dissertation Supervisor:

Károly Bozsonyi, Ph.D

associate professor

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1. BACKGROUND OF THE RESEARCH AND JUSTIFICATION OF THE THEMATIC CONCEPT

In my dissertation, I will attempt to estimate the number of homeless people in Hungary after the millenium and to outline an alternative typology on homelessness during the desk research of a large-sample questionnaire-based survey. The newness of this research is provided by the statistical methods applied, on one hand, and the longitudinal processing of the dataset of 13 years available for me, on the other hand.

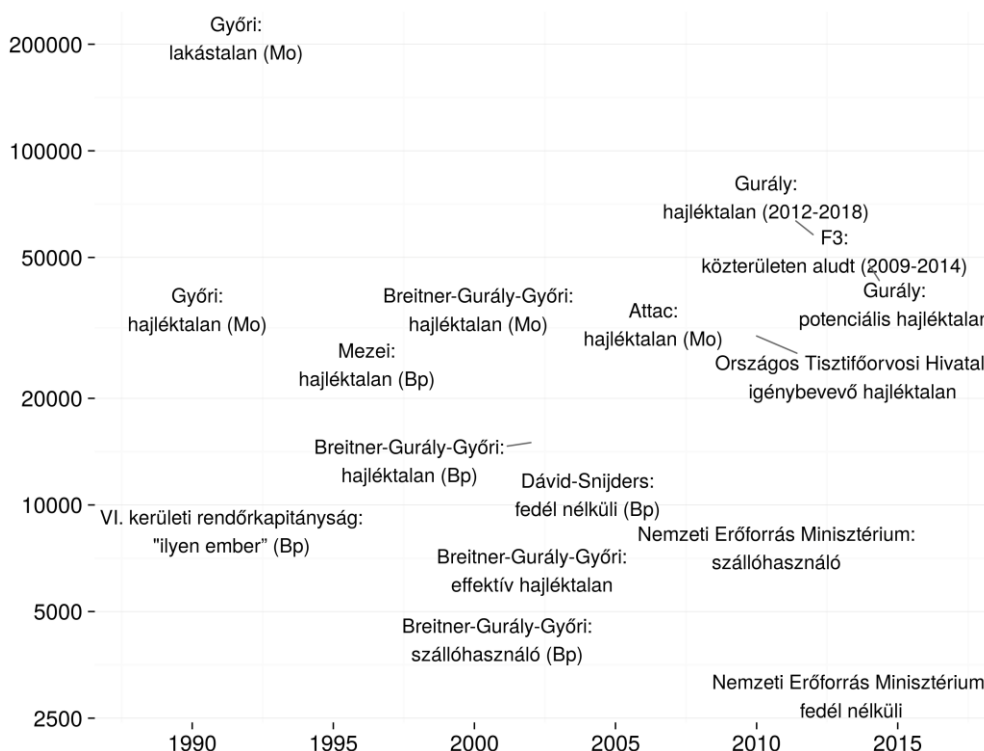
Therefore, the subject of the research did not come out of nowhere – official cross-sectional examinations have been carried out with similar purpose in Hungary from the second half of the 1980s (inter alia Utasi 1987; Mezei 1995 and 1999; Győri 1989, 1990, 1996, 1998, 2003, 2005, 2008 and 2013; Iványi 1997; Oross 1997 and 2011; Breitner 1999; Dávid-Snijders 2000; Albert-Dávid 1998 and 2001; Gyuris-Oross 1999; Breitner et al 2002; Bakos-Győri 2006; Fehér 2008 and 2010; Győri-Maróthy 2008; Gurály 2013), but the available estimates on the number of homeless people are widely disparate, and researches synthetizing the results of past research (Bényei et al 2000; Gurály 2012; Győri 2014 and further country reviews) have rarely been conducted; and, according to Busch-Geertsema et al (2014), the reliability of the available data and statistics does not currently allow the analysis of the evolution of the Hungarian homelessness situation.

