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SOCIAL MIX IN ZAGREB'S LARGE HOUSING ESTATES

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ABSTRACT. In Western and Northern Europe, post-war large housing estates (LHEs) stand out as areas of segregated and minority-populated housing, and have faced numerous attempts of reconstruction with the idea of social mixing. LHEs in Central and Eastern Europe had different developmental pathways. The heterogeneous structure of these estates has persisted until today, but due to the systematic neglect and aging, the estates are threatened by physical and social deterioration. The analysis is based on a survey conducted in Croatia in 2022 on two types of housing estates (socialist and post-socialist; N (Zagreb = 657)). The results confirm that the social composition in both types of estates is mixed, with a predominance of middle-class residents and without pronounced social differences. The residential satisfaction is high, so the majority of residents are *stayers*. Nevertheless, certain regeneration policies should be adopted because the population of the socialist LHEs is aging, which could jeopardize the present heterogeneity and make maintenance of multifamily buildings more challenging, thus contributing to further deterioration of the estates.

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Introduction and literature review

The simplest definition of social mix is the presence of diverse social groups within a neighborhood. Diverse or heterogeneous means that residents of an area should differ in socioeconomic status, housing tenure, age, ethnicity, lifestyle, etc. The idea that socioeconomic heterogeneity within communities is desirable has been present in Western urban planning since the late 19th century (Dekker et al., 2005; Galster & Friedrichs, 2015). As an antidote to segregation and spatially concentrated disadvantages, it is expected from it to bring some positive effects upon socially deprived residents. Good role models in the form of wealthier neighbors should provide access to a wider social network, information on job opportunities, etc. (Arthurson, 2010). Policymakers in many Western countries have tried implementing that idea, mainly through increasing the tenure mix in certain problematic neighborhoods. The most visible signs of problems are often found in post-World War Two large housing estates (Arthurson, 2010), which in Western Europe host a large number of unemployed or minority citizens with migration background (Hess et al., 2018). In countries such as France, the UK, Sweden and the Netherlands there have been large-scale investments aimed at restructuring

these estates and one of their goals was to increase the diversity of housing types and tenure (Galster, 2007). Nevertheless, the topic of social mix has been questioned and criticized on conceptual and empirical grounds by many scholars since the turn of the twenty-first century (Galster & Friedrichs, 2015).

Apart from an abundance of literature concerning the topic of social mix in the Western European context, Central and Eastern European housing researchers write less about this matter, due to a simple fact that Eastern European (post-socialist) societies do not encounter the problems of minority and segregated communities in the same amount as the Western, which is connected with their lower share of immigrants and foreign labor force. Another reason is the lack of actual policies aimed at regenerating housing estates and neighborhoods in post-socialist countries. In this paper we attempt to rethink the concept of social mix in a context that has often “taken it for granted” – the context of large housing estates (LHEs) in a post-socialist country.

According to Wassenberg, large and modernist housing estates are found all over Europe and can be described as coherent, compact and functional planning units mostly built between the 1950s and the 1980s, often containing more than 1,000 residences in high-rise buildings (Hess et al., 2018). Although similar in their morphology, post-war large housing estates in Central and Eastern Europe had different developmental pathways than their Western, Southern or Northern European counterparts. In line with the socialist ideology, during their construction they were inhabited by various social strata, from working class to higher class or the nomenclature. The diverse structure of these estates has, according to research, persisted to this day (Kährlik & Tammaru, 2010; Kovács & Herfert, 2012; Marin & Chelcea, 2018; Ouředníček et al., 2018), but due to systematic neglect and aging (Herkert et al., 2013; Gorczyca & Grabiński, 2018), non-existent regeneration programs and inefficient housing policies, these estates are now threatened by physical and social deterioration (Mandič, 2010; Nedučin et al., 2019; Svirčić Gotovac et al., 2023). Socialist estates are still considered attractive places to live, partly because they still make up about 40% of the housing stock in CEE countries (Dekker et al., 2011; Hess et al., 2018) and due to a decades-long citizens’ habit of living in these housing estates, with a low level of residential mobility. However, when faced with competition in the form of new (post-socialist) housing estates, the upward residential mobility of wealthier residents could endanger the present social mix in the neglected old estates, especially with regard to age and education.

In the light of the debate on social mix, in the first part of this paper we try to answer the question whether it is still purposeful to advocate socially mixed communities. Then we will further illuminate the differences in the trajectories of Europe’s large post-war housing estates and present the context of this study – the socialist and post-socialist housing estates in Croatia’s capital Zagreb.

