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Challenges for large housing estates in light of population decline and ageing: Results of a long-term survey in East Germany

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A B S T R A C T

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Large housing estates are an important part of the built environment worldwide. They provide residence for millions of people. Within Europe, the debate surrounding such estates is largely concerned with social decline. During the last two decades, many large estates in Germany have experienced striking changes related to a declining and ageing population as well as housing conditions. Trends towards urban shrinkage have caused new challenges for urban and neighbourhood development. Induced by the post-socialist transition after 1990, former East German estates, in particular, had to face far reaching changes related to outmigration, decreased demand for housing and infrastructure as well as an overall ageing of the population. Set against this background, questions about the future potentials of these estates go beyond social decline. Instead, the impact of demographic change and questions of long-term demand gain importance. Therefore, in this paper, we focus on how a declining and aging population impacts upon the composition of the population within a particular estate. Additionally, we are interested in how the residential satisfaction in the estate has changed over time and which target groups are attracted to the estates. This paper discusses these questions by using results from a unique sociological long-term survey carried out over 30 years in a large housing estate in Leipzig, eastern Germany. We show that rapid social decline has not yet been an issue in the estate, and residential satisfaction has grown and reached high levels among remaining residents. However, demographic characteristics have changed tremendously. This study found that social and demographic shifts are interwoven, so that the extent to which this stability can be maintained in the future is presently unclear.

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Introduction

In this paper, we contribute to the discussion about the challenges and potentials of large post-war housing estates that are an important part of the built urban environment and provide housing for millions of people. Particular attention will be given to demographic features like declining, and ageing population. Until now demographic change has received little attention in the debate on large housing estates in Europe in comparison to social decline. This topic is embedded in the urban shrinkage discussion which only entered the research agenda on different urban trajectories recently. The situation of housing estates in Europe differs very much between western European countries and former eastern European socialist countries. The political goals behind their construction, the diversity of ownership structures as well as the quantitative scope of

this neighbourhood type provides the background for diverging pathways of such estates. By focusing on the German context, we can describe how large housing estates in eastern Germany cope with the consequences of the political change after German reunification. This particular background caused accelerated dynamic demographic changes which create so far un-known challenges for housing estates. Population decline, due to severe outmigration and subsequent ageing of the population, lead to unexpected and fast evolving demographic imbalances. This will be exemplified by using case-study results from a sociological long-term study carried out from 1979 until 2009 in the large housing estate of Grünau in the city of Leipzig.

After this introduction, we present a brief review of pathways of large housing estates in Europe and the demographic challenges they face. The next section describes the eastern German context. Subsequently, we introduce our case study including the methodological design. We then present major results about the extent and consequences of a declining and ageing population. Finally, we discuss the findings and draw conclusions.

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Pathways of large housing estates in western and eastern Europe

Large housing estates are a global phenomenon (e.g. for European countries: van Kempen, Dekker, Hall, & Tosic, 2005; Musterd & van Kempen, 2007; Rowlands, Musterd, & van Kempen, 2009; for Central-Eastern European countries: Neugebauer, Wiest, & Krupickaite, 2011; for South Korea: Ha, 2008). In Europe, large housing estates built after World War II by industrial construction methods were dedicated to reducing the housing shortage and providing high standard housing for middle and low income groups. They are also referred to as mass housing, high rise housing, or social housing estates, depending on the local and national context.

The development of large housing estates followed various paths throughout Europe. Before 1989, as a result of a divided Europe, large housing estates in the state socialist countries were built to counter housing shortages and used as political signs of progress in society. One of the main objectives was the provision of well-equipped apartments, sufficient infrastructure and service facilities for a large segment of the population belonging to a variety of social strata, in line with the socialist vision of homogeneous housing conditions (Hannemann, 2000a, 109–112). In contrast, in western Europe, large housing estates were built to provide lower to middle income households with good housing conditions and to overcome housing shortages (Power, 1999). The dissatisfaction with the unfulfilled promises of a “new urbanity” in those estates grew and as a consequence, affluent people left the estates. Afterwards, people with less choice, in particular immigrants, moved in as reported for many western European estates (Andersson, Musterd 2005; Wassenberg, 2006). The estates became increasingly socially stigmatised as social housing areas for low income and deprived groups.

