

Urban sprawl: neighbourhood dissatisfaction and urban preferences.

Some evidence from Flanders.

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Abstract

Early studies suggest that people living in rural neighbourhoods are more satisfied with their residential location than people living in cities. Consequently, most individuals seem to prefer low-density environments to reside in. More recent studies, however, state that rural residents are no more likely to be satisfied with their residential neighbourhood than their urban counterparts. In addition, a considerable, growing part of the population seems to have a clear preference for urban neighbourhoods. The results of our research, conducted in Flanders, Belgium, suggest that urbanites are more satisfied with their neighbourhood than rural residents are. Neighbourhood preferences differ less between urbanites and rural residents. However, there are differences indicating that urbanites have a preference for rural neighbourhoods and rural residents a preference for urban neighbourhoods. In sum, it seems that people, once they have selected their residential location, are not satisfied with the neighbourhood characteristics and tend to develop a preference for a different neighbourhood type. This mismatch can be partly explained by the strongly developed urban sprawl in Flanders, reducing the residential qualities of urban and especially rural environments. Restricting further urban sprawl, with the help of a more active spatial planning policy, seems necessary to increase neighbourhood satisfaction.

Keywords

Neighbourhood satisfaction, Neighbourhood preferences, Urban sprawl

1. Introduction

A strong preference for rural/suburban living has resulted in an urban sprawl (a low-density expansion of the existing built environment) in most Western countries, especially in the US (Ewing, 1997) but also in most European countries (Patacchini & Zenou, 2009). Urban sprawl goes hand in hand with two periods of transportation improvements (Brueckner, 2000; Glaeser & Kahn, 2004; Newman & Kenworthy, 1996): (i) the introduction of the railway in an anti-urban period at the end of the Industrial Revolution (especially in Europe) and (ii) the period of rising car use after the Second World War (in most Western countries). The Industrial Revolution, starting at the end of the eighteenth century in the United Kingdom, encouraged a lot of people to live in urban areas as factory work replaced many former farm jobs. These small and dense cities, where all destinations were within a reasonable walking distance (Newman & Kenworthy, 1996), rapidly became overpopulated, and were regarded as the places where diseases and riots developed. In order to solve these social problems, a utopian way of looking at residing in more peaceful, low-density environments with green surroundings emerged (Bruegmann, 2008; Davoudi & Stead, 2002; Fishman, 1989). Howards' garden city concept (1902), for instance, combined both the advantages of living in a city (proximity of facilities) and the advantages of living in a rural environment (clean air, open spaces). The technological development of passenger trains and trams in industrialised countries (e.g., United Kingdom, Belgium) at the end of the nineteenth century made it possible for factory workers to commute between the countryside and the

city. This resulted in a first wave of urban sprawl; cities spread outwards generating sub-centres around transport nodes such as train and tram stations (Dittmar et al., 2004; Newman, 1992; Newman & Kenworthy, 1996). A second wave emerged after the Second World War. The technological development of the car, beginning before the war, becomes a dominant form of development after the war. It became the transport technology that shaped the land; the car made it possible to develop in almost every direction. Low-density suburban neighbourhoods, designed to be well-accessible for cars, arose in most Western countries. People were no longer forced to live either near their place of employment or a transit station to transport them there (De Vos & Witlox, 2013; Gillham, 2002; Glaeser & Kahn, 2004; Newman & Kenworthy, 1996). The outer city dispersal of dwellings, and other facilities, was not equal in all countries. Some countries (e.g., The Netherlands, Germany) were able to limit urban sprawl due to active urban planning regulations (Dieleman et al., 1999). In other countries (e.g., Belgium, USA) urban sprawl had free play due to limited amount of spatial planning regulations (Albrechts, 1999; Ewing, 1997). However a lot of people regard rural surroundings still as a peaceful and 'idyll' place to reside in (Halfacree, 1995; Short, 1991), there are indications that the strong preference for a suburban/rural way of living is reducing (Verhetsel & Witlox, 2006). Partly due to gentrification processes, cities have become more liveable over the past decades, resulting in reurbanisation in some Western cities (Atkinson & Bridge, 2005; Buzar et al., 2007; Kabisch et al., 2010; Seo, 2002), although other studies indicate that outward suburbanisation is still the dominant pattern (e.g., Williams, 2004). The countryside seems to lose parts of its attraction due to far-reaching urban sprawl and (functional) urbanisation, resulting in changes in the rural landscape and spatial structure (Antrop, 2000; Smith, 2007). A significant part of people