Based on results of a survey conducted in Croatia in spring 2022 on socialist estates (built 1945-1990) and post-socialist estates (built after 1990) two main research questions will be analyzed at the level of the City of Zagreb subsample (N=657). Firstly: What are the differences in the “objective” level of social mix and the residents’ view on social mix (perceived social mix) between LHEs of the socialist era and those from the post-socialist era? Secondly: Considering residential satisfaction and potential residential mobility, is the social composition of these estates endangered in the long run?

By investigating residential satisfaction and mobility, the study assesses the long-term viability of the current social composition within these estates. This can help predict future trends in urban development, such as potential risks of segregation, and inform potential urban policy and planning strategies, especially ones aimed at regenerating the old estates, but also ones fostering sustainable and cohesive communities in both types of estates.

1. Should we foster mixed communities?

Since so many countries around the world strive for it as a policy goal (Levin et al., 2022) without having a clear definition or empirical evidence supporting it, social mix can be viewed as more than a socioeconomic condition – it can be considered as a political concept, and is often part of housing policies. Despite the differences in definitions and policies from country to country, the core idea of the urban strategy of social mixing is similar all over the world: the disadvantaged residents of deprived neighborhoods can benefit from the proximity of better-off residents, e.g. middle-class citizens. The mechanisms through which this should occur are studied under the term *neighborhood effects* – an expectation of “sizeable, independent effects of neighborhood social context on any individuals’ behaviors or outcomes” (Galster, 2007). Social mix, as a characteristic of a neighborhood, is presumed to have an impact through one or more causal pathways: one group of them being intra-neighborhood social interactions (e.g. a stronger bridging social capital among residents), and the other extra-neighborhood stigmatization/resource restrictions (better access to public and private services and reduced area-based stigma) (Galster 2007; Galster & Friedrichs, 2015; Levin et al., 2022). There are serious methodological challenges of researching such mechanisms due to pitfalls like the *geographic selection bias* (Galster & Friedrichs, 2015) or the *reflection problem* (Manski, 2000, as cited in Miltenburg, 2015), as well as the lack of longitudinal research on large-scale intervention policies. Investigating neighborhoods in Sweden, Andersson and Musterd (2005) concluded that the association between housing mix and social mix is not very strong, a conclusion that can make us question this dominant approach to achieving social mix. As an alternative, Ostendorf et al. suggest that poverty is approached directly instead of “hoping for the results of a dubious ‘neighbourhood effect’” (2001, p. 371).

Besides that, some researchers claim that a good social climate in an area may be achieved by exactly the opposite of social mix – a homogenous surrounding. Forrest and Kearns (2001) argue that homogeneous neighborhoods can be essential to our sense of identity and ontological security, and Sinha et al. (2017) reveal that social homogeneity increases the residents’ satisfaction with housing quality. Putnam stated in his research in 2007 (as cited in van Kempen & Bolt, 2009) that ethnic mix negatively affects the size of social networks and the level of trust in a community, and lowers the level of participation, triggers anomie or social isolation. Also, even if mix is present, several scholars argue that it just creates local societies “in which different people do not interact with each other, let alone help each other in improving one’s life-chances” (Blokland, 2003, as cited in Musterd, 2008, p. 898). Additionally, van Doorn stated that the focus on the neighborhood or district as a social unit was useless because of the fact that people had become more mobile, and residents were focused less on their immediate surroundings (van Doorn, 1955, as cited in van Kempen & Bolt, 2009), especially well-educated ones who have a wide network of activities and ties outside the estate (Dekker et al., 2011).

Why are then still many scholars who investigate this topic and think it is worth to fight for socially mixed communities? It should be stressed that although some measures are overly optimistic regarding their expected outcomes and can also have some negative side-effects (Galster & Friedrichs 2015; Bolt 2018), they could also be viewed from the perspective that they could prevent the worst possible outcome – ghettoized and segregated neighborhoods. Vaattovaara et al. (2018) called the spatial social mixing agenda in post-war housing estates in Helsinki a *preventive experiment*. So, if there is a danger of segregation, that process could be countered with some kind of a social mix promoting measure. Levin et al. (2022) together with Galster and Friedrichs (2015) argue that policymakers should move beyond a “one size fits all” approach and call for developing a new “Social Mix Version 2.0” that would go beyond the old

understanding of social mix developed in (and for) the context of developed (Western) countries and beyond the idea of demolition and relocation of public housing tenants. For that reason, scholars should also research mechanisms for fostering social mix when already present or in places where it appears to a greater degree than in the past.