A similar occurrence of social decline was expected for eastern European estates after the fall of the Iron Curtain (Szelenyi, 1996; Sailer-Fliege, 1999). It has now become clear that this is yet to occur. Rather, a quite differentiated picture of the development of large housing estates has evolved, mixed social structures have survived. In many regions in eastern Europe, estate housing is still appreciated by a variety of socio-demographic groups. One major reason is the privatisation of individual apartments. In the 1990s, a large part of the apartments was sold to the residents. Another reason for social stability is the lack of alternatives and the persistent shortage of housing, so that choice for affluent households is limited. Moreover, the suitable residential conditions and infrastructural facilities make housing estates places of choice (for an overview, see Dekker & van Kempen, 2009; Kovács and Herfert (2012); for the Czech Republic, see Temelová, Novák, Ouředníček, & Puldová, 2011; for Hungary, Bulgaria, Lithuania, see Neugebauer et al., 2011; for Estonia, see Kährik & Tammaru, 2010).

Demographic challenges for large housing estates

Besides social characteristics, the issue of demographic change gained importance in urban research recently. Its effects influence present and future urban development, especially the housing sector, in a so far unknown intensity, scope and pace. Residents have grown older, birth rates have dropped, residents have moved from one place to another, household structures alter – all these population trends become visible at the city level, which can be observed Europe-wide and globally (Haase, Steinführer, Kabisch, Grossmann, & Hall, 2011; Kabisch et al., 2008; Martinez-Fernandez, Kubo, Noya, & Weyman, 2012). They are used as prior indicators to describe urban shrinkage (Rieniets, 2009; Rink, Haase, Grossmann, Couch, & Cocks, 2012). Statistical analyses show, that 165 out of 310 European cities with more than 200,000 inhabitants have been declining in the period of 2000–2005, especially in the post-socialist realm

(Turok & Myknenko 2007, 169, 179f.). Many eastern German cities are prominent examples here experiencing an enormous loss of population in the course of the political change and the German reunification (Rink, 2011). The population decline is closely connected with ageing caused by low fertility rates and increasing life expectancy. The mass outmigration of younger age groups fosters ageing in the source areas. This development causes an imbalance in the age structure within the local residents which has serious consequences in regards to infrastructure facilities and services, housing needs and/or municipal duties (Steinführer & Haase, 2007). These impacts on the city level affect residential districts as well. Consequently, estates need to adapt to the resulting changes in the demographic structure of the residents and their respective needs. Thus, it is necessary to consider large housing estates as estates with “multiple faces of development, change and response” as Rowlands et al. (2009) titled their book. How the challenges existing in large housing estates are being met in the German context will be discussed in the next section.

Specifics of eastern German large housing estates

In Germany, large housing estates encompass 1.6 million apartments, which correspond to 7.3% of the entire housing stock (Liebmann, 2004, 45). The ten largest estates are all located in eastern Germany; the largest is Berlin-Marzahn, with 60,000 apartments (Liebmann, 2004, 46). Leipzig-Grünau, the estate this article is focused on, is the third largest in the country. Whereas every fourth person in eastern Germany lives in a large housing estate, only every 60th western German belongs to this category (Hannemann, 2000b, 97).

The socio-demographic structures of western and eastern German estates differ remarkably. During the last decades many western German estates followed the path of western European estates, in terms of social decline and stigmatisation. Those in eastern Germany were highly appreciated until the political changes of 1990. Because of a substantial housing shortage, residents from all social strata and age groups tried to obtain this kind of apartment. According to the state-socialist vision of the “socialist family as smallest nucleus of the socialist society” (Hannemann, 2000a, 113), predominantly young families were allocated to the newly built estates. This decision generated a succession of problems. Whereas, during the first years, there was a lack of kindergartens, some years later, a lack of primary schools emerged, etc. The so-called “demographic wave”, in terms of synchronous aging of the estate and its residents over decades, is one of the reasons for the current demographic imbalances.

