The role of civic amenities in the residential satisfaction in apartment-housing localities of Prague

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ABSTRACT
This article employs the quantitative research of residential satisfaction in two localities in Prague with different civic amenities. The results show that the presence of civic amenities in the neighbourhood has a significant effect on residential satisfaction, which is comparable to the importance of the quality of housing and the perceived quality of the neighbourhood. The relationship between the presence of civic amenities and residential satisfaction is affected by differences in the perceived importance of amenities between the residents of housing estates and suburbs, and by the position of households in the household life cycle.

KEYWORDS
residential satisfaction; civic amenities; Prague; housing estate; suburb

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## 1. Introduction

Accessibility and quality of civic amenities in neighbourhoods are often pinpointed as an important component of residential satisfaction in general (Lovrich, Taylor 1976; Lu 1999; Dekker et al. 2011). Nevertheless, it is essential to be aware that dissimilar households demand different service utilisation, or they put diverse weights to civic amenities as such. Swindell and Kelly (2005: 709) are properly asking: “What, then, is the relationship between service outputs (distributions) and service outcomes (citizen satisfaction)? No one fully knows the answer to this deceptively simple question.” Therefore, the aim of this paper is to scrutinise so far neglected relations of residential satisfaction components whereas the emphasis is given to the meaning of civic amenities.

– Nowadays, migration attractiveness of Czech capital is reflected in growing densification of housing development as well as its sprawl to the surrounding landscape. While in the urban areas the inhabitants of new residential quarters often enjoy a variety of existing infrastructure such as groceries, social services, or public transport, in Prague’s suburbs, their presence is rather insufficient for the daily use. Therefore, for investigation of the relationship between residential satisfaction and the presence of civic amenities, two new apartment-housing projects of an unequal position towards the compact city have been chosen. To sum up, this paper pursues to answer these questions: How the evaluation of various components of residential satisfaction, mainly with civic amenities, differs according to the different types of households, inhabiting the dissimilarly situated localities of new apartments houses?

– How is satisfaction with civic amenities reflected in overall residential satisfaction in comparison with its other components?

This paper is structured as follows. At first, the concept of residential satisfaction is defined and divided. Attention is mainly paid to relationships between various components of residential satisfaction, civic amenities and residential environment of housing estates and suburbs. Next parts introduce both research localities and explain chosen methods of research and the process of data gathering. The quantitatively focused research rests on the statistical analysis of data from the questionnaire survey. Subsequently, the empirical part is dedicated to the data analysis and interpretation of results, followed by the discussion of the theoretical embedding of the paper. Finally, the above-mentioned research questions are answered in the conclusion.

## 2. Residential satisfaction as theoretical concept

Residential satisfaction is one of the most important elements influencing the satisfaction of human beings with life (Lu 1999; Parkes et al. 2002). It is usually defined as one’s own evaluation of the place of residence and its surroundings that alters according to the unique set of characteristics of households (e.g. Amério, Aragones 1997). However, amongst the authors who deal with this concept, there is neither consensus regarding the components which form residential satisfaction nor on the degree of their impact. It might be the consequence of the fact that residential satisfaction is always partly nurtured by the unique character of a territory (De Hoog et al. 1990; Parkes et al. 2002; Ren, Folmer 2017), differences in population samples, various definitions of used variables or statistical methods of their analysis (Lu 1999; Basolo, Strong 2002).

Residential satisfaction can be perceived as the intersection of many housing or neighbourhood features and individual characteristics of households which unequally influence the satisfaction of inhabitants with their place of residence. Galster (1987) and Lu (1999) distinguish the components of residential satisfaction between (1) housing characteristics, i.e. features of inhabited flat, (2) neighbourhood characteristics, i.e. features of adjoining surroundings and (3) household characteristics, i.e. features of households and their members (Fig. 1).

No less of importance is the division of components between objective and subjective dimension.

![Diagram of Residential Satisfaction Components](image)
The role of civic amenities in the residential satisfaction

(Ámérigo, Aragonés 1997). While the objective components may be quantitatively measured, according to Campbell et al. (1976), residential satisfaction is rather the reflection of subjective perception of living environment that is created by objective characteristics along with features of households and their unique preferences and needs (also Weidemann, Anderson 1985; Lu 1999). Therefore, the relationship between objective reality and subjective evaluation is often weak (e.g. Stipak 1979; Marans 2003; Swindell, Kelly 2005; Dekker et al. 2011).

Hero, Durand (1985) or De Hoog et al. (1990) introduced calculation models of residential satisfaction based on objective components. In these models, for example, satisfaction with safety is substituted by the quantity of offenses that, however, as the objective components does not have to correspond to subjective perception (Basolo, Strong 2002). Similarly, Lu (1999: 268) emphasises that “objective measures of housing and neighborhood attributes alone do not provide an adequate explanation of satisfaction.”