The notion that social mix is a primarily political (policy) concept does not necessarily need to have a negative connotation, because such policies promote certain positive values such as “inclusion, justice, fraternity, solidarity, tolerance”. The socially mixed city is considered to be “‘healthier’ and more ‘liveable’ than a city where visible and/or invisible boundaries separate people by race, income or social status” (Korsu, 2016, p. 605). Thus, the socially mixed city also fits into the frame of a socially sustainable city insofar as social sustainability underlines the importance of compatible cohabitation of culturally and socially diverse groups (McKenzie, 2004; Hagen et al., 2017). Considering all that, it is worthwhile to investigate the possibilities of preserving social mix in the post-socialist context.

2. Social mix in Europe’s LHEs

The pan-European construction of large modernist housing estates was after the Second World War a state-controlled/financed reaction to the rapid post-war processes of industrialization and urbanization and the lack of housing stock related to it (Dekker & van Kempen, 2004; Hess et al., 2018). The context of their construction is in each country somewhat different, but many similarities can be found in their development trajectories and the problems they face. In Northern, Southern and Western Europe these housing estates make up a small part of the housing stock (about 10%), and around 40% in CEE countries, whereas in some cities in Eastern Europe they make up to 80% of the housing stock (for example Bucharest) (Hess et al., 2018). Due to their gradual decline, in the north and west they are the most affordable segment of the housing market, so that today they mostly host the most vulnerable groups in the society – low-income residents and ethnic minorities. As they became areas of combined spatial, ethnic and social disadvantages with a negative reputation (Bolt, 2018), they also became spaces for experimenting with housing policies, one of them being the planning of socially mixed communities through increasing tenure mix.

In CEE housing estates the situation is different. Although facing similar problems with physical deterioration and especially low energy efficiency, they still set housing standards in this part of Europe (Nedučín et al., 2019). It is important to emphasize that CEE countries in the post-socialist period (until recently) did not have a strong, if any, process of immigration of different ethnic minorities (unlike Western European countries) and that the estates remained inhabited as they were before, mostly by the local population. In that sense the attractiveness of the LHEs has also remained on a similar level. Since the systematic political changes in the nineties, most part of this stock has been privatized. On the other hand, the housing stock is not adequately managed – the owners have a low level of awareness, especially elderly and poor residents, of how to take care of the common parts of the property or multi-family buildings. Tenants of lower economic status often do not have the financial means that would be necessary to invest in the maintenance and renovation of buildings, which began to deteriorate. The poor maintenance has then caused technical and economic disadvantages in the estates, and researchers from CEE countries also predicted potential social problems (emigration of middle-class members, concentration of deprived groups, deterioration of the quality of life, a lower status of the estates on the housing market...) (Dimitrovska Andrews & Sendi, 2001; Nedučín et al., 2019; Svirčić Gotovac et al., 2023).

Despite the predictions, the residents seem to be rather satisfied with their estate, and the social composition seems to be heterogeneous (Herfert et al., 2013), so the LHEs have a

stable housing status in CEE countries (Grossmann et al., 2017; Nedučin et al., 2019). When describing the social mix in these estates, authors refer to it in positive terms: as “the main attribute of Prague’s housing estates” (Ouředníček et al., 2018, p. 339), as “healthy”, combined with a strong attachment of residents to their estate in the case of Riga (Treija, 2009, as cited in Kovács & Herfert, 2012), or in the case of Tallinn as good with no straightforward indications of their socio-economic downgrading and no danger of them becoming ethnic ghettos (Kährlik & Tammaru, 2010). In his search for the mechanisms that affect neighborhood satisfaction in large housing estates, Gent’s results showed that the perceived social mix is not significant for the causality of satisfaction. Nevertheless, he adds that “the effect of social mixing on neighbourhood satisfaction deserves more attention” (2009, p. 97).

Thus, on the one side results indicate high residential satisfaction and a perception of a good social mix in CEE LHEs. On the other side, Musterd and van Kempen (2007) have also shown that among the four types of residential satisfaction and potential residential mobility (*‘unsatisfied trapped’*, *‘unsatisfied springboarder’*, *‘satisfied springboarder’* and *‘satisfied stayer’*) the highest share of *‘unsatisfied trapped’* residents (residents who express discontent, but are not able (or willing) to move) are in Eastern Europe’s former socialist countries (14.4%). A similar percentage of *‘unsatisfied trapped’* residents also emerged in the research of Kovács and Herfert (2012). They tried to explain this result through the general difficulty of finding housing alternatives in Eastern European cities because almost a half of the population lives in LHEs, and due to the dominance of owner-occupation which causes rigidity of the local housing markets. Herfert et al. (2013) likewise speak of a high level of satisfaction and low level of mobility while comparing five socialist housing estates, but they found a lower percentage of unsatisfied trapped residents (3-6%). Nevertheless, they warn that even in stable neighborhoods like Leipzig-Grünau the aging population and missing in-migration of younger age-groups could lead to social downgrading of the estate. That is why it is important to not only assess the current physical and social condition of the estates, but also the future prospects – a good present social composition could possibly soon be endangered, due to rapid physical degradation and the mobility patterns resulting from that, as well as, consequently, further aging of the population (Gorczyca & Grabiński, 2018; Kabisch et al., 2022).