On this basis, I strove to provide an overview of these earlier research results, and, building on their results and raw data, to prepare a longitudinal study on the number and living conditions of Hungarian homeless people in my PhD dissertation. The specific approach of the investigation is provided by, besides the novelty of the methodology, the fact that it primarily is looking for the interoperability of the results of researches on homelessness

conducted in the last 15 years, the similarity between them, permanent structures and homogeneous groups rather than the trends.

Thus, as a first step, clarifying the questions relating to definitions was an unavoidable necessity. In my dissertation, I listed related definitions used as in common terms, the current legislation in Hungary (Presidential Decree No. 1932; Act III of 1993 on Social Governance and Social Benefits; Decree No. 1/2013. [XII.2.] of the Minister of Public Administration and Justice), the approaches of the Hungarian specialized literature (Utasi 1987; Gyuris et al 1992; Albert-Dávid 1998; Breitner 1999; Bényei et al 2003), and the Feantsa ETHOS highlighted from international literature in accordance with Bakos-Győri (2006) and its simplified version, ETHOS Light (Edgar et al 2007), and their criticisms (Busch-Geertsema et al 2014; Amore et al 2011; McAllister et al 2010) as well.

Naturally, when examining conceptual issues, the context is not negligible, thus, for the sake of completeness and hoping that the estimations on the number of homeless people will be more precise, I went through the history of the Hungarian homeless assistance system, as well as the evolution of its capacity and use, and the estimates based on those to synthesize them:



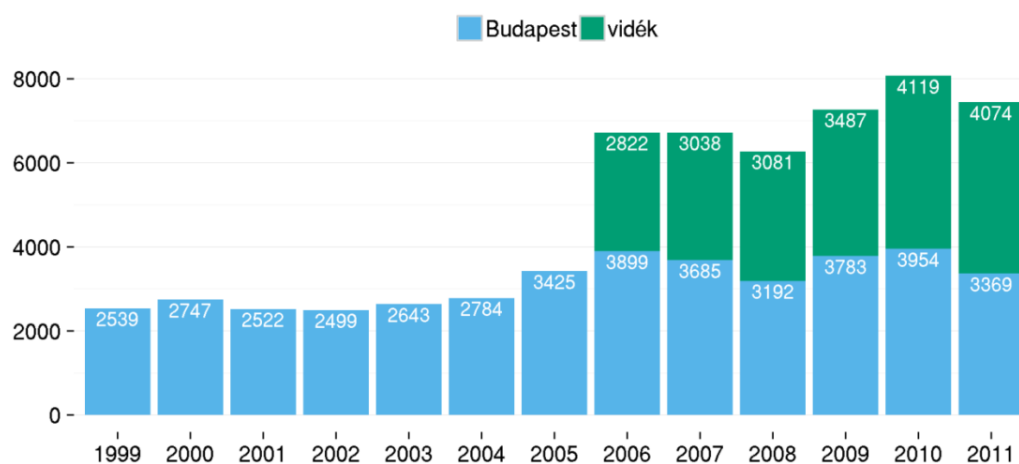
2. DATA AND METHODS USED

2.1. Data

My research relies principally on earlier surveys. The Február Harmadika (F3) Munkacsoport (Third of February Working Group) attempted for the first time in 1999 to survey Hungarian homelessness in the form of a large-sample questionnaire. Since then, research is repeated among reachable homeless people on the 3rd February (and the next few days among those who live in public places) each year, in the form of a complete, face-to face questionnaire administration, with the help of social workers (Bényei et al 2000).

The sampling frame has included the homeless population of nightshelters and temporary shelters in Budapest at first, then – since 2005 – in more and more other cities, as well as homeless people living in public places who can be reached by street social services. The response is voluntary; the rate of nonresponders reaches 6-10 percent (Győri et al 2006), but, according to Busch-Geertsema (2014), this may be significantly higher, and Gurály (2013) also puts the proportion of unreached homeless people at 30 percent.