3. Civic amenities in residential satisfaction studies

According to the Czech law, civic amenities are defined as facilities for education, social and health care, culture, administration, retail, sport and spa, accommodation, dining, science and research or transport and technical infrastructure (similarly Musil 1985). However, in a lot of both Czech and foreign papers that deal with residential satisfaction, civic amenities are considered as services and aim for those that are used frequently and by larger groups of population (e.g. Gruber, Shelton 1987; Phillips et al. 2004; Kährik et al. 2012 or Špačková et al. 2016). Therefore, in residential satisfaction research, civic amenities and services may be considered as synonyms.

Accessibility and quality of civic amenities (or services) play a fundamental role in the urban way of life (Parkes et al. 2002) and are often pinpointed as an important component of residential satisfaction in general (Lovrich, Taylor 1976; Ahlbrandt 1984, in Basolo, Strong 2002; Lu 1999; Dekker et al. 2011). Parkes et al. (2002) assert that appropriate services might also contribute indirectly, for instance, by providing a platform for social interaction between inhabitants and, thus, lead to higher satisfaction with social relationships in neighbourhood (see also Hero, Durand 1985; Temelová et al. 2010). However, Swindell and Kelly (2005) asserts that civic amenities as a component of residential quality of the environment is not always clearly reflected in residential satisfaction even though in other views it may have a positive effect (see Fig. 2).

Firstly, Stipak (1979) emphasises that dissimilar groups of inhabitants may have as for civic amenities different demands and expectations which influence the evaluation of their quality. Secondly, different services might contribute to residential satisfaction diversely. For example, Wilson et al. (1995, in Dekker et al. 2011) and Temelová et al. (2010) attribute significance to grocery stores. Thirdly, Phillips et al. (2004) assert that the quality of services plays only a marginal role besides the more significant degree of importance. Forthly, amongst the clinchers of residential satisfaction also belongs awareness about that service inside a neighbourhood (Swindell, Kelly 2005) or one’s own experiences with its utilisation (Gruber, Shelton 1987; Dekker et al. 2011).

Further on, Vackářová (2014: 19) emphasises that “it depends not only on the existence of that facility ... but also on its allocation, quality of transportation network, size of a buffer zone or its capacity.” The connexion between accessibility of civic amenities and residential satisfaction is often further limited by the concept of marginal utility when the occurrence of each additional service in a neighbourhood does not bring the same benefit as the first of them (Vackářová 2014). Similarly, Stipak (1979) notes that higher quality of services may not entail the proportional growth of residential satisfaction.

4. Residential environment of post-socialist housing estates

Regarding housing estates neighbourhoods in post-socialist cities, residential satisfaction is, according to Wilson (1995, in Dekker et al. 2011) or Temelová et al. (2010), connected to the accessibility of services, mainly grocery stores or adequate public transport. Similarly, the residential environment
of housing estates is enhanced by the accessibility of nature (Musterd, van Kempen 2005; Temelová et al. 2010). Although in the quality of public spaces are the post-socialist housing estates usually behind those in Western Europe, in the domain regarding residential satisfaction with civic amenities get on usually better (Musterd, van Kempen 2005).

However, the physical proximity of various kinds of civic amenities often relates to certain drawbacks such as anonymity (Wirth 1938, in Parkes et al. 2002), noise (Musterd, van Kempen 2005; Karsten 2007), the occurrence of untrustworthy individuals (Temelová et al. 2010) or inappropriate environment for children’s leisure in general (Newman, Duncan 1979; Swindell, Kelly 2005). Furthermore, former spaces of retail services might not imply their simple accessibility for the less mobile population.

Housing estates in Prague may presently profit from good accessibility of basic services albeit they became often available after the construction of panel houses had been already finished (Musil 1985). During the last three decades, newly emerged market forces have further contributed to the improvement of civic amenities therein (Temelová et al. 2010; Dekker et al. 2011). Nevertheless, the local housing estates even presently often lack civic amenities related to cultural life and leisure in general (Musil 1985; Havlíčková 2015) or the sufficient capacity of kindergartens or primary schools (Maier 2003).

5. Residential environment of post-socialist suburbs

The intensive process of suburbanisation of Prague which has taken place since the second half of the 1990s brings besides movements of the population also several problems with local infrastructures (Kährik et al. 2012; Špačková et al. 2016). This usually entails the insufficient capacity of educational facilities, poor public transport or the lack of grocery stores, healthcare facilities or restaurants in suburban localities (e.g. Špačková, Ouředníček 2012; Kostelecký 2016). While less mobile population might create demand for civic amenities inside the locality (Klášť et al. 2012), other residents are reconciled with commuting on daily basis (Morrow-Jones et al. 2004; Kährik et al. 2012).

According to Kährik et al. (2012), the accessibility of civic amenities is, however, only a minor factor when households make their choice for a suburban locality. Amongst inhabitants who had been accustomed to the better-served environment of a city, however, at least some discrepancy between their expectations and the reality has been observed (Kährik et al. 2012; Špačková et al. 2016). Both Kährik et al. (2012) and Špačková et al. (2016) emphasise that despite the above-mentioned drawbacks, new suburbanites are usually satisfied with the quality of their residential environment.