The situation changed fundamentally after German reunification in 1990, due to massive private and public investments in the eastern German housing stock from state and federal programmes, as well as from EU programmes. As a result the housing stock increased because of new housing construction and extensive refurbishments. A broad and, until then, unknown spectrum of attractive residential housing stock emerged. Despite significant investments in large housing estates, many residents left the estates. This was only partly related to housing preferences. Growing unemployment rates also forced people to move to economically more prosperous regions in western Germany. Between 1990 and 2002, eastern Germany lost around one million inhabitants, which strongly affected the housing market (Rink et al., 2012). The immense loss of residents within a very short time period caused high vacancy rates with consequences for many housing enterprises and cooperatives, related to the risk of insolvency. Policies for housing demolition were developed and a state-financed programme called “Urban Restructuring East” was established in order to re-balance the housing market (BMVBW, 2001). The main focus of

the €2.5 billion programme was on the demolition of 350,000 apartments between 2003 and 2009, to regain supply–demand equilibrium. The demolition activities have been concentrated in large housing estates, for normative and practical reasons (for more details see: [Bernt, 2009](#)). These measures have been combined with additional efforts to upgrade and improve the housing environment of the remaining stock ([Kühn & Liebmann, 2007](#)). The adaptation to a smaller number of residents has led, in many places, to an improvement of the housing conditions, especially through reducing the density of estates, reconstructing existing buildings, and the transformation of empty spaces into green areas.

In order to obtain detailed insights into one large housing estate, we will present selected results of a sociological long-term study conducted in Leipzig-Grünau in eastern Germany.

Characteristics of the case study area Grünau in Leipzig, eastern Germany

The large housing estate Grünau is part of the city of Leipzig, located 150 km south of the German capital Berlin in the eastern part of Germany. Leipzig is the 12th largest German city with 522,883 inhabitants and 315,940 apartments ([Stadt Leipzig, 2011, 18, 95](#)).

Between 1976 and 1989, the large housing estate, Grünau, was built with approximately 38,000 apartments for 85,000 residents, 17% of the total population of Leipzig. It is situated at the western fringe of the city and extends over an area of 10 km². The entire estate is divided into eight quarters, so-called housing complexes, with infrastructural elements in each complex, such as supermarkets, schools, and kindergartens, as well as service facilities for several residential groups. In the core area of the estate a large shopping and entertainment centre was opened in 1996.

During the construction phase the number of residents grew continuously. However, this number has decreased markedly since 1990 in the course of the reunification of Germany. Alone during the 1990s, when the city of Leipzig lost around 75,000 inhabitants. Accordingly, the number of residents in Grünau decreased from 85,000 to around 60,000. This trend has continued and in 2009 the number of residents was approximately 45,400 ([Fig. 1](#)), which represents a loss of 47% in just 20 years ([Stadt Leipzig, 2011, 222–223](#)). The share of population living in Grünau dropped from 17% to 8% of the total population of Leipzig.

As opposed to other eastern European countries, the housing market of Grünau is predominantly a rental market. Given that rental housing is dominant in the overall city as well – and in

Germany in general – it is also not comparable to social housing in western Europe. Whereas during the 1970s and 1980s, cooperatives and the municipal housing company allocated the flats according to state-socialist premises, flats now are offered by a variety of housing enterprises. In 2009, seven housing cooperatives, five national and international private housing companies, and the municipal housing enterprise act as landlords in the estate.

Long-term observation of the residents' perception

Simultaneously with the start of the construction of an entire new housing district in 1976, the idea of an accompanying sociological long-term observation was born ([Kahl, 2003](#)). By means of a repeated questionnaire survey, the growth and the maturation of a residential area under construction was to be observed and described from the perspective of the residents. The first survey was launched in 1979, the ninth in 2009 ([Table 1](#)). In comparison to other studies that provide a snapshot of the conditions in housing estates, including time-specific perceptions (e.g. [Neugebauer et al., 2011; Restate, 2002–2005](#)), the long-term observation provides evidence about persistent and changing perceptions and evaluations of the housing conditions and the well-being in the large housing estate. Aside from its long duration, an additional value of this study is the inclusion of the impacts of the political changes that occurred during the transition from state socialism to a market economy after 1990.

The core of the sample consists of fixed addresses, not a fixed number of households. The addresses are distributed over the entire estate. The size of the sample has grown from survey to survey, due to the growth of the estate. Since 1992, the internal differentiation caused by the diverse owner structure, first signals of small-scale social fragmentation, and the demolition of blocks led to the decision to enlarge the sample size further. The addresses were selected according to the following criteria: built structure (5–16-storey blocks), flat size, housing enterprise, state of refurbishment, and location of buildings.