However, the survey is very successful: a total of 63,013 (41,616 in Budapest) respondents were interviewed in 13 waves between 1999 and 2011:



2.2. Variables Examined

Initially, the questionnaires have contained 2 pages of questions, then 4 pages of questions from 2007. These include constantly recurring questions with similar wording that relate to demography and the actual homeless life, and a specific theme has been added to the research of each year. I focused on recurring questions in my research.

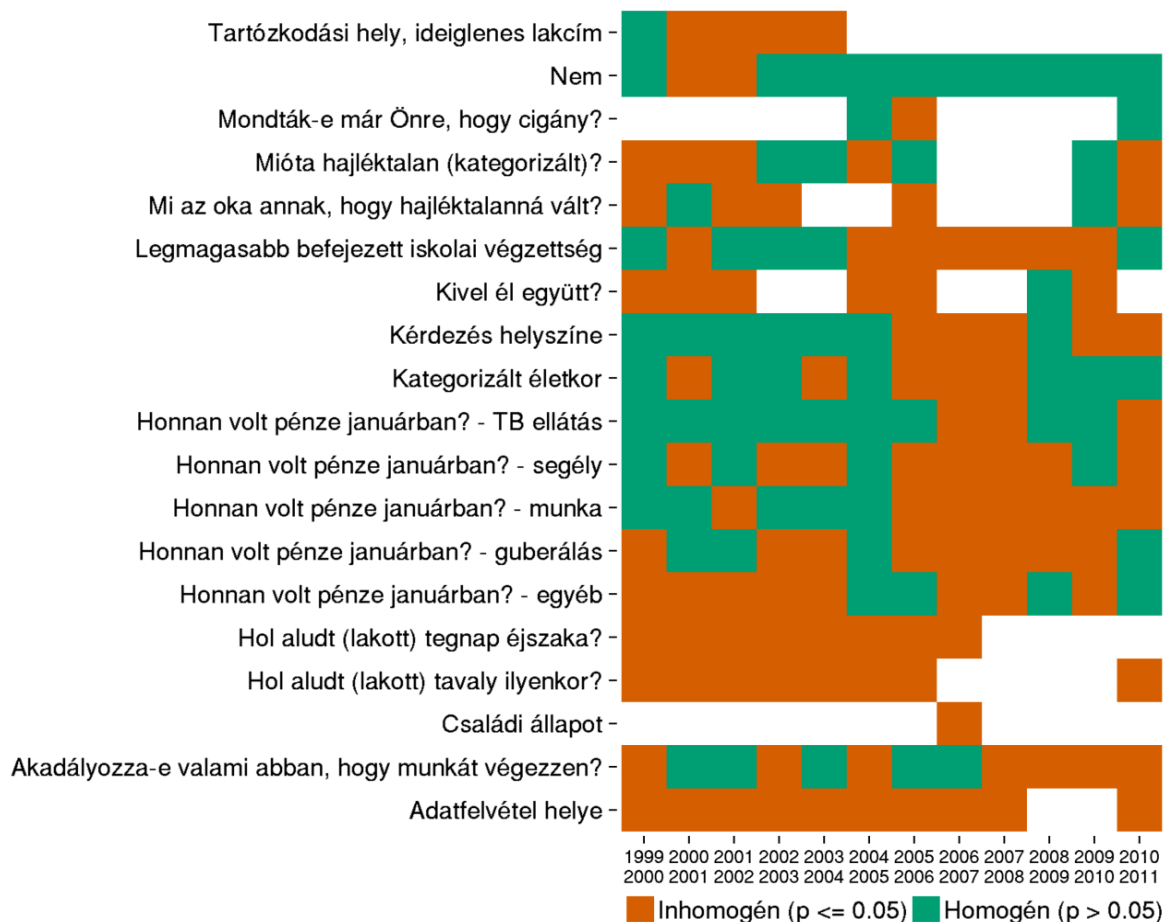
The questioned persons' initials and date of birth meant one of the most important variable sets in the database in my research. The combination of these variables with fairly high degrees of freedom ensures the anonymous identification of the participants within the different research waves to run log-linear models relating to the entire case number of the population.