now holds a strong preference for living in highly urbanised environments (Handy et al., 2008; Myers & Gearin, 2001). Besides, research reveals that people living in low-density suburbs are no more likely to express greater satisfaction with their neighbourhood than those living in the city (Adams, 1992; Farrell et al., 2004; Lovejoy et al., 2010).

This paper analyses neighbourhood preferences and neighbourhood satisfaction of people living in urban and rural neighbourhoods in the strongly urbanised region of Flanders (i.e., the Northern part of Belgium). The remainder of this paper is organised as follows. Section 2 reviews the literature on neighbourhood preferences and neighbourhood satisfaction. Section 3 discusses the Flemish land use pattern while data and methods are discussed in Section 4. Results are presented in Section 5 and discussed in Section 6. Finally, our major conclusions are presented in Section 7.

2. Neighbourhood satisfaction and preferences

Neighbourhood satisfaction and neighbourhood preferences are linked with each other. Neighbourhood satisfaction can be regarded as a reflection of people's residential preferences. Individuals preferring a peaceful and quiet neighbourhood probably will not be very satisfied with their neighbourhood if they live in a city centre where there is a lot going on. Neighbourhood satisfaction can be defined as the extent to which needs, concerning the residential neighbourhood, are met (Lovejoy et al., 2010). Neighbourhood preferences can also be affected by neighbourhood satisfaction; residents who are not satisfied with their residential neighbourhood can generate a preference for another type of neighbourhood. In the following literature review we will first discuss neighbourhood satisfaction, of which

there is extensive research available. Afterwards, the less examined neighbourhood preferences will be tackled.

2.1 Neighbourhood satisfaction

Early studies on residential and neighbourhood satisfaction were highly influenced by two general perspectives: a linear-development model and a systemic model (Adams, 1992; Kasarda & Janowitz, 1974; Parkes et al., 2002). The linear-development model, derived from the work of Wirth (1938) and Tonnies (1963), and influenced by the anti-urban values at the end of the industrial period (Davoudi & Stead, 2002), states that increasing population size, density and heterogeneity of inhabitants decreases social integration, neighbourhood satisfaction and perceived well-being, and this in a linear fashion. Therefore, small, rural towns characterised by informal social contact and stable, homogeneous populations facilitate strong social networks and good psychological health. Densely populated cities, on the other hand, with a mobile and heterogeneous population and conflicting social norms lead to weak social networks, low involvement in local activities, low neighbourhood satisfaction and poor psychological health (Adams, 1992; Kasarda & Janowitz, 1974). Hence, the linear-development model predicts that an increase in size and diversity of an area's population will result in people becoming more exploitative in their social relations, individualistic, and alienated from others (Milgram, 1970; Wirth, 1938). According to Milgram (1970), the lack of close interpersonal contact is a function of psychic overload. Contact with a higher percentage of strangers and people from different backgrounds makes the neighbourhood less predictable, more stressful, and less satisfying for residents. Urbanites respond to this overload by ignoring, or at least allocating less time to, individuals

they meet, reducing participation in local activities and only engaging in exploitative or superficial forms of social interaction. This results in a city life of anonymity and lower physiological health (Adams, 1992; Wirth, 1938).