3. Housing estates in Croatia and Zagreb

In Croatia, a former member state of the socialist country of Yugoslavia, large housing estates were, like in other parts of Europe, built after the Second World War according to CIAM principles of modernism and functionalism. That means that they were designed as separate and self-sufficient housing entities, equipped with the basic urban and public infrastructure (essential social and commercial services). Large green open spaces placed in the middle of the complexes are even today considered one of the most valued characteristics of this type of housing (Sendi & Kerbler, 2021). Besides the principles regarding the morphology of the estates, one of CIAM’s principles was also building mixed estates for different social classes, because modernists believed in creating a new egalitarian society by improving the housing and environmental conditions for the working classes (Rogić, 1990; Spevec & Klempić Bogadi, 2009; Wassenberg, 2018). In the socialist system of Yugoslavia, public housing provision was one of the main goals that complemented the state’s industrialization policy (Seferagić, 1988; Rogić, 1990; Bežovan, 1993; Svirčić Gotovac, 2020). In line with the egalitarian ideology, apartments in LHEs were through the central planning system allocated to citizens from all strata – from the mentioned working class to middle class and bureaucrats, academics and politicians. However, the housing production lagged behind the real housing demand, so the waiting lists were long and apartments were often allocated to key figures for the reproduction

of the system (politicians, experts, etc.). As it was obvious that the socially-oriented housing construction could not cover the demand, the state tacitly tolerated illegal construction of individual family-type houses mostly on the periphery of the cities for those that would otherwise be at the back-end of the waiting lists (Čaldarović, 1987; Rogić, 1990). Therefore, the social structure in the LHEs was in the socialist time in some places more homogeneous, in others more heterogeneous, with a predominance of the working and middle-class, and a relative absence of the poorest citizens (unskilled workers) and the elite (Seferagić, 1988). These two strata often lived on the periphery of the cities – the poorest ones in the mentioned illegal construction zones and the wealthier in family houses and better estates near the city core (sometimes also in old and elite villas and detached houses from the 19th century).

Regarding large housing estates in Zagreb, the first planned estates in south Zagreb, which is called Novi Zagreb (“New Zagreb”) and is dominated by these architectonic structures, Savski gaj, Trnsko and Zaprude are considered among the most successful cases of urban planning, serving as an example for the majority of new estates in Yugoslavia from the 1960s (Jukić et al., 2011). With the collapse of the socialist system and the transition to capitalism and democracy in the context of the market economy in the 1990s, the public type of housing in Croatia was almost completely replaced with private apartment ownership. Croatia is today among the top EU member countries with 90.5% of privately owned or co-owned apartments (Eurostat, 2021). In the process of housing privatization (Mandič & Clapham, 1996; Hegedüs & Tosics, 1998; Svirčić Gotovac, 2020) apartments in LHEs were repurchased by their former tenants – a process that is called the *give-away privatization* (Lux & Sunega, 2014; Stephens et al., 2015), due to very low prices that did not match the market value of the apartments (Bežovan, 1993), so that the residents of LHEs very easily became new private owners.

In Croatia, 62% of the total national stock of multi-family buildings was built during the socialist period (until 1990). It is interesting to compare that stock to the 26% built in the post-socialist period after 1990 (the so-called *new estates*) (Ministry of Physical Planning, Construction and State Assets (Republic of Croatia), 2021). From the nineties onwards, in the post-socialist context there has been a gradual loss of standards (the so-called housing standard), which have for decades earlier determined the basic spatial parameters in the development of housing estates as residential communities with standards in the number of parking plots, green and public spaces etc., according to the population of the estates (Jukić et al., 2011; Svirčić Gotovac et al., 2021). From that period forth, the housing provision was mainly determined through the processes of transitioning to a free-market economy and *financialization of housing* (Aalbers, 2016; Rodik et al., 2019). A bigger role of private interests and profit consequently means that new residential constructions are often built without urbanistically planned facilities and equipment, so that the new residents need to use old public infrastructure built in the socialist estates. Therefore, they often put pressure on the existing infrastructure, especially on schools, kindergartens and public spaces. In the post-socialist context new constructions are mostly built by private investors and predominantly host younger families from middle and higher social classes, who can take on a housing loan, so it can be presumed that the lower classes and people working in precarious working conditions are excluded from buying these dwellings. Therefore, it can be presumed that in these estates the social mix is consequently different than in the old estates.