Residential satisfaction in suburban localities is rather linked to a tranquil living environment, safety perception or accessibility of parking lots albeit usual comfortless condition of public spaces (Cook 1988, in Parkes et al. 2002; Havlíčková 2012). Newman and Duncan (1997) find the similar connexion only for family-house inhabitants who are likely more resistant to drawbacks of their neighbourhood. Finally, Lovejoy et al. (2010) point the mild influence of neighbourhood characteristics to residential satisfaction in a suburban environment in general and, on the contrary, emphasise the role of housing characteristics and the quality of educational facilities (see also Morrow-Jones et al. 2004).

6. Influence of life-cycle position and other characteristics of households

The different position of households in a life cycle is projected to their demands and needs which is consequently reflected in overall residential satisfaction (Hourihan 1984; Lu 1999; Phillips et al. 2004; Temelová et al. 2010; Grinstein-Weiss et al. 2011). The presence of children often helps to make social relationships within the neighbourhood which might be reflected in higher residential satisfaction of the household (e.g. Parkes et al. 2002). Conversely, the presence of children usually raises requirements of households for the optimal flat size (Dekker et al. 2011) and the quality of residential environment such as safety (Newman, Duncan 1979), educational facilities (Karsten 2007; Kostelecký 2016), grocery stores (Vackářová 2015) or playgrounds (Dekker et al. 2011).

Ren and Folmer (2017) add that the above-mentioned requirements are usually moderated by the perpetual presence of a woman at home who has an opportunity, owing to the higher amount of time spent in a locality, to become more socially integrated. On the other hand, the lack of time in households in which both parents work may, especially in the conditions of suburban areas, lead to commuting problems for children’s activities (Karsten 2007). Therefore, it is understandable that while some authors have come to conclusion ascribing higher satisfaction to households with children in comparison to young childless households (Spain 1988, in Grinstein-Weiss et al. 2011; Lu 1999), others have come to statistically insignificant (Ren, Folmer 2017) or opposite results (Musterd, van Kempen 2005).

For older households, Temelová et al. (2010) emphasise that, due to restricted mobility, their residential satisfaction is more connected to services...
The role of civic amenities in the residential satisfaction and the quality of community ties within a walking distance from their place of residence. The quality of apartments and the perception of safety are also of importance (Phillips et al. 2004). According to Phillips et al. (2004), fundamental civic amenities for seniors comprise grocery stores, social services or meeting spaces. Temelová et al. (2010) add also the accessibility of healthcare facilities.

Presence of the above-mentioned elements might function as a trigger for tight ties between older inhabitants, their place of residence and the time which they spend there (Golant 1984, in Temelová et al. 2010). In comparison to younger households, older households account for higher satisfaction values (Newman, Duncan 1974; Lu 1999). Parkes et al. (2002) find the reason in tighter embedding to a locality if an older household has been living there for a long time. Lovejoy et al. (2010) explain that by milder expectations and needs which may further decrease with the growing age.

The level of income may also be reflected in different expectations and demands in regard to civic amenities (Swindell, Kelly 2005). Sharp (1986, in De Hoog et al. 1990) mentions that the inhabitants of low-income localities more likely emphasises social services whereas those residing in high-income localities rather demand educational and recreational services (see also Gans 1967). Nevertheless, neither Lovrich and Taylor (1976) nor Stipak (1979) show the statistically significant relationship between the evaluation of civic amenities and socioeconomic characteristics.

The connexion between satisfaction with civic amenities and residential stability is also often solved. While Swindell and Kelly (2005) exhibit a positive relationship between these components, Špačková et al. (2016) find that relationship only for educational facilities, moreover, according to their own capacity (similarly Karsten 2007). Varady (1983) does not confirm for any of the civic amenities the statistically significant relationship regarding residential stability of households. Both Newman and Duncan (1979) and Špačková et al. (2016) notice the higher meaning of the position of a household in a life cycle or housing characteristics in comparison to the residential quality of the environment in which civic amenities undoubtedly belong to (Lee, Guest 1983; Temelová et al. 2010).

7. Research postulates and hypotheses

Based on the theoretical embedding can be assumed that better accessibility and quality of civic amenities will lead to higher satisfaction of inhabitants with

Fig. 3 Research localities and their position within Prague.
Source: Oufedníček et al. (2012); own elaboration
this component of residential satisfaction. Moreover, authors often assert that higher satisfaction with civic amenities is positively reflected in overall residential satisfaction. On the other hand, it is probable that the inhabitants of better-served localities will, due to increased concentrations of population and transport, suffer from the less favourable living environment. Lower satisfaction of residents with civic amenities might be thus compensated, for instance, by more tranquil and safe surroundings.