While the linear-development model mainly focusses on a fixed spatial environment, the systemic model explains neighbourhood satisfaction by using residential turnover as the major explanatory variable. This model, proposed by Kasarda and Janowitz (1974), states that residential mobility operates as a barrier in the development of social bonds and local associational ties. Therefore, a higher degree of neighbourhood stability and length of residence will positively affect local social networks and friendships, neighbourhood satisfaction and the perceived quality of life. This implicates that urbanisation and population density does not affect the local social networks or the neighbourhood satisfaction. People establish strong ties over time and may require numerous interactions in order to feel comfortable with their neighbours. New arrivals to the neighbourhood or a neighbourhood experiencing a high level of turnover results in barriers to the development of strong ties. Residents may be reluctant to form strong emotional attachments toward their neighbours because they know such bonds will not last (Sampson, 1991). Neighbourhood instability and individual mobility also contribute to feelings of isolation, lower satisfaction with the quality of one's life, and a weak sense of self-efficacy (Adams, 1992).

More recent research, however, shows no important differences in neighbourhood satisfaction or perceived well-being of urbanites and suburbanites (Adams, 1992; Farrell et

al., 2004; Lovejoy et al., 2010). Population density and heterogeneity of inhabitants hardly influences neighbourhood satisfaction. Lovejoy et al. (2010) indicate that typical physical characteristics of urban or suburban neighbourhoods do not have a significant influence on neighbourhood satisfaction. Suburbanites do not seem to derive more neighbourhood satisfaction from typical suburban characteristics (e.g., availability of parking, peaceful environment), nor do urbanites derive more neighbourhood satisfaction from high density or from the proximity of numerous facilities. Perceptions of attractiveness and safety are more important determinants in both residential environments. The difference in neighbourhood satisfaction stems from other aspects, like differences in liveliness and neighbouring (e.g., contact with neighbours, participating in local activities). Urbanites derive more satisfaction from these aspects than suburbanites do; suburbanites seem less interested in these aspects. This indicates a lost sense of community among suburban dwellers, and can explain a light dissatisfaction of suburbanites with their neighbourhood (Lovejoy et al., 2010; Talen, 2001). Liveliness, neighbouring and sense of community seem to play an important role in neighbourhood satisfaction (Farrell et al., 2004).

2.2 Residential preferences

Parallel with residential satisfaction, residential preferences evolved from anti-urban preferences into varied preferences (Brower, 1996; Talen, 2001). Due to bad urban living conditions during the Industrial Revolution people created a preference for living in more rural environments (e.g., Davoudi & Stead, 2002). The development of passenger trains and trams (in the nineteenth century) and the car (in the twentieth century) made it possible for people to live in the countryside but still work in a city (e.g., Newman & Kenworthy, 1996).

Nowadays, urban conditions have improved and low-density versus high-density or mixed-use versus single-use developments seem more evenly preferred (Ewing, 1997). Although the biggest group of people, both in Europe and America, still prefer to live in low-density environments, people preferring (high-density and mixed-use) urban neighbourhoods are substantial (Brower, 1996; Brun & Fagnini, 1994; McDowell, 1997; Van Ham & Feijten, 2008) and growing (Handy et al., 2008; Myers & Gearin, 2001). Talen (2001) states that urban sprawl at an advanced stage can lead to an increasing preference for urban neighbourhoods. This evolution in residential preferences seems to play an important role (besides other elements such as decreasing household sizes and delayed child-bearing) in the rise of people living in city centres (reurbanisation) over the past three decades (Buzar et al., 2007; Seo, 2002). *Ærø* (2006) states that tradition is important and that people prefer a residential neighbourhood similar to the neighbourhood they grew up.

3. The case of Flanders

In the preceding literature review we have shown how neighbourhood satisfaction and preferences have evolved from anti-urban into more varied attitudes. In this section we will focus on the development of the land use pattern in the Flanders Region, Belgium (surface area: 13,500 km²; inhabitants: 6,300,000; population density: 466 inhabitants/km² (<http://www.statbel.fgov.be/>)). Doing so, we investigate whether a diffuse urban field influences the way in which residents perceive their neighbourhood.