The questionnaire encompasses a number of constant indicators throughout the years that relate to housing satisfaction, perception of the estate, and place attachment. The questionnaires were distributed and recollected by trained assistants. The relation of distributed vs. returned analysable questionnaires remained steady at about 80–90%. These results provide proof that the Grünau respondents used these surveys as a vehicle for expressing their evaluations and opinions about the estate ([Kabisch, 2005](#)). The check for representativeness revealed a very high correspondence

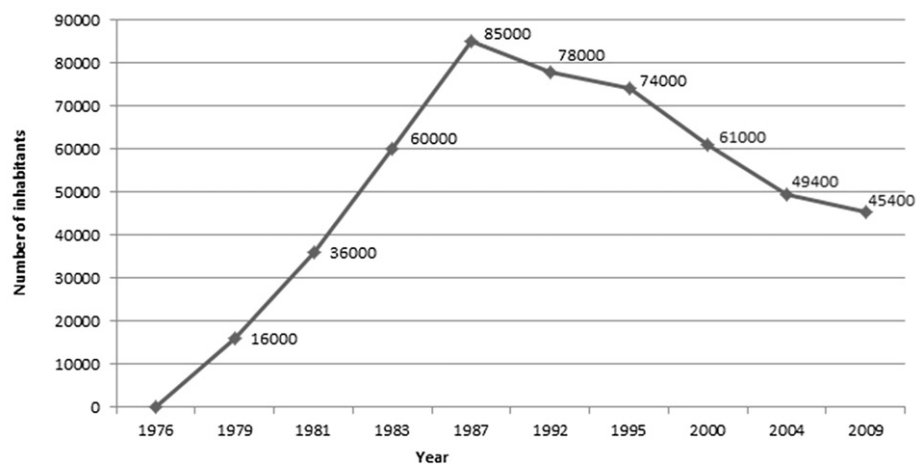


Fig. 1. Population development 1976–2009 (year specification refers to the nine surveys).

Table 1
Sample size and rates of questionnaire returns in the nine surveys 1979–2009.

No.	Year	Sample size	Returned questionnaires (%)
1.	1979	310	94
2.	1981	578	92
3.	1983	346	92
4.	1987	330	88
5.	1992	415	85
6.	1995	466	82
7.	2000	560	83
8.	2004	672	79
9.	2009	710	80

Sources: Kabisch and Grossmann (2010, 4); Kahl (2003, 68).

between the sample and the official statistics relating to the age structure of the estate (Kabisch & Grossmann, 2010, 11).

Research results

The results of the long-term study mirror the internal development of this large housing estate. In this sub-section, we will assess the following issues:

1. How do a declining and aging population affect the composition of Grünau's population?
2. What are the major changes in residential satisfaction in the estate?
3. For which target groups is the estate an attractive residential area?

Main current socio-demographic trends: declining population and ageing

During its more than three decades of existence, the estate experienced two opposed developments. Whereas from 1976 until the end of the 1980s, a continuous growth of the population could be observed, after the 1980s a continuous decline was dominant (Fig. 1). The entry of residents followed the stepwise completion of 38,000 flats in 1989. The preferred allocation of flats to young families with children led to an above-average share of younger age groups. Almost 50% of the respondents in 1979 were younger than 35 years (Figs. 2 and 3).

In 1979, the year of the first survey, the proportion of residents 55 years and older was only 10%. The results of the following three surveys show that the share of older residents remained small and the share of the middle-aged group (35 to <55 years) increased slowly. These statistical numbers confirm the still prior distribution of apartments to young households and how settled the residents who moved in the estates in the first years feel.



Fig. 3. Young families in Leipzig-Grünau. Photo: Göbel 1979.