The relationships between households and their satisfaction with civic amenities in the neighbourhood are strongly influenced by the composition of households. Families with children will ordinarily demand the basic civic amenities such as educational and leisure facilities and grocery stores within the proximity of their home while for singles or young childless couples those will not be that important. According to presumptions, less mobile older households will also emphasise the accessibility or quality of civic amenities inside their neighbourhood, especially concerning grocery stores, healthcare facilities, leisure services or public transport.

8. Research localities

The usual methodical problem, when comes to research of relationships between residential satisfaction and civic amenities, is an excessively wide research area. The results are thus often distorted by the allocation of households within a larger area.
where some spatial variability is obvious (Lovrich, Taylor 1976; Basolo, Strong 2002; Špačková et al. 2016). Therefore, the research localities containing apartment houses of high-density have been selected – (1) U polikliniky Modřany (further Modřany) and (2) Panorama Kyje (further Kyje). Figure 3 shows the position of both localities within Prague. They were built during the 2010s. Modřany, was developed on a remaining plot between a socialist housing estate and single-housing development in the outer city of Prague (Fig. 4). On contrary, Kyje was built in a tranquil and prevalingly single-housing setting farther from the city centre in the peripheral (further suburban) zone of Prague. Kyje forms the coherent but spatially separated set of blocks (Fig. 5).

As for the types of apartments and the development density both localities are comparable. However, whereas in Modřany the spaces between buildings are filled with relaxation areas with maintained greenery and playgrounds, in Kyje those are parking lots, grasses or unused private gardens. On the other hand, the close surroundings of Kyje comprise ploughlands, meadows and unmaintained greenery whereas the proximity of Modřany is very busy due to the adjoining housing estate, its shopping mall, a health centre and ground-floor businesses (compare Figs. 4 and 5).

The physical accessibility of civic amenities is in both localities very unequal. The inhabitants of Modřany may, owing to the central placement of their apartment houses, profit from the walkable proximity of various services including a tram line to the city centre whereas the residents of Kyje have only a bus stop leading to a metro station. Therefore, the households of Kyje are much more dependent on motorised types of transport in commuting to services which, on the contrary, decrease the time distances.

Both housing developments are popular amongst young families with planned or born children who search for tranquil localities in the hinterland of Prague with better living environment (Ouředníček 2003; Čermák 2005; Špačková, Ouředníček 2012) as well as unary or unmarried households demanding the affordable housing in Prague (Ouředníček, Temelová 2009; Ouředníček, Novák 2012). Modřany has become slightly more favourite between families with children whereas Kyje is preferred by younger childless cohorts (Fig. 6). The shares of older residents are low in both localities, but the percentage raises a little at the end of the productive age. Interestingly, both localities are in their demographic structure very different in comparison to their own city districts.

9. Research methods

Regarding a qualitative approach to this research of residential satisfaction with aim of representative outputs, a questionnaire comprising mainly enclosed questions had been composed. Respondents had been asked for the evaluation of their satisfaction with various household and neighbourhood aspects on a 5-point scale (1 – very unsatisfied to 5 – very satisfied) with particular emphasis on services where both satisfaction and importance (1 – very unimportant to 5 – very important) were considered. In the questionnaire, the term neighbourhood was defined as "close surroundings of residents’ home". The total number of inquired households (i.e. 80 in Modřany and 114 in Kyje) had come from the total number of flats (i.e. 298 in Modřany and 704 in Kyje), chosen statistical methods and time plus financial feasibility of the research. The questionnaire survey was realised between June 2017 and March 2018 using the stratified random choice of questioned households.

The questionnaires were distributed into respondents’ mailboxes with a cover letter, a stamped return envelope and a pencil. Households may have sent the filled questionnaire by Czech Post or email. During the second week, the respondents were reminded in person which has been positively reflected in the overall return rate (i.e. 56.2%; 46 gathered questionnaires from Modřany and 63 from Kyje). The research sample appropriately corresponds to the overall demographical structure in both localities mentioned in the previous chapter. On its basis three categories of households have been defined – (1) singles and young childless households (further young adults) up to 39 years of age (26% in Modřany; 33% in Kyje), (2) families with children (39% in Modřany; 25% in Kyje) and (3) older childless households (further empty nesters) of 54 or more years of age (17% in Modřany; 18% in Kyje).

For the comparative purposes of statistical analysis between both research localities, nonparametric Mann-Whitney test, which compares ranks instead of means amongst two groups, has been chosen (Mareš et al. 2015). This is the ordinal method that assigns to numeric data the ranks after their sorting based on their size (Hendl 2004). Secondly, nonparametric Kruskal-Wallis test, which tests the differences
amongst three or more groups, has been mainly used for the comparison of households in the different position of a life cycle. The third utilised method is Kendall’s correlation coefficient in the τb modification. This nonparametric coefficient is appropriate for ordinal data with a low number of categories (Hendl 2004). This method differs from other nonparametric coefficients by its elaboration with values in so-called rank sequences – values of one or two variables that are identical for two observations (Mareš et al. 2015).