Flanders has a widespread land use pattern that has strongly developed since the nineteenth century. At the beginning of the nineteenth century, the Industrial Revolution

created a lot of employment in Flemish cities; cities which were mostly very compact with well-defined boundaries. Since most employees had neither the time nor the money to commute, many moved from the countryside to the city to live close to their work. In order to prevent a further immigration of labourers to the overpopulated cities, Belgium constructed (starting in 1835) the most densified network of trams and trains of all industrial countries. Together with cheap public transportation passes (starting from 1869) labourers were now able to commute easily between the city and the countryside. Furthermore, cheap government loans enabled a lot of households to build (mostly detached) dwellings with garden on the countryside (e.g., De Decker, 2011; De Vos, 2015; Kesteloot & De Maesschalk, 2001; Verhetsel et al., 2010). This 'anti-urban' policy, in combination with nearly any spatial planning regulations, resulted in a first wave of urban sprawl; residing far away from the workplace was made possible resulting in suburbanisation and a dispersed land use pattern (e.g., De Vos, 2015; De Vos & Witlox, 2013). After the Second World War, urban sprawl accelerated even further. The rise of the car made it easier to reside almost everywhere on the countryside, also on places which were difficult to access by train. Suburban neighbourhoods with good car accessibility emerged scattered around the Flemish region. The passive spatial planning policies in Flanders did not hinder the geographical distribution of facilities. In fact, Spatial plans (zoning plans) in the nineteen seventies (i.e., sub-regional plans which are referred to as 'Gewestplannen'¹) designated territories spread around the region as residential area or prospective residential area, based on expected population growth. Furthermore, the so-called 'fill-up' rule, allowing to construct dwellings in non-residential areas between two

¹ These plans were mainly developed in order to spatially distribute rising economic activities.

buildings closer than 70 metres from each other, resulted in ribbon development (Bouckaert & De Waele, 2000). These elements have resulted in a strongly urbanised region where open spaces have become scarce and fragmented over the past decades. Although urban revitalisation policies since the end of the 1990s have improved the general opinion about living in the city (Schuermans et al., 2014; Meeus & De Decker, 2013), a large part of the available space has already been built up by buildings, infrastructure and all sorts of other activities (Albrechts, 1999). Flanders Region can therefore be considered as a sort of a diffuse city; city and countryside fade into one another; the border is hard to draw (Fig. 1) (De Decker, 2011; De Vos & Witlox, 2013).

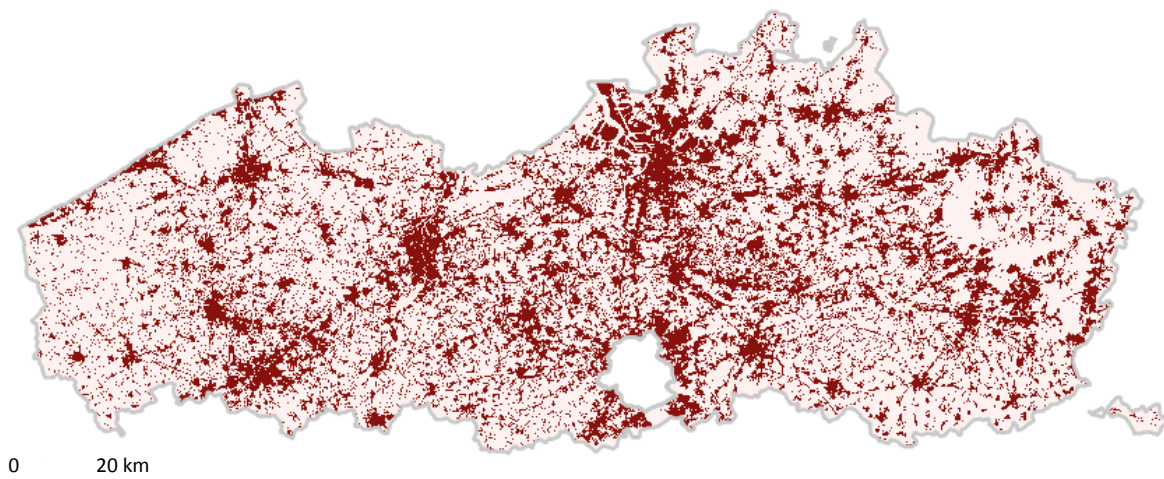


Figure 1. Built-up space (indicated in red) of the Flemish Region in 2010 (Source: <http://www.milieurapport.be>).