Further recurring questions include the exact place of interview; where the respondent spent his/her nights the previous day and in the past year in weekly breakdown of public space, shelter and dwelling; whether (s)he slept in a public place ever; time of becoming homeless; with whom (s)he live together; and the list of income sources, illnesses restricting employment, monthly total income and the level of daily expenses have been expressed many times in connection with livelihoods.

The unification and cleaning of the database proved to be the most difficult task in the subsequent stage of analysis, whereby I created a common database in R programming language from the 13 SPSS SAV files. The transformation of data sometimes caused a loss of information due, on one hand, to the deletion of the likely incorrect data, and the harmonisation of category systems that vary in the different research waves, on the other hand. A good example of the latter one is educational attainment, which was administered with 5 categories several times, then with 8 categories, but it was not clear in each year whether the question refers to the level of education successfully completed or just started. Thus, I reduced the possible responses to four categories.

2.3. Homogeneity Testing

To set up an empirical typology on the basis of the combined databases, assessing the reliability of the surveys became necessary, for which I tested the databases of consecutive years on main variables with chi-squared test in order to learn whether the values of different years likely are from the same total population:



As demonstrated by the figure above, there is significant deviation in the composition of samples, which does not necessarily mean that the reliability of data is called into question. There primarily are the changes of sampling frame behind the deviations, and a much more uniform and unambiguously stable pattern can be seen when filtering for the place of interview (e.g. public place) and municipality (e.g. Budapest). But the shortcoming of the method is its inability to manage data gaps (white cells of the above matrix), which I intend to eliminate in a latter research with data fusion.

2.4. The Capture-Recapture Method and Log-Linear Models

The essence of the capture-recapture method well-known in ecology is observing and marking the members of a target population at different times, then the size of the total population can be estimated with the detection probability calculated from these data (Petersen 1896; Chapman 1951; Gurgel et al 2014). The fundamentally two-sample method was expanded for treating multi-sample surveys by Schnabel (1938), and was further refined by Smacher and Eschmeyer (1943). An important condition of this method is the independence of the surveys, but a certain degree of relationship between the lists is acceptable in case of more samples (Dávid-Snijders 2000), however the observation probability is still considered to be stationary (Agresti 1994). Another important condition is the closed population in periods under consideration, although, in case of the so-called “open population” models (Jolly 1965; Pollock 1982) new individuals may be born, individuals previously observed may die or move out from the population between the two observations.

Of course, this method can also be used in case of social sciences (Leyland et al 1993), though, in general, the way of marking is changed, and is made with an identifier recorded in a database.

First, Berk, Kriegler and Ylvisaker (2008) attempted to refine the previous estimates among homeless people living in Chicago with a simplified version of the method, following the methods used in the census of homeless population of Los Angeles in 1990 (Tauber-Siegel 1991; Martin et al 1997) introduced by Rossi (1985). During this census, 60 observers disguised as “decoy” homeless registered whether the members of the voluntary counting board observed and registered their presence. The research showed that approximately 22-67 percent of the homeless population had been registered (Wright-Devine 1995).

To my knowledge, Dávid and Snijders (2000) applied this method for the first time in Hungarian homeless research programs when combining the lists of the participants in the Tuberculosis Programme, the list of inmates of BMSZKI (Budapest Methodological Centre of Social Policy and Its Institutions) shelters and the list of homeless people registered in the main acute-care clinics of Budapest, but Elekes and Nyírády (2007) also concluded a similar research in a similar area, in connection with the estimate of the number of drug users, on the basis of health data and police's data.