After the survey in 1987 the picture changed completely. The housing construction activities have been completed and the influx of new residents stopped. Simultaneously, the political change started, new opportunities concerning housing offers arose, but also new suddenly exploding unemployment rates occurred. Mostly younger people moved out to prosperous regions in western Germany in order to find a job or a training place. For the age group younger than 35 years, it is remarkable that, between the surveys in 1987 und 1992 – the Iron Curtain opened in 1989 – its share diminished from 37% to 20%. This is a clear indicator for the forced out-migration of this age group, which continued during the following years. The outmigration process has been additionally accompanied by a sudden drop of the fertility rate, which increased population decline on the one hand and aging on the other. The survey results in 1992 show a 23% share of the age group 55 years and older which indicates a rapid increase of this group. In 2004, this age group became the largest group, and in 2009, a new peak of 60% and a serious imbalance in the age structure of the population of the estate was reached. One of the new features gaining importance is the increasing number of deaths, which will influence the decline of the population in future (Stadt Leipzig, 2012, 39).

The ageing of the population is also connected with a change in household structures. Whereas, in the 1980s, households with three, four, and more persons dominated, one and two person households are commonplace today. This is again a consequence of the declining and ageing trends in the estate. Adult children left the apartments of the parents, married couples became widows or widowers. The results of the surveys from 1992 onwards show that the number of smaller households is increasing remarkably. Until the 2009 survey the share of one-person-households tripled to 32%.

The dominance of single households is an overall trend in large cities. The comparative data for the city of Leipzig clearly exceed the values for the estate: in 2009 the household structure in Leipzig consisted of 55% one-person, 30% two-person, 10% three-person, and 5% larger households (Stadt Leipzig, 2011, 27). Despite the immense increase of the share of small households in Grünau, there are still a large number of households with children. Nevertheless, whereas in the 1979 survey, only 20% of the respondents lived in households without children, this number increased to 77% until 2009. Closer examination of the dynamics of this change over 30 years reveals the fact that the share of households without children remained more or less stable at the low level until the end of the 1980s. But afterwards this household type grew rapidly (1992: 51%, 1995: 60%, 2000: 69%, 2004: 71%).

Until today – and given the enormous outmigration, this comes as a surprise – there is no obvious social decline of the estate. With

Age groups of the sample

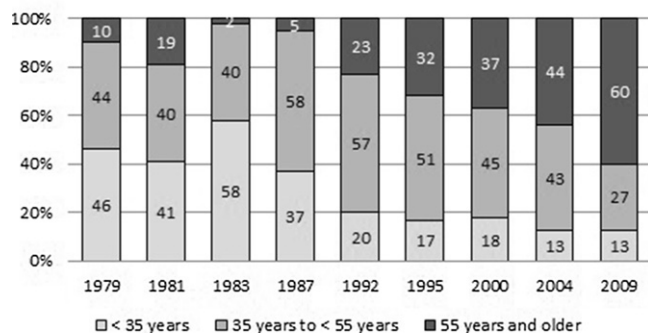


Fig. 2. Development of the age structure of the respondents.

respect to the level of education of the respondents which is the only indicator which provides comparable data over the nine surveys, there is no problematic change in terms of a concentration of less educated residents. Skilled workers define the population (around 50%) (Fig. 4). Residents with university and technical college degrees make up the second largest residential group (around 40%). Nevertheless, those residents with a high level of education and corresponding incomes belong to older age groups that have lived in Grünau for 20 years and longer. The socially mixed composition of households is thus closely connected to the age-structure of the estate. Therefore, demographic and social criteria must be considered together in order to explain the present status and – even more importantly – the future prospects.

In sum, with regard to the first research question, declining population and ageing impact strongly the composition of the population. The smaller population number is dominated by a high share of elderly residents and of smaller households. The distinctive causes are, firstly, the one-sided distribution of flats to young families in the 1970s and 1980s, with its long-term consequences related to the large share of population in older age groups today. The second reason is the forced outmigration of younger residents because of a lack of jobs. The outmigration did, however, not lead to an overall fall of social status.

Dynamics of residential satisfaction

Considering the declining number of population in Grünau since 1987, an on-going decrease in residential satisfaction could be expected. But the results of the long-term study provide another picture. The indicator used in each survey from 1979 to 2009 (“Do you feel comfortable in Grünau?”) illustrates a wave-like pattern (Fig. 5). When the residential area was really new, the first residents evaluated the housing conditions as very good (1979 and 1981). Residents perceived it as a real improvement of their housing conditions. For the first time, they had the opportunity to occupy an apartment with amenities like a modern bath room with running warm water, a balcony, and a modern kitchen.

In spite of the weaknesses of the estate, in particular the absence of technical infrastructure (e.g. streets and pavements in construction) and the necessity to create many provisional facilities (Fig. 6), residential satisfaction was very high.