4. Methodology

The analyzed data was collected through a survey¹ conducted in Croatia in May and June of 2022 on two types of housing estates (socialist and post-socialist) in four major Croatian cities: Zagreb, Split, Rijeka, and Osijek. The research sample was formed through a multistage process. In the first stage, individual housing estates across the city were purposefully selected according to their size, geographical location within the city and housing construction periods by decade to ensure that different urban planning and architectural features were represented in both the socialist and post-socialist estates. At the level of a specific LHE, a random sample of residents was selected, trying to ensure representativeness by the basic socio-demographic variables like age and sex. For that purpose, multistage probability sampling was implemented at the stages of: a) the multi-family building entrance (i.e. street address using the random walk method), b) the household within the building, and c) the respondent in the household (using the last birthday method). The survey was mainly administered face-to-face (after a pilot test), in a computer-assisted form (CAPI method) by a professional agency. Due to the insufficient response from potential participants, a smaller number of surveys (<15% of the total sample) were conducted using telephone-assisted interviewing.

Altogether, in the four cities the total sample consists of (N=1536) participants, but we performed the analysis on the Zagreb subsample of 657 residents: 261 in nine new estates (built from 1991) and 396 in ten old estates (built in the period 1945-1990). Since the share of the socialist-era housing stock is larger than that of post-socialist construction in the overall housing stock, the sample accordingly includes approximately 60% of participants from old (socialist) estates compared to 40% from new (post-socialist) estates and locations. In each estate we surveyed 20-55 residents, depending on the response rate and the size of the estate (because the post-socialist estates are usually smaller than the socialist). The questionnaire was designed by the research team and consisted of various questions on subjects such as residential satisfaction and quality of housing and life, environmental and ecological aspects of the estate, social relations and cohesion, participation in neighborhood activities, etc.

To grasp the “objective” level of social mix we used the ordinal variables of income and education (as measures of the socio-economic status (SES)), as well as the variables of age and age categories. Like Musterd (2008) we calculated the entropy within the income variable. Ethnicity was not measured, due to Croatia being, at that time, an ethnically quite homogenous country.

The “subjective” or perceived social mix was actually operationalized as the perceived social homogeneity, and rated on a scale from 1 (totally disagree) to 5 (totally agree) to the statement: *Residents in this estate are of similar socio-economic status* (the concept of SES was explained to them by the interviewer). The participants additionally rated the statement: *Social diversity (social mix) encourages contacts between residents*.

On a scale from 1 to 5 (very dissatisfied to very satisfied) the participants rated their satisfaction with the estate and the building they are living in, whereas the *potential residential mobility* was assessed with the item: *Does your household have plans to move in the next 2 years?* (1 – yes, we are planning to move, 2 – we would like to move, but we do not have the opportunity, 3 – no, we are not planning to move).

For the analysis we used the software IBM SPSS Statistics 26. Depending on the corresponding variable, the two types of estates were compared using the Chi-square test,

¹ This paper is the result of a bilateral research project between Slovenia and Croatia. The described methodology pertains to the part of the project conducted by the research team from the Institute for Social Research in Zagreb, and the research team from the Urban Planning Institute of the Republic of Slovenia was responsible for the part of the project conducted in Slovenia (the results of which are not presented in this article).

Independent samples T-test or the Kruskal-Wallis test (when large differences in group sizes were present).

5. Results

5.1. General features of the sample

To grasp the objective level of social mix and to answer the first part of the first research question, we looked at the socio-demographic distribution of the sample. In our sample the respondents were predominantly female (61% in old settlements and 64% in new ones). The mean age of respondents was 48.6 ($SD = 16.1$) years in old, and 42.1 ($SD = 14.9$) in new LHEs, which is significantly younger ($t(652) = 5.2, p < .01$) and supports the assumptions of an aging population in the old estates. If we roughly divide the participants in three age categories (18-34: young people, 35-64: middle age, 65+: older population), we can notice that in the new estates 30% of participants are in the first category, while only 10% are part of the oldest category. In the old estates about a fifth of the participants is in each of these two categories, making the subsample significantly different (older) in terms of age categories ($X^2(2, N = 654) = 13.7, p < .01$). The average household size in the new estates is significantly higher (3.0 vs. 2.3 in the old LHEs, $t(485) = 6.7, p < .01$).

Although in our sample the share of residents whose education level is higher than a high school degree is somewhat higher in the new estates (57.5%), the difference in education levels between the old and new estates is not significant ($X^2(5, N = 654) = 6.8, p > .05$). The share of higher educated respondents is high in both types of estates (higher than in the general population of the City of Zagreb) and probably only a sign of the fact that higher educated people (and women) are more inclined to participate in surveys.