In my own examination, I analysed the recurrent occurrence of more than 60,000 anonymous identifiers, and then I fitted different log-linear models (Chao 1987; Derroch et al 1993; Agresti 1994) to the table of occurrence frequencies, using the R programme language and the Rcapture package (Baillargeon-Rivest 2009). I compared the goodness-of-fit of models with the help of deviance and Akaike's information criterion (AIC), taking the number of parameters into account (D'Onise et al 2007).

2.5. Empirical Typologies of Homelessness

My aim was to outline a typology on the large mass of homeless people today in Hungary based only on empirical data, that is without theoretical background and preconceptions, using these rich data, beyond the estimates. The hierarchical and k-means cluster analyses normally used proved to be unsuitable for such examination of the life situation of more than 60,000 homeless persons due to the large number of discrete variates, thus I chose to apply the Latent Class Analysis (Linzer-Lewis 2011). The LCA is a finite mixture model, which optimises the cross-classification table created by the observed variables with low measures level and latent variables in such a way that it minimises the deviation of manifest variables on the latent grouping variable. Surprisingly, I have only seen this method applied in the work of McAllister, Kuang and Lennon (2010) in homeless literature so far.

3. RESULT OF THE DISSERTATION

3.1. Consolidated Data on the Number of Homeless People in Hungary

I attempted to compile and synthesize the results of previous researches on the number of homeless people in my dissertation, as these estimates used different methods and data, thus the interoperability of the results has not always been ensured. The collection of related snippets of information was hampered by the fact that raw data were rarely available, and, moreover, decompiling the previously published graphs, reading each partial result from figures, and then harmonizing the data extracted, reconciling categories and representing them in a standardized form were necessary to be able to compare them. I made them available together, in a standardized form and with the related conceptual framework.

3.2. Concatenated F3 Database

A decisive part of the background work was spent chiefly with cleaning, merging and standardizing the more than 60,000 recorded questionnaires of the 13 years of data set I have been given. This included identifying repeated questions asked during the different F3 research waves, standardizing the names of variables, conciliating category-systems, filtering unlikely responses out, tackling data gaps and creating derived variables.

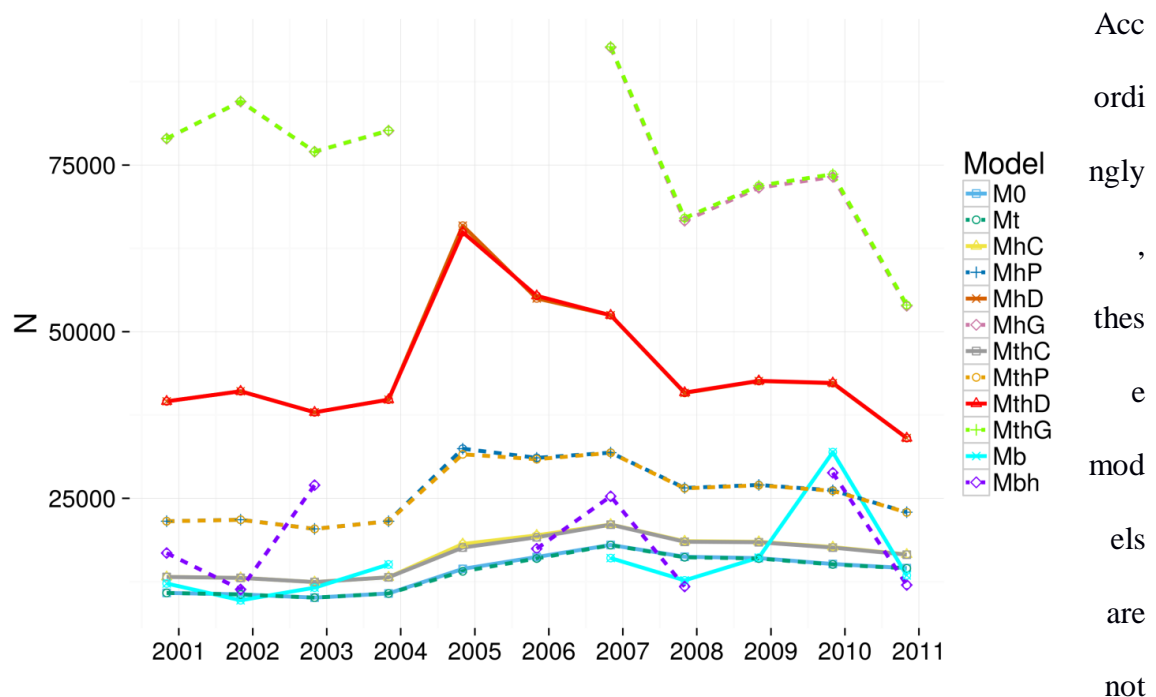
I had the opportunity to analyse the recurrent variables in the F3 questionnaires between 1999 and 2001 longitudinally on the basis of the concatenated database, focusing primarily on the sub-samples of Budapest in favour of a coherent sampling frame, whereby the experiences mostly coincided with the results of related literature.