For the evaluation of residential satisfaction with civic amenities, variables entering the correlation analysis have been further weighted by the ascribed scale of importance because residents may have different demands for civic amenities and, thus, dissimilarly evaluate their quality (Stipak 1979). During the weighting process, ascribed values of importance were kept and multiplied by values of satisfaction that had been modified to −2 – very unsatisfied to +2 – very satisfied. This approach maximizes the difference between the situation when a certain service is demanded but not available and when it is demanded and available.

| Tested variable | Used method | Average rank | Sig. |
|-----------------|-------------|--------------|------|
| overall residential satisfaction (RS) | Mann-Whitney | 66.86 | 44.67 | <.001 |

| Tested variable | Locality | Used method | Average rank | Sig. |
|-----------------|----------|-------------|--------------|------|
| overall RS      | Modřany  | Kruskal-Wallis | 19.50 | 19.47 | 17.25 | .346 |
|                 | Kyje     |             | 26.21 | 22.22 | 24.55 | .608 |

Fig. 7 Overall residential satisfaction in both localities. Source: own questionnaire survey

Fig. 8 Statistical analysis: overall residential satisfaction. Source: own questionnaire survey

| Tested variable | Used method | Average rank | Sig. |
|-----------------|-------------|--------------|------|
| satisfaction with flat size | Mann-Whitney | 55.04 | 54.97 | .990 |
| with housing quality |            | 58.97 | 51.19 | .174 |
| with parking lots |            | 59.88 | 48.80 | .059 |

| Tested variable | Locality | Used method | Average rank | Sig. |
|-----------------|----------|-------------|--------------|------|
| actual flat size | Modřany  | Kruskal-Wallis | 16.58 | 23.00 | 16.00 | .120 |
|                 | Kyje     |             | 16.69 | 37.19 | 20.95 | <.001 |
| satisfaction with flat size | Modřany  | Kruskal-Wallis | 23.67 | 15.44 | 22.38 | .073 |
|                 | Kyje     |             | 21.67 | 24.13 | 30.45 | .210 |
| w. housing quality | Modřany  |             | 25.17 | 17.69 | 15.06 | .046 |
|                 | Kyje     |             | 23.48 | 24.25 | 24.70 | .966 |

| Tested variables | Used method | R² | Sig. | R² | Sig. |
|------------------|-------------|----|------|----|------|
| satisfaction with flat size × overall RS | Kendall’s τb | .202 | .143 | .311 | .006 |
| with housing quality × overall RS |            | .391 | .006 | .429 | <.001 |
| with parking lots × overall RS |            | −.104 | .452 | .429 | <.001 |

Fig. 9 Statistical analysis: housing characteristics. Source: own questionnaire survey
10. Satisfaction of households in case localities

The difference between the overall satisfaction of households in both localities is statistically significant at 0.01 level (Figs. 7 and 8). Moreover, in this case, the dissimilarities are not significant amongst identified types of households. It suggests that surveyed households would generally prefer to live in the housing estate environment of Modřany than in suburban Kyje.

Neither the satisfaction with flat sizes nor with housing quality differs amongst both localities (Fig. 9). Nevertheless, the detailed analysis of Kyje shows that families with children inhabit larger flats therein while young adults or empty nesters live in smaller units. This might explain the lower satisfaction with size and quality of housing in case of families with children in Modřany where the differences between the actual size of flats are not statistically significant (similarly Dekker et al. 2011).

The satisfaction with housing quality exceeds the satisfaction with flat sizes in their contribution to overall residential satisfaction. As for Kyje, there are more dependencies in the housing domain including the satisfaction with parking lots. It may generally derive an important meaning of housing characteristics for the composition of overall residential satisfaction in suburban localities (likewise Phillips et al. 2004; Ren and Folmer 2017).

In comparison to housing characteristics, the satisfaction with many neighbourhood characteristics

| Tested variable                  | Used method | Average rank | Sig.  |
|---------------------------------|-------------|--------------|-------|
| sat. w. natural environment     | Mann-Whitney| 60.46        | .068  |
| with public spaces              |             | 61.58        | .022  |
| with playgrounds                |             | 73.77        | <.001 |
| with quietness                  |             | 46.27        | .009  |
| with safety                     |             | 52.51        | .443  |
| with access. of Prague          |             | 60.26        | .056  |

| Tested variable                  | Locality    | Used method | Average rank | Sig.  |
|---------------------------------|-------------|-------------|--------------|-------|
| sat. w. natural environment     | Modřany     | 23.00       | 15.83        | .2250 |
| with public spaces              | Kyje        | 26.86       | 18.88        | .2620 |
| with playgrounds                | Modřany     | 19.04       | 17.86        | .2388 |
| with quietness                  | Kyje        | 27.33       | 16.69        | .2870 |
| with safety                     | Modřany     | 17.75       | 17.42        | .2325 |
| with access. of Prague          | Kyje        | 26.38       | 18.09        | .2422 |

| Tested variables                | Used method | Modřany | Kyje |
|---------------------------------|-------------|---------|------|
| satisfaction × overall RS       | Kendall's tau b | .435   | .301 |
| with public spaces × overall RS | .293        | .272 |
| with playgrounds × overall RS   | .518        | .240   |
| with quietness × overall RS     | .284        | .399   |
| with safety × overall RS        | .336        | .185   |
| with accessibility of Prague × overall RS | .027 | .219 | .054 |