In the second half of the 1980s political pressure and austerity measures concerning enforced housing construction lead to lower quality of newly constructed complexes (Eichhorn, 1997, 20). High block density, six-storey buildings without elevators, and the increasing delays in the completion of streets and service facilities, including the promised district centre and public indoor swimming pool lowered the satisfaction of residents already before the

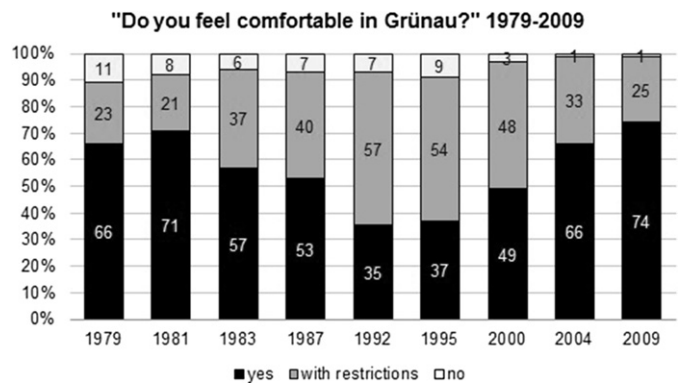


Fig. 5. Responses to the question: “Do you feel comfortable in Grünau?” – a comparison of the nine surveys.

political changes of 1989. After the fall of the Iron Curtain the dissatisfaction bottomed out. State-funded programmes started in the second half of the 1990s were used to upgrade the estate. For instance, the promised district centre and the indoor pool were opened.

However, at the same time, the very new phenomenon of housing vacancy occurred, caused by the heavy declining number of residents. The vacancy rate increased up to 30% in some parts of the estate. Taking into account that in the overall city of Leipzig the vacancy rate also reached 25% in 1997 (Rink, Haase, Bernt, Arndt, & Ludwig, 2011), the excess housing was so immense that a repopulation of the estate seemed rather unrealistic. Under the guidance of the municipality, development plans were elaborated for the estate, in order to achieve participation in the new, state-financed programme “Urban Restructuring East”, to obtain financial support for demolition activities. Altogether, about 7000 empty apartments were demolished between 2001 and 2007. After the demolition, further upgrading efforts directed at creating green spaces or playgrounds were made (Figs. 7 and 8). The residents acknowledged the improvement of the overall housing conditions and confirmed their decision to stay in the estate (Kabisch, Bernt, & Fritzsche, 2005; Kabisch & Grossmann, 2010).

The high housing satisfaction of respondents in the surveys in 2004 and 2009 can be interpreted as an appreciation of on-going improvements and maintenance activities in the estate and signals strong place attachment. The major component of housing satisfaction is the residents’ quite high appraisal of their own flats, including affordable rents. Even in the years of transition after the political change, at least half of respondents confirmed that

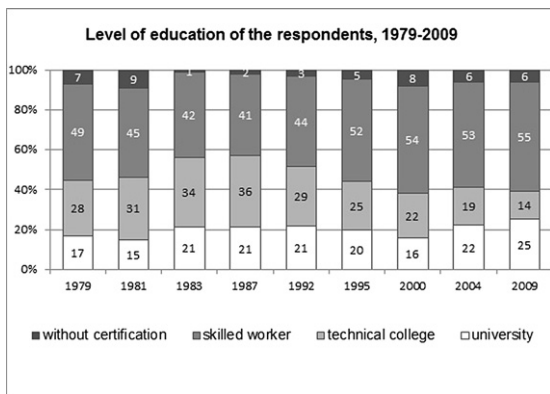


Fig. 4. Level of education of the respondents in the nine surveys from 1979 to 2009.



Fig. 6. Leipzig-Grünau in Summer 1979. Photo: Göbel.



Fig. 7. Demolition of a large block, 2008. Photo: Kabisch.

they were fully satisfied with their own flat (Kabisch & Grossmann, 2010, 38).