4. Data and Methods

4.1 Data

For this study we rely on survey data from 2007, collected for a study on mobility, residential location and lifestyles (Van Acker, 2010). As the initial purpose of this extensive

Internet survey was to analyse the effect of lifestyles on travel behaviour – both directly and indirectly through the residential location choice and car ownership – this survey contains a substantial amount of information on residential satisfaction and residential preferences. In a first stage the survey was distributed among staff members and students of the University of Antwerp and the Faculty of Sciences at Ghent University. In order to obtain a more balanced sample, the survey was, in a second stage, also distributed within the greater region of Ghent (including both urban and rural municipalities). In total, 1,878 respondents completed the survey of which 1,597 were retained after data cleaning. Due to the sampling method, respondents with a university degree, and younger people are – compared to the total Flemish population – overrepresented (for more information on the data, see Van Acker et al., 2011, 2014). Although the sample is consequently not representative of the total population of Flanders, it does enable us to analyse relationships among multiple variables. As our sample size is relatively large and sufficiently diverse, coefficients to characterise specific relationships can be estimated with great confidence (see, for instance, Groves, 1989).

Respondents are subdivided in urban and rural residents, according to the principles of the ‘Spatial Structure Plan for Flanders’ (Ministerie van de Vlaamse Gemeenschap, 1997). This spatial structure plan divides the Flemish municipalities into categories ranging from big cities to countryside (Fig. 2). We consider respondents residing in big cities to small cities as ‘urban residents’ and respondents residing outside such urban areas as ‘rural residents’. Since we use municipalities² as spatial units instead of neighbourhoods – which would have

² Flemish municipalities have an average surface area of 43.9km²

been most ideal – there is a certain loss of information as municipalities can have diverse neighbourhoods. Using the urban-rural subdivision has the advantage of putting forward potential spatial planning interventions in order to increase neighbourhood satisfaction (e.g., the distribution of additional dwellings among urban and rural municipalities). The classification of urban and rural municipalities is of big importance in the ‘Spatial Structure Plan for Flanders’. Around 60% of the Flemings live in urban municipalities, 40% in rural municipalities (Ministerie van de Vlaamse Gemeenschap, 2011). In the used data sample, only 25.6% of the respondents reside in rural municipalities; urbanites are consequently overrepresented. Especially people living in the city of Ghent (19.2% of the respondents) and the city of Antwerp (21.5% of the respondents) are overrepresented. Respondents living in the eastern and western part of Flanders (i.e., the provinces of Limburg and West-Flanders) are underrepresented. We do acknowledge that the subdivision in urban and rural respondents is crude. A more extensive subdivision of respondents based on their residential location was possible. However, we chose not to do so because the distinction between the various urban and suburban neighbourhoods is often difficult to make as suburban neighbourhoods are rather diverse and predominantly urbanised (Meeus & De Decker, 2013); while the differences in neighbourhoods between rural municipalities and the group of urban municipalities is most clear.