Fig. 10 Statistical analysis: neighbourhood characteristics.
Source: own questionnaire survey
varies across both localities and significantly correlates with overall residential satisfaction in both localities (Fig. 10, see also Fried 1982; Hourihan 1984; Gruber, Shelton 1987). Modřany residents feel besides the higher quality of the natural environment also better satisfaction with public spaces and playgrounds as they at least exist. The worse condition or non-existence of these spaces in Kyje belongs among common problems of suburban localities (Havlíčková 2012; Kährik et al. 2012; Špačková et al. 2012).

Conversely, the inhabitants of Kyje are very satisfied with the tranquil suburban environment of their locality (see also Musterd, van Kempen 2005; Karsten 2007). Nevertheless, noisier surroundings of Modřany is lesser reflected in overall residential satisfaction. The perception of safety is similar in both areas (compare with Temelová et al. 2010). Finally, the satisfaction with the accessibility of Prague is expectedly higher for Modřany residents, probably owing to wider public transport options.

Families with children in Kyje are more vulnerable to deficiencies regarding public spaces and tranquility (similarly Newman, Duncan 1979; Dekker et al. 2011). As for Modřany, less mobile households such as families with children and empty nesters are less satisfied with the accessibility of Prague than young adults. The explanation for that is offered by Karsten (2007), who considers hectic environment as the possible cause of restricted movements, for instance, in case of the journeys to public transport stops.

The inhabitants of Modřany put generally more weight on the adequate accessibility of civic amenities (Fig. 11). On the contrary, the importance of proximity to civic amenities might has been a minor factor when households make their choice for a suburban Kyje (similarly Kährik et al. 2012). However, the higher values of importance for daily-used services such as grocery stores or public transport are comparable for all residents in both localities (Fig. 12). Educational and leisure facilities are mainly emphasised amongst

| Tested variable | Locality | Used method | Average rank (54+) |
|----------------|----------|-------------|--------------------|
| Importance of civic amenities overall | Modřany | Kruskal-Wallis | 14.41 15.87 17.13 .812 |
| | Kyje | | 20.83 26.12 16.33 .141 |
| of grocery stores | Modřany | | 15.95 16.44 18.25 .876 |
| | Kyje | | 22.43 23.93 22.78 .927 |
| of restaurants | Modřany | | 20.00 14.38 15.88 .267 |
| | Kyje | | 26.48 22.83 15.17 .083 |
| of kindergartens | Modřany | | 13.55 18.65 15.50 .339 |
| | Kyje | | 18.86 **28.80** 17.56 .025 |
| of primary schools | Modřany | | 12.68 19.62 13.75 .110 |
| | Kyje | | 18.78 **28.57** 17.75 .031 |
| of health care facilities | Modřany | | 15.95 15.76 21.13 .528 |
| | Kyje | | 19.62 24.93 27.67 .214 |
| of children’s leisure services | Modřany | | 12.27 19.13 13.75 .120 |
| | Kyje | | 17.30 **30.60** 17.63 .002 |
| of adults’ leisure services | Modřany | | 17.95 13.77 15.25 .456 |
| | Kyje | | 21.93 26.80 15.94 .128 |
| of cultural facilities | Modřany | | 17.32 15.00 16.38 .791 |
| | Kyje | | 19.43 27.07 24.56 .187 |
| of public transport | Modřany | | 19.59 14.35 17.13 .180 |
| | Kyje | | 23.21 24.43 20.11 .529 |

**Fig. 11** The importance of proximity of civic amenities (rather or very important).
Source: own questionnaire survey

**Fig. 12** Statistical analysis: neighbourhood characteristics – the importance of proximity of civic amenities.
Source: own questionnaire survey
The role of civic amenities in the residential satisfaction

| Tested variable                          | Used method | Average rank | Sig. |
|------------------------------------------|-------------|--------------|------|
| satisfaction with civic am. overall      | Mann-Whitney| 57.65        | <.001|
| with grocery stores                     |             | 70.95        | <.001|
| with restaurants                        |             | 54.02        | .073 |
| with kindergartens                      |             | 53.22        | <.001|
| with primary schools                    |             | 54.07        | <.001|
| with health care                        |             | 61.28        | <.001|
| with children’s leisure services        |             | 52.16        | <.001|
| with adults’ leisure services           |             | 55.14        | .005 |
| with cultural facilities                |             | 48.13        | .461 |
| with public transport                   |             | 62.20        | <.001|