Furthermore, the detailed analysis of the reasons for this high estate satisfaction showed that it relates to the excellent infrastructure and the high quality environmental conditions inside and adjacent to the estate in particular to the green and quiet environment, as well as to the pedestrian-friendly design (Fig. 9). The respondents appreciate the kindergartens, playgrounds, and the proximity and variety of schools. Remarkably, both pensioner households and households with children express a high evaluation of the housing conditions. They stress the convenient amenities of the residential area, a pensioner-friendly atmosphere as well as the family-friendly appearance. Negative aspects are mentioned less often and relate mainly to social tension.

To sum up, the answer to the second research question is that housing satisfaction saw two peaks, one in the early years and one today, with a low point in the early years of transition. Whereas the first peak was mainly based in the appreciation of the flats and their relatively high comfort, today place attachment, infrastructure, and the quality of open spaces lead to a new peak in residential satisfaction. Thus, heavy public and private investments in the estate, as well as residents' engagement, turned the most criticised features of the estate during the 1980s and the early 1990s into today's base of residential satisfaction. As a consequence, housing satisfaction has reached a new high.



Fig. 8. Use of the resulting open space as a green area, 2009. Photo: Kabisch.

Residents' attraction to the estate

The greatest challenge for the estate is to halt population loss. Due to the decline of population and the advanced ageing described above, it is crucial to stabilise the population and to attract newcomers. But for whom could Leipzig-Grünau be attractive as a residential area?

The diverse housing enterprises pursue different strategies. These range from low rent housing offers for welfare dependent and low income households to housing offers for middle- and high-income households. In the latter case, some enterprises have undertaken measures to upgrade the apartment, for example, by reshaping them according to the wishes of newcomers. Thus, the large housing estate offers a variety of types of housing. The findings of the recent 2009 survey show that 44% of all respondents had already moved to another apartment within the estate, at least once during their residence in Leipzig-Grünau. Obviously, these households could adapt their housing conditions to their changed needs without leaving the estate. The main reasons for inner estate relocations have been changed household compositions. Considering the ageing of residents, this means that households can find appropriate apartments within their well-known housing area.

This result points a strong place attachment, especially of the long term residents in Leipzig-Grünau. In the 2009 survey, 57% of respondents had lived in Grünau for 20 years and longer. 20% of the respondents had moved in during the last ten years, 15% during the last five years. Thus, in-migration also occurs. Although the number of newcomers currently does not totally balance the number of out-migrants, there are first signals indicating that a halt in the population decline is occurring. Within the newcomers, there is a group of re-migrants. These are residents who lived in the estate years before, as children or younger adults. After they had moved out to another housing location, they now returned to the estate. For them, family relations, and friendship networks are important priorities.

All newcomers stressed that the main reasons for choosing an apartment in Grünau were comparatively low rents for acceptable flats, existing social networks, and the attractiveness of the estate with regard to greenery, social services, and infrastructure offers. Concerning the demographic characteristics, they are on average much younger than the other residents and the proportion of households with children is larger. Additionally, the percentage of single parents is relatively high. With respect to the third research question, these results underline that a variety of households is attracted to the estate, in particular households with children. Thus, the in-migration tendencies support the achievement of a more balanced age structure.

But among newcomers, average household income is lower and unemployment rate is higher. This contributes to social differentiation between the settled, more affluent residents and newcomers with lower income. The different allocation strategies of several housing enterprises foster the internal socio-spatial fragmentation (for a detailed discussion see Grossmann, Kabisch & Kabisch, 2012).

Discussion

The paper pays attention to the impact of population decline and ageing on a post-socialist large housing estate. This issue is so far neglected in the international debate. The main concern of the literature on the development of post-socialist large housing estates focuses on the risk of social decline, as discussed above. Without any doubt, this remains an important topic within the debate on the future development chances of large housing estates. Our case study confirms the results of Kährlik and Tammaru (2010), Kovács and Herfert (2012), and Temelová et al. (2011) that rapid