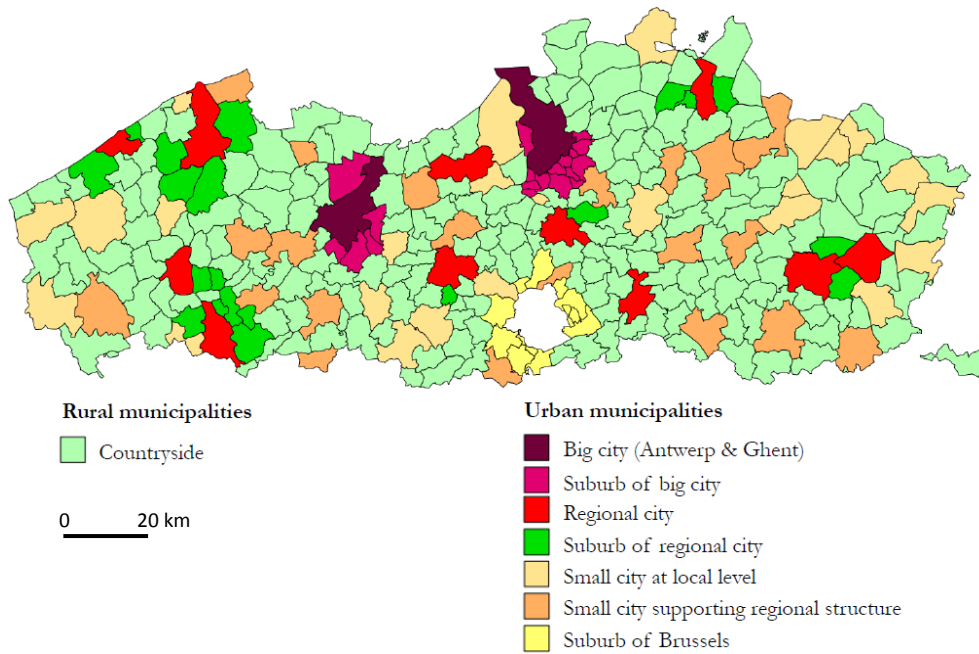


Figure 2. Urban and rural municipalities in Flanders (Source: Ministerie van de Vlaamse Gemeenschap, 1997)

4.2 Methods

4.2.1 Neighbourhood satisfaction

In order to measure neighbourhood satisfaction, we asked the respondents how satisfied they are with 19 neighbourhood characteristics of their present neighbourhood, i.e., social safety (no vandalism or criminality); traffic safety; presence of bike lanes; presence of sidewalks; sufficient parking place; proximity of public transport; proximity of shops; proximity of leisure activities; proximity of family/friends; proximity of work; peacefulness; presence of green areas; neatness; appearance of buildings; strong interaction with neighbours; frequent interaction with neighbours; composition of residents according to age; composition of residents according to nationality; and distance between dwellings. A five-point Likert scale was presented to them, going from *absolutely not satisfied* to *very satisfied*. In order to gain a better insight into which groups of neighbourhood characteristics people are satisfied with, we conducted a factor analysis (principal axis

factoring; promax rotation). Five factors (based on the scree plot and eigenvalues larger than one) were retained, explaining 60.7% of the total variance; these factors are Peacefulness and safety; Proximity; Neighbouring; Infrastructure active travel; and Residents' composition (Table 1).³

Table 1. Pattern matrix of neighbourhood satisfaction

How satisfied are you with aspects of your neighbourhood? ↓	Factor →	Peacefulness and safety	Proximity	Neighbouring	Infrastructure active travel	Residents' composition
Presence of green areas		0.85				
Peacefulness		0.84				
Neatness		0.82				
Social safety		0.62				
Appearance of buildings		0.53				
Traffic safety		0.49			0.38	
Distance between dwellings		0.48				0.29
Sufficient parking place		0.40				
<hr/>						
Proximity of leisure activities			0.74			
Proximity of shops			0.73			
Proximity of public transport			0.56			
Proximity of family/friends			0.42			
Proximity of work			0.40			
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Strong interaction with neighbours				0.83		
Frequent interaction with neighbours				0.82		
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Presence of sidewalks					0.74	
Presence of bike lanes					0.71	
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Residents' composition (nationality)						0.71
Residents' composition (age)						0.61

4.2.2 Neighbourhood preferences

In order to measure neighbourhood preferences, we asked the respondents how important they find certain neighbourhood characteristics in the case they had to choose a new residential location. The 19 neighbourhood characteristics used to measure neighbourhood

³ In this research, variables with a factor loading between -0.25 and 0.25 are not retained in the pattern matrices.

satisfaction are also applied to measure neighbourhood preferences. Again, a five-point Likert scale was presented to the respondents, going from *absolutely not important* to *very important*. In order to gain a better insight into which groups of neighbourhood characteristics people find important (in the case they have to choose a new neighbourhood), we conducted a second factor analysis (principal axis factoring; promax rotation). This time six factors (based on the scree plot and eigenvalues larger than one) were retained, explaining 62.4% of total variance: Accessibility; Peacefulness; Proximity; Safety/appearance; Residents' composition and Neighbouring (Table 2).