This very time-consuming analysis has proven valuable even without new results: on one hand, it has borne the reliability of the F3 series out, and, on the other hand, has shown the

discrepancies due to different variants of recurrent questions – but, most importantly, it has been able to highlight the significant derogations between the researches, besides the trend analyses of the previous researches, which formed an important reference basis for the rest of the dissertation.

3.3. An Estimate on the Size of Homeless Population in Hungary

My estimates provided by using the log-linear models fitting to the occurrence frequencies of the anonymous identifiers of F3 data present a wide variance, as well as in related researches (Wiegand 1986; D’Onise et al 2007; Marpsat 2012):



suitable for producing accurate results, yet the research work was not useless. The proportion of population getting stuck in homelessness has been made known thanks to the “open population” models previously unused in the Hungarian homelessness research, on one hand, and a more comprehensive picture of the degree of the temporary situation of being homeless today in Hungary could be obtained, on the other hand, on the basis of the probability of entry and the number of persons leaving homelessness behind.

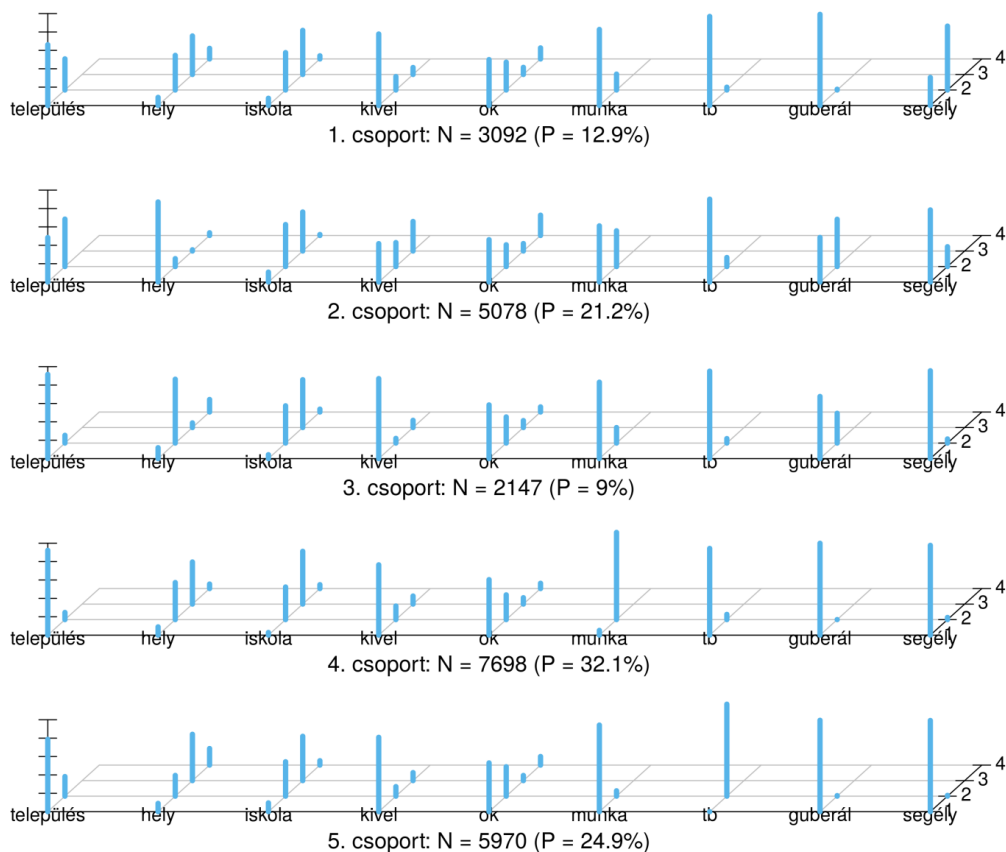
An important novelty of this process of estimation is ensured by the fact that it does not treat homeless people as a closed population, contrary to previous related researches; therefore the model allows the entry of new homeless people or their leaving from the system between different dates. This is particularly crucial for the F3 research, as the survey is repeated each year – during which time the fluctuation among homeless people is very high naturally. Furthermore, it is regrettable that the number of homeless people who live in public places and homeless shelters for several years is high and is growing according to the models.