The income variable was by far the item with the most missing values – a quarter of participants from the old and a fifth from the new estates did not want to give information on their monthly household income. In the old estates the distribution on this variable was unimodal, slightly left asymmetrical from the median category (10,001-12,000 HRK / 1328-1593 EUR), with few extreme values. In new LHEs the median category was higher (12,001-14,000 HRK / 1593-1858 EUR), but bimodal with modal categories left and right from the median category, with few participants with low income and more with high household income. Since income is traditionally considered the main indicator of social mix, we calculated the entropy within this variable, as entropy is an estimator of population variability in nominal/categorical data (Vanhoy, 2008). On the scale from 0 (total homogeneity, all participants in one income category) to 1 (maximal heterogeneity), both socialist and post-socialist LHEs have high values – 0,90 in old and 0,95 in new estates – and can be considered as highly mixed estates.

5.2. Perception of homogeneity in housing estate

To answer the second part of the first research question, we analyzed the subjective level (the perception) of social mix in the estates. Being asked if residents in their estate are of *similar socio-economic status*, almost every third participant in both settlement types stated that they neither agree nor disagree. This can be an indicator that residents do not notice such differences, due to the fact that the differences between their socioeconomic status / social classes in Croatia are really not that big, and the lowest and highest social classes, as we mentioned before, rarely live in LHEs. Therefore, heterogeneity in post-socialist countries, now as well as in the socialist period, does not mean that very poor and very rich people live next to

each other, but that LHEs are mostly areas with a variety of people from the working class to the lower and higher middle-class. The social mix in Zagreb's LHEs, the old as well as new, is hence an almost "homogenous" and "familiar" heterogeneity, one that does not stand out because it is not problematic, forced or extreme, unlike in Western LHEs. That is why people perhaps do not even perceive it and have a hard time assessing it when asked in a survey.

These results are in line with the findings of Gulin Zrnić, an urban anthropologist who gathered interviews with the residents of Novi Zagreb (an area dominated by socialist LHEs) and recollected memories of their life in that part of the city. The author expressed that although in their settlement there were all kinds of people (regarding social class, profession, nationality and region in Croatia from which they immigrated), it felt like they are "all alike" (2009, p. 164). Gulin Zrnić explained that this impression emerged through their common experience of moving in and learning to live in a large housing unit, as well as their similar family situation and mutual local neighborhoods. Hence, at the level of perception and experience some kind of "heterogeneous homogeneity" was indeed present, which the old (socialist) system aspired to, and this perception persisted in the new system and estates as well (Gulin Zrnić, 2009).

A similar process could now be taking place in post-socialist housing estates. In the new estates the mean of the perceived homogeneity is, to a small extent, but significantly higher (M (new LHEs) = 3.3, M (old LHEs) = 3.0, t (655) = 3.3, $p < .01$). The explanation could be that in the new estates young people perhaps more often encounter and engage with people with a similar lifestyle (e.g. families with children), or that lower buildings in these estates with fewer apartments per floor/entrance give people the feeling of familiarity and resemblance. These new apartments were mostly bought by residents in a commercial way (through housing loans) and often by young families, which makes them a more homogeneous group than tenants in the old estates. In the new estates participants also on average agree more with the statement that social diversity encourages contact between residents (M (new LHEs) = 3.0, M (old LHEs) = 2.6, t (655) = 4.2, $p < .01$; $r = -.163$, $p < .01$), although again roughly every third participant does not know how to evaluate that statement and neither agrees nor disagrees.

However, it is interesting that in both types of estates there was a medium positive correlation between perceived homogeneity and thinking that social mix encourages contact between residents (r (new LHEs) = .33, r (old LHEs) = .38, $p < .01$). Based on quantitative data only, it is hard to interpret these findings. The nature of this relation should further be investigated through qualitative research, but one interpretation could also be that although people perceive their environment as homogeneous (due to small class differences), in this Croatian context of a non-problematic and long-time-present heterogeneity, they are also tolerant of these differences (e.g. in education, income and place of birth in different Croatian regions) and think that a certain amount of diversity is positive. The data hence confirms the existence of a specific and accepted form of social diversity (social mix) that exists for decades in most housing estates and also in the Croatian society in general. However, it could also be the case that diversity is understood in a way of non-presence of ethnic or national minorities, who at the point of our research were very few and who have been less present in the Croatian society. In the last few years, the situation in Croatia has also been slowly changing, and an increasing share of foreign immigrant workers (primarily from underdeveloped Asian countries like Nepal and the Philippines) come to Zagreb and look for work, and they mostly live in peripheral residential areas. A certain resistance of the local population towards them can be expected, so that similar research could in a few years yield different results. Other than that, in Croatia and other post-socialist countries there has not been any extreme change in the social composition (structure) of LHEs that would generate social problems (like isolation, segregation and ghettoization etc.). Some aspects of the gentrification process and an increase in elite housing are visible in the city center, but such estates and housing locations were not

part of the researched sample. If participants on the contrary did experience some kind of problems with people in their surrounding that are (radically) different from them, they could consequently have a more negative perspective on social mix and in a higher amount notice and state that they live in a heterogeneous estate, which would explain this finding.