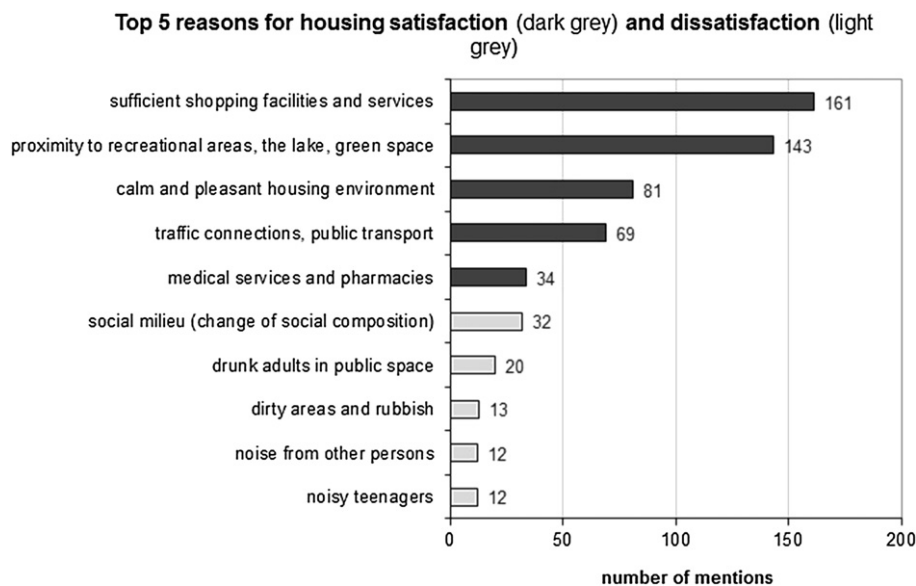


Fig. 9. Top-ranking features of housing satisfaction and dissatisfaction in Leipzig-Grünau in 2009.

social decline has not yet been an issue in post-socialist large housing estates. The social composition is remarkably stable, especially given the extreme context regarding to the political change in eastern Germany. This stability has been caused by the place attachment demonstrated by the generation of the estate's first inhabitants, living in this estate since 20 years and more, as is also reported for western European estates by Dekker and van Kempen (2009). These are households of mixed social status who have recently entered, or are about to enter, retirement. They determine the ageing process in the estate, ask for appropriate and adapted residential conditions and raise their voice in terms of representing their estate. To what extent this stability can be maintained in the future is presently unclear. It depends on the number and the social as well as demographic composition of younger households who will in-migrate and stay in the estates.

This brings us to three summarising points:

- i. Post-socialist large housing estates do not inevitably follow the pathway of social decline. What our results show is that the path dependencies in the development of large housing estates, their specific advantages and challenges depend heavily on the local context and circumstances. Whereas most studies on post-socialist estates address the question of privatisation of individual flats and take this as a factor that contributes to residential stability, in our case, this stability is caused by residential satisfaction and the place attachment of long-term residents who live mostly in rented flats. Further, it also differs from the social housing system of many western European estates. Thus, our results confirm that residential satisfaction and place attachment can occur in large European housing estates across national contexts and despite the variety of tenure structures.
- ii. Social and demographic features are closely interlinked and need to be considered in a combined manner to evaluate the future prospects and potentials of large housing estates. For many estates, demographic change is a new challenge. Since post-socialist cities have been hotspots of urban shrinkage in the 1990s and 2000s (Kabisch, Haase, & Haase, 2012), demographic imbalances, ageing and population decline are likely to become pressing topics in other post-socialist estates, too.

- iii. Our long-term observations over 30 years allow for insights into the changing fortunes of a large housing estate. They shed light on the diverse strands of development and avoid short-sighted pitfalls in the interpretation of recent developments. As we have pointed out, the shrinking process in terms of loss of residents is not only a sign of overall dissatisfaction of residents who leave the estate. The estate today still has to cope with the long-term consequences of the one-sided distribution of flats to one selected age group which overlap with the short-term impacts of German reunification and the subsequent political change.

Conclusion

Declining and ageing population numbers are characteristics of urban development worldwide, especially in shrinking cities. They will become increasingly important according to demographic prospects. Because of the mass concentration of population in large housing estates, they are in particular affected by population fluctuations. Thus increased attention to demographic issues has to complement existing research concerns. Demographic shifts are part of urban dynamics, which also affects this type of residential area. A wide range of adaptation efforts will become necessary to balance existing housing conditions and the changing needs of households including, like in our case, demolition of vacant blocks and subsequent upgrading measures. Even though the context of the Leipzig-Grünau case is quite specific, we can conclude that, because of the scope of this type of housing, especially in post-socialist cities, large housing estates will remain an important component of cities. To utilise their potentials in a comprehensive sense, future development strategies should ascribe demographic processes like ageing and decline of population a prominent position.

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