To clarify the number of homeless people, it would be methodologically beneficial to involve further data in the models. The F3 Working Group has the opportunity only once a year to address homeless people living in Hungary in the form of a research, while registration data broken down by dates are available for the data owners of the KENYSZI (Central Electronic Database of Service Users) system. The cooperation of public care and professional organisations could not only help to estimate the number of homeless people more accurately, but to reduce their number as well.

3.4. Empirical Typology of Homelessness

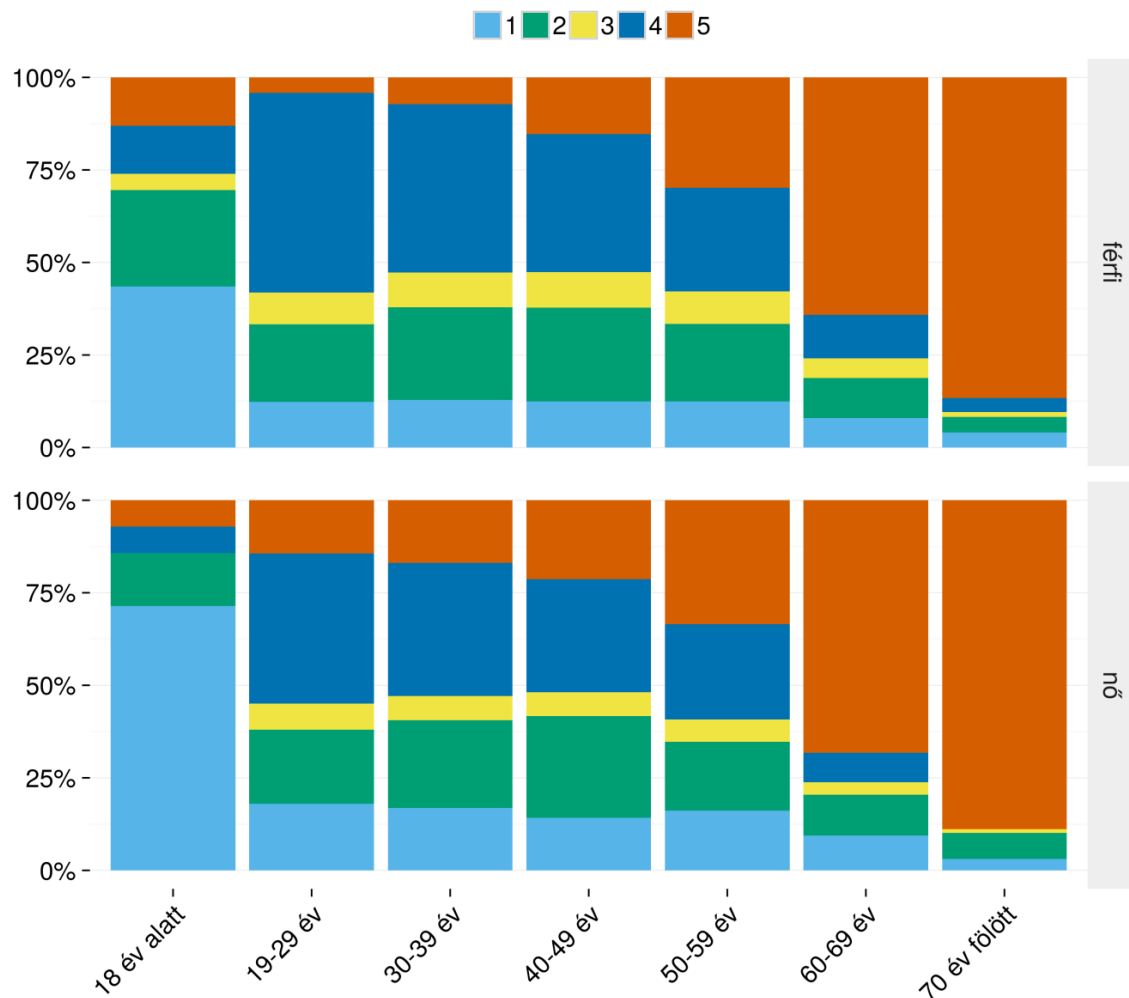
Finally, in accordance with my initial research purposes, building on the results of the past processes, I outlined more possible typologies of homelessness based on the concatenated database with the help of the LCA method so far little-known in the Hungarian literature related to homelessness. For this to be possible, it was necessary to carry out an annual homogeneity testing mentioned above.

The specificity of the groups presented lies in the fact that they are based on the common variable set of 13 years of database, thus rely only on empirical data; therefore they lack traditional preconceptions, even demographic variables in case of certain models – thus the actual life-situation results in the most important differences between homeless people:



The typology created with 9 variables (municipality, accommodation type, education, relationships, cause of homelessness, income sources) is outlined in the figure above, where, unfortunately, besides the low number of cases, the distribution of explanation variables per group has been shown only in the light of the high data gap: rough sleepers and homeless people of rural areas with varied sources of income are clearly captured by the