An example that differences among residents sometimes do get noticed can be found in the answers to the open-end question *Are there any problems in your estate/neighborhood that particularly bother you?* Some participants reported that their problems are: “Diversity of residents”; “coexistence with ethnic minorities”; “population structure”; “refugees”.

These answers mostly come from residents of the new and peripheral estate Sopnica-Jelkovec, in which there is a higher share of social housing tenants and the Roma minority. In that context, diversity and heterogeneity has a negative meaning for some residents that belong to the majority and implies an undesirable social and residential environment. This situation is present only in a small part of the sampled estates.

5.3. Residential satisfaction

A look at the present level of residential satisfaction and potential residential mobility could take us a step closer to understanding future prospects of the estates and to answer our second research question. Compatible with the research from other CEE countries, in Zagreb’s large housing estates, both socialist and post-socialist, the satisfaction with the dwelling and the estate is relatively high. A comparison of the means on the building level goes in favor of the new estates (M (new LHEs) = 4.02, M (old LHEs) = 3.85, t (655) = 2.8, $p < .01$). That is not surprising, because the buildings in post-socialist estates are younger and better built in terms of materials, while in socialist estates they are older and often poorly maintained. On the estate level, on the other hand, the results go in favor of the old estates (M (new LHEs) = 4.14, M (old LHEs) = 4.26, t (654) = -2.3, $p < .05$). That is also not surprising, because from the urbanistic perspective, socialist estates are well planned and equipped with the necessary infrastructure, while the post-socialist estates are still not adequately equipped, so residents often rely on the infrastructure from neighboring older estates.

According to that, the potential mobility for these two types of estates is presented in Table 1. The participants that stated having plans to move in the next two years were named *springboarders* (like in Herfert et al., 2013; Musterd & van Kempen, 2007), while the ones who want to move, but do not have the possibility were considered *trapped residents*, and the ones that answered that they do not intend to move *stayers*.

Table 1. Potential residential mobility in old and new LHEs²

| | socialist LHEs | post-socialist LHEs |
|--------------------------|----------------|---------------------|
| <i>springboarders</i> | 9.8% | 16.5% |
| <i>trapped residents</i> | 11.6% | 7.5% |
| <i>stayers</i> | 78.7% | 76.0% |

$X^2(2, N = 643$ (98% of total sample)) = 8.4, $p < .05$

Source: *own compilation*

It stands out that the great majority of participants are *stayers* (78.7% in the old and 76.0% in the new estates), which is compatible with high residential satisfaction in these estates. The percentage of *springboarders* (9.8%) is in the socialist estates somewhat lower than in the research of Kovács and Herfert (2012) and Herfert et al. (2013), but higher than in Musterd and

² Percentages are calculated from total number of participants who answered the corresponding question.

van Kempen (2007). The higher share of *springboarders* in new estates (16.5%) compared to the old estates can be explained with the fact that the population of these estates is younger and therefore also in a higher percentage in a life stage where they still search for more permanent housing solutions (in the new estates there is also a higher share of tenants, which is in Croatia considered as a transitional and somewhat undesirable phase in the housing career). The smaller share of *springboarders* (and higher share of *trapped residents*) in the old estates could also be conditioned by their lower income, and therefore lower mobility possibilities.

The percentage of *trapped residents* in socialist LHEs (11.6%) is in our sample somewhere between the estimate of Musterd and van Kempen (2007) and Herfert et al. (2013), yet actually not quite, because we still cannot conclude that these participants are also unsatisfied with their living situation. To test whether these three groups of respondents differ in terms of satisfaction, we conducted the Kruskal-Wallis tests (a non-parametric test because of large differences in group sizes) for both types of estates and both residential satisfaction variables. In post-socialist estates the three groups' means were significantly different only considering satisfaction with the estate ($X^2(2) = 9.4, p < .01$). Post-hoc Mann-Whitney tests showed that, not surprisingly, *stayers* are most satisfied ($M = 4.2$) and statistically different from the *trapped residents* ($M = 3.8, p < .017$; Bonferroni-correction), while these two groups do not statistically differ from *springboarders* ($M = 3.9$). On the other hand, in socialist estates these groups differ by their satisfaction with the building ($X^2(2) = 13.3, p < .01$). *Stayers* are in our sample again the most satisfied ($M = 3.9$), then the *trapped* ($M = 3.8$), and the least satisfied are residents who plan to move – *springboarders* ($M = 3.4$). The difference is significant between *stayers* and *springboarders* ($p < .017$). These results indicate that in order to keep residents and make them feel less “trapped” in the old estates the regeneration should primarily focus on maintenance of buildings, while the post-socialist estates should improve on various aspects of the estate (e.g. infrastructure, public transport, public spaces, green spaces etc.). Nevertheless, even the least satisfied groups cannot be considered unsatisfied, due to still high satisfaction ratings.