Table 2. Pattern matrix of neighbourhood preferences

	Factor →					
Suppose you have to choose a new residential location. Which aspects are important to you? ↓	Accessibility	Peacefulness	Proximity	Safety/appearance	Residents' composition	Neighbouring
Presence of sidewalks	0.87					
Presence of bike lanes	0.84					
Proximity of public transport	0.36		0.34			
Presence of green areas		0.94				
Peacefulness		0.81				
Proximity of shops			0.74			
Proximity of leisure activities			0.68			
Proximity of family/friends			0.41			
Proximity of work			0.36			
Social safety				0.78		
Neatness		0.28		0.53		
Sufficient parking place				0.45		
Traffic safety	0.40			0.42		
Residents' composition (nationality)					0.74	
Residents' composition (age)					0.71	
Distance between dwellings		0.34			0.35	
Frequent interaction with neighbours						0.81
Strong interaction with neighbours						0.71

4.2.3 Socio-economic factors

Not only the residential neighbourhood, but also socio-economic factors can influence neighbourhood satisfaction and neighbourhood preferences. However, results from previous studies show that there exists disagreement in the way that, for instance, age, gender, and household composition affect neighbourhood satisfaction (Adams, 1992; Lovejoy et al., 2010; Parkes et al., 2002). There seems to be more unity between researchers in the way that socio-economic factors influence neighbourhood preferences (Lovejoy et al., 2010). Most authors state that, for instance, dual-earner households with children and a high income mostly prefer living in low-density environments (Bhat & Guo, 2007; Talen, 2001). In order to investigate the influence of socio-economic factors on neighbourhood satisfaction and preferences, we included six socio-economic factors: Age (years); Gender (0 = male; 1= female); Personal income (subdivided in seven categories, ranging from 0 to +3000 €, with an interval of 500 €); Education (subdivided in thirteen categories, ranging from no education to post-university education); Number of children in household and household car ownership.

4.2.4 Lifestyles

Lifestyle is a rather vague concept with many meanings (Kipnis, 2004). A lifestyle can be considered as a pattern of behaviours indicating the social position of individuals. However, a lifestyle is more than just observable behaviour (often referred to as lifestyle expression). It also includes opinions and motivations, including belief, interests and attitudes (often referred to as the underlying factors of a lifestyle) (Bourdieu, 1984; Munters, 1992; Weber, 1972). According to Heijs et al. (2009), lifestyles refer to elements varying from behaviour

(e.g., choice, use and consumption), behavioural domains (e.g., work, household) and factors influencing behaviour (e.g., intentions, preferences and values). The importance of lifestyles has increased in the last decades due to the rise of prosperity and individualisation and the decrease of social control (e.g., Kipnis, 2004).

Previous research on neighbourhood satisfaction and preferences only included lifestyles to a certain degree. These studies state that individuals with varying lifestyles seem to have different preferences concerning their residential location (Hesse & Scheiner, 2009; Van Acker et al., 2011). According to Brun and Fagnini (1994), individuals or couples who are socially active often prefer to live in city centres where there are a lot of cultural opportunities, while individuals who organise their life around their family prefer to live in suburbs. Pisman et al. (2011) and Van Acker et al. (2011) – performing their study in Flanders – state that people having various lifestyles do not only have different residential preferences, but also actually live in different neighbourhoods. People feeling safe in their neighbourhood and regarding economic status as an important value reside more often in suburban neighbourhoods compared to urban neighbourhoods (Pisman et al., 2011), while Van Acker et al. (2011) indicates that culture lovers tend to live in urban neighbourhoods while people with an active lifestyle live more in rural neighbourhoods. Furthermore, a certain homogeneity of lifestyles in a matching residential situation may improve residential satisfaction (Heijs et al., 2009).