second group. Both the first and the fourth clusters involve homeless people using shelters, but while labour incomes can be seen in case of the fourth cluster almost exclusively, the first group is characterized rather by support and other categories. Roofless people and the users of the nightshelters of Budapest can be found in the third cluster, a large part of whom supports themselves by scavenging, and a minor part of them by working. The fifth group covers homeless people usually using temporary shelters, covered by social insurance.

The distribution of the clusters is, for the most part, stable in different periods, but the social-demographic profile of certain types provides a much more interesting picture:



The typology is not sensitive to gender, but serious deviations can be found in the proportions of the clusters with regard to age. The proportion of rough sleepers is lower in the age group above 60 years of age, and below 20 years of age in case of women (Cluster 4), and, it is the other way around, therefore the proportion of homeless people who are covered by social insurance and usually use temporary shelters is rising, *mutatis mutandis*, with age (Cluster 5). It is also interesting from the figure above that the large number of those who use shelters (Clusters 1 and 4) are clearly separated with regard to age: Cluster 1, which is characterised by support and other categories rather than work, is found in a much greater proportion among rough sleepers under 20 years of age, than in case of elder homeless people.

Naturally, the models and the typologies based on them can be further refined by involving other variables of the very rich database and by tackling data gaps (e.g. with data fusion), which however remains to be done in the current stage of the research.

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