Conclusion and final remarks

The topic of social mix has a completely different meaning in large housing estates of post-socialist countries from that in Western and Northern European societies. The line of critique concerning this concept in academic circles is mostly based on its history as a political concept with policies that could not solve the social problems generated by segregation in Western societies. When, on the other hand, housing researchers in CEE countries write about this concept and refer to it as a “good” characteristic of LHEs, they thereby mean that large post-war housing estates host a variety of social classes, especially working and middle-classes, which is a legacy of egalitarian socialist societies as socially mixed societies. This is still a housing standard in CEE and Croatian post-socialist cities. Although in this paper the term “social mix” was adopted, due to its usage by other post-socialist authors, given the different context in CEE post-socialist and Western and Northern European LHEs, and given that not promoted policies, but mostly the social composition of the estates was analyzed, the issue discussed here could essentially also be labeled as ‘social heterogeneity’.

Our research showed that the social composition in Zagreb's large housing estates, old as well as new, is still mixed, with mostly working and middle-class residents, with no pronounced differences in social class. Such a mix was created as a model in the former state, as a planned housing policy mostly for the industrial and to a lesser extent the tertiary sector. Since there were no sudden changes in the demographic composition and no heavy inflow of migrants, this “mild social mix” could also be perceived by the residents as some kind of

homogeneity or familiarity that guarantees peaceful coexistence of various local residents who are living in these estates. The long-term acceptance of it lies hence in the fact that the inhabitants are diverse, primarily in terms of income, education or place of birth, but are still not too different, because extreme differences could create problems or conflicts between groups.

In comparison with post-socialist housing estates in Zagreb, the most noticeable difference is that the population of the older estates is aging. In order to keep the younger and wealthier residents in these estates, and therefore also to maintain the present social mix and heterogeneity, it is important to regenerate the older estates, mostly at the level of multi-family buildings with which the *springboarders* are significantly less satisfied than residents who want to stay in the estates (*stayers*), but also at the level of the estate as a housing unit and environment. Generally speaking, age is an overlooked aspect of social mix that should be further researched, because a different composition in terms of the residents' (and the estate's) age gives a neighborhood a totally different social dynamic. A higher share of elderly residents in the older estates could also, as discussed in the theoretical part, enhance the challenges in maintenance of socialist buildings because of their lower SES (primarily lack of economic resources). The age of the estate, as well as the age of the residents (Gorczyca & Grabiński, 2018; Kabisch et al., 2022), could lead to more intense deterioration over time, which can in the future cause a reduced attractiveness of these estates and raise the amount of *springboarders* (to the level in other CEE countries (Kovács and Herfert, 2012; Herfert et al., 2013)). Therefore, at the level of urban policy and the regeneration process, the satisfaction of this segment of population should especially be taken into account, as it can make a difference in the loss of the existent social mix. With the increase of the number of such dissatisfied residents, the share of those who want to move out of socialist estates also increases. Thus, the regeneration of the old estates driven by the state and cities can influence a more favorable and attractive residential environment, which would retain a larger number of residents.

Although Zagreb is here taken as an example, mostly because of the comparison with older Croatian studies, it is expected that similar results occur also in other Croatian (Split, Rijeka, Osijek) and some other CEE post-socialist cities (Ljubljana, Beograd, Sarajevo etc.).

Nevertheless, we can conclude that the future of large socialist housing estates in Zagreb could, in a combination with proper regeneration policies, all in all be bright, despite the mentioned potential bad circumstances for the residents in the future. Residents are currently mostly satisfied with their buildings and estates, and the vast majority wants to keep on living there. The results show a low level of potential residential mobility, which implies the residents' moderate adaptation to the estates in which they already live. This phenomenon has its local circumstances and causes mainly in the process of the *giveaway privatization* from the beginning of the 1990s, when the residents became owners and mostly *stayers*.

In the end, some questions concerning a deeper understanding of social mix in Zagreb's housing estates – the dynamic and interaction between different age groups or classes with different lifestyles, which should then lead to positive outcomes described in theory – were left to further be investigated by qualitative research.

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