| Tested variable                          | Localities | Used method | Average rank | Sig. |
|------------------------------------------|------------|-------------|--------------|------|
| satisfaction with civic amenities overall| Modřany    | 13.30       | .389         |
|                                          | Kyje       | 21.15       | .831         |
| with grocery stores                      | Modřany    | 16.50       | .805         |
|                                          | Kyje       | 25.79       | .044         |
| with restaurants                         | Modřany    | 20.09       | .513         |
|                                          | Kyje       | 23.82       | .479         |
| with kindergartens                       | Modřany    | 12.35       | .320         |
|                                          | Kyje       | 20.88       | .219         |
| with primary schools                     | Modřany    | 12.45       | .296         |
|                                          | Kyje       | 20.74       | .271         |
| with health care facilities              | Modřany    | 17.09       | .853         |
|                                          | Kyje       | 20.50       | .692         |
| with children’s leisure services         | Modřany    | 11.05       | .033         |
|                                          | Kyje       | 20.32       | .329         |
| with adults’ leisure services            | Modřany    | 16.18       | .541         |
|                                          | Kyje       | 27.79       | .008         |
| with cultural facilities                 | Modřany    | 15.88       | .856         |
|                                          | Kyje       | 23.63       | .082         |
| with public transport                    | Modřany    | 19.36       | .150         |
|                                          | Kyje       | 18.42       | .159         |

Fig. 13 Statistical analysis: neighbourhood characteristics – weighted satisfaction with the quality of civic amenities in the proximity of the neighbourhoods.
Source: own questionnaire survey
families with children in Kyje (similarly Karsten 2007; Kostelecký 2016) while young adults demand restaurants where they might have spent their leisure (Špačková, Ouředníček 2012). Finally, empty nesters surprisingly do not have any special requirements regarding the proximity of civic amenities (compare with Phillips et al. 2004; Temelová et al. 2010).

Even though the satisfaction with civic amenities is weighted by the degree of the ascribed importance to them, Modřany residents are generally more satisfied with their quality (Fig. 13). This method shows that the inhabitants of Kyje mostly lack daily-used services such as grocery stores and public transport, or health care facilities (see also Kährk et al. 2012; Špačková et al. 2016). While the ascribed importance of these services by households does not vary significantly between both localities (see again Figs. 11 and 12), the evaluation of satisfaction is very dissimilar. In this way, satisfaction corresponds to different accessibility of services in both localities.

In contrast to Modřany respondents, the different life-cycle position of Kyje households plays a considerable role in the evaluation of satisfaction with civic amenities. Young adults in Kyje are more satisfied with grocery stores and leisure services than families with children or empty nesters who especially put emphasis on these services and, therefore, miss these services hereabouts (see Temelová et al. 2010). This might be explained by bounds of childless households to everyday commuting for activities – they might perceive the local civic amenities more benevolently than others (Morrow-Jones et al. 2004; Phillips et al. 2004).

The degree of satisfaction with civic amenities as a neighbourhood characteristic is positively reflected in overall residential satisfaction (see also Wilson et al. 1995, in Dekker et al. 2011; Temelová et al. 2010), the satisfaction with educational facilities, which are utilised only by certain households, is not as much related. As for Modřany, the nonnegligible role in composing overall residential satisfaction might be also ascribed to the physical proximity of restaurants and health care facilities reflected in significantly higher satisfaction with these services.

Generally, characteristics of households play only a minor role in composing overall residential satisfaction (Fig. 14, similarly Hourihan 1984; Lu 1999; Parkes et al. 2002; Hur; Morrow-Jones 2008; Lovejoy et al. 2010). The importance must be, however, ascribed to the quality of social relationships and residential stability of residents in suburban Kyje despite the lack of public spaces therein (also Speare 1974; Amérigo, Aragon 1997; Parkes et al. 2002; Špačková et al. 2016).

Surprisingly, the less educated households of Modřany consider as more important the presence of leisure and cultural facilities than those of higher education. The inversed and oftener relationship is partly valid for Kyje inhabitants (as in Gans 1967; Sharp 1986, in De Hoog et al. 1990, compare with Lovrich, Taylor 1976; Stipak 1979). Finally, the level of residential stability is not influenced at all by the satisfaction with civic amenities (Varady 1983, compare with Swindell, Kelly 2005; Špačková et al. 2016) except the quality of health care facilities in case of Kyje (Karsten 2007).

11. Discussion

The demographic structure of new apartment-house localities in Prague significantly differs from the city districts they belong to. High shares of young adults and families with children are the typical feature of that residential areas with adequate accessibility of

| Tested variables | Used method | Modřany | Kyje |
|------------------|-------------|---------|------|
| length of stay × overall RS | Kendall's tau b | −.161 | .209 |
| × satisfaction with civic amenities overall | Sig. | .092 | .507 |
| income level × overall RS | −.143 | .230 |
| × importance of civic amenities overall | | | |
| education level × overall RS | −.034 | .790 |
| × importance of civic amenities overall | | | |
| × importance of adults’ leisure services | −.004 | .970 |
| × importance of cultural institutions | | | |
| residential stability × overall RS | .200 | .080*
| × satisfaction with civic amenities overall | | | |

Fig. 14 Statistical analysis: household characteristics.
Source: own questionnaire survey
the city centre and with a good-quality environment (e.g. Čermák 2005; Ouředníček, Temelová 2009; Špačková, Ouředníček 2012). A slightly increased attractiveness is noticed also for empty nesters at the frontier between productive and post-productive age.

Modřany residents are generally more satisfied than inhabitants of suburban Kyje. The housing estate environment dominates especially in spheres of the residential quality of the neighbourhood which, with the contribution of civic amenities, is very significantly reflected in overall residential satisfaction (likewise Houriран 1984; Gruber, Shelton 1987). However, increased movements of population and transport around Modřany bring one considerable drawback – an increased noise (see also Musterd, van Kempen 2005; Karsten 2007) which is, on the other hand, sufficiently compensated through the higher quality of other neighbourhood characteristics. The civilly well-facilitated locality of Modřany is apparently mostly appreciated by families with children and empty nesters who give higher weight to the residential quality of the neighbourhood (e.g. Temelová et al. 2010; Dekker et al. 2011).

Quite the reverse, the suburban environment of Kyje remains attractive only for young adults which do not put much emphasis to ambient features of the neighbourhood (Morrow-Jones et al. 2004; Kährik et al. 2012) which for children or other residents with restricted mobility is not much friendly (also Špačková et al. 2016). Generally, households demand fair accessibility of daily-used services such as grocery stores or public transport (Vackářová 2014). While educational facilities are rather important for families with children only, childless individuals or couples have not missed them much so far. These smaller households thus probably mostly aim to the decent quality of flats which is comparable within both localities and, at the same time, creates a nonnegligible contribution to overall residential satisfaction (Fried 1982; Lovejoy et al. 2010).

Compared to the above-mentioned position of the household in a life cycle, which is one of the key factors influencing the constitution of residential satisfaction (e.g. Lu 1999; Phillips et al. 2004; Grinstein-Weiss et al. 2011), other scrutinised individual features of households such as socioeconomic characteristics or the length of stay in a locality are less significant. However, firmer social embedding of a household, especially in the suburban locality of Kyje, contributes to the overall satisfaction (also Parkes et al. 2002) even though this connexion is typical for localities with the high scale of residential satisfaction (Amérigo, Aragones 1997; Hur, Morrow-Jones 2008).

12. Conclusion

This paper aimed to discover and explore potential distinctions in the evaluation of the various components of residential satisfaction, mainly of civic amenities, within the different types of households in the dissimilarly situated localities of new apartment houses in post-socialist Prague. It also pursued to answer the question, how is satisfaction with civic amenities reflected in overall residential satisfaction in comparison with its other components. For these purposes, two new apartment-house localities with an entirely different environment (housing estate and suburban), the unequal position towards the compact city and with the different accessibility of civic amenities have been chosen. Residential satisfaction, as well as other characteristics of households, have been found out by the questionnaire survey and its subsequent statistical analysis.

Dwelling in newly built apartment houses is migratory attractive especially for young adults, families with children and, at the lower scale, for empty nesters. Although for that demographic structure, in almost all indicators of residential satisfaction, suits better an environment of a housing estate, young adults also fairly adapt the life in flats of comparable quality inside a suburb, which envisages commuting for various activities to other parts of a city. Besides the higher level of residential satisfaction with civic amenities inside a housing estate, the difference is also significantly manifested in the majority of neighbourhood features such as public spaces or accessibility of Prague. The only and genuinely appreciated benefit of the observed suburb remains in the tranquil living environment, which busy surroundings of the housing estate lack.

The constitution of overall residential satisfaction is either conditioned by the quality of housing itself or by the quality residential environment in neighbourhood surroundings and its attractiveness for the various groups of inhabitants. The similar weight is given to the quality of civic amenities, especially of such that are used the most frequently such as grocery stores or public transport. However, the scale of importance of other services varies according to the position of households in a life cycle. For instance, educational facilities are thus mostly demanded by families with children. Individual factors of households such as socioeconomic background or the length of stay are of less importance for overall satisfaction of all household types. Surprisingly, relations with neighbours still play a nonnegligible role.

The paper enriches the ordinarily scrutinised concept of residential satisfaction for more detailed research of the importance of civic amenities for the inhabitants of the new apartment-house localities in post-socialist Prague. Nevertheless, the main outcomes could be generalised to other post-socialist cities since they provided comparable results in this environment. For further research, it would be prospective to aim in more detail for distinguishing preferences of households in different positions within a life cycle regarding civic amenities as well as other neighbourhood features or to seek for other compensations of missing civic amenities in suburbs besides the noiseless environment.
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