Van Acker et al. (2011), using the same survey, subdivided the respondents into five lifestyles based on the organisation of holidays, literary interests and leisure activities performing exploratory factor analysis:

- Culture lovers: lifestyle related to cultural literature and cultural holidays. Culture lovers are socially engaged.
- Friends and Trends: lifestyle in which a person's social network is more oriented toward friends than toward family.
- Home-oriented but active family: lifestyle related to family and respondents' home, but also to different kinds of sports and self-organised, active holidays.
- Low-budget and active/creative: Combination of an active lifestyle with a low-budget lifestyle; also characterised by creativity.
- Home-oriented traditional family: Lifestyle focused on family and respondents' home, but also on traditional, mostly indoor, activities.

4.2.5 Travel mode preference

Travel mode preference can have an important influence on the residential location choice. People can self-select a certain neighbourhood in order to travel with their preferred travel mode (residential self-selection). A car lover, for instance, will mostly prefer living in rural environments due to limited parking problems and traffic congestion (e.g., Handy et al., 2005; Bhat & Guo, 2007; van Wee, 2009). De Vos et al. (2012), using the same survey, subdivided the respondents, based on second-order exploratory factor analysis on travel-related attitudes, in the two following categories of travel mode preference: Pro car alternatives and Pro car (for more detail, see Appendix).

5. Results

Table 3 indicates that urbanites and especially rural residents are rather dissatisfied with their neighbourhood. The mean values of neighbourhood satisfaction are situated between *not satisfied* (value 2) and *neutral* (value 3). Mean values of neighbourhood preferences are situated between *not important* (value 2) and *neutral* (value 3), indicating that respondents do not attach very much importance to neighbourhood characteristics. Urbanites are more satisfied with most neighbourhood characteristics than rural residents. However, neighbourhood satisfaction is not the same for all neighbourhood characteristics. Rural residents, for instance, are – in comparison with urbanites – more satisfied with the proximity of shops, leisure activities, public transport and work. Neighbourhood preferences differ less between urbanites and rural residents. Only 10 of the 19 preferences of neighbourhood characteristics differ between urbanites and rural residents (at $p < 0.05$). The respondents' mean values of neighbourhood satisfaction and preference positively correlate with each other ($R = 0.11$; $p = 0.00$); individuals who are satisfied with a certain characteristic will mostly attach a lot of importance to that particular characteristic and vice versa. Respondents also seem to attach quite a lot of importance to non-physical characteristics, like frequent contact with neighbours and the residents' composition. Safety aspects on the other hand, seem less important.

Table 3. Respondents' scores on neighbourhood satisfaction and preferences

	Neighbourhood satisfaction			Neighbourhood preferences		
	urban	rural	t-Test	Urban	rural	t-Test
Social safety	1.87	1.50	*	1.71	1.64	*
Traffic safety	2.32	2.00	*	1.88	1.80	*
Presence of bike lanes	2.78	2.50	*	2.06	2.00	
Presence of sidewalks	2.18	2.34	*	1.89	2.03	*
Sufficient parking place	2.48	2.03	*	2.36	2.19	*
Proximity of public transport	1.65	2.16	*	1.82	1.96	*
Proximity of shops	1.85	2.20	*	2.14	2.33	*
Proximity of leisure activities	2.10	2.40	*	2.32	2.39	
Proximity of family/friends	2.15	2.15		2.41	2.33	
Proximity of work	2.24	2.88	*	2.20	2.30	
Peacefulness	2.29	1.80	*	1.84	1.61	*
Presence of green areas	2.43	1.71	*	1.86	1.61	*
Neatness	2.29	1.72	*	1.89	1.80	
Appearance of buildings	2.35	2.01	*	2.41	2.47	
Strong interaction with neighbours	2.31	2.05	*	2.32	2.24	
Frequent interaction with neighbours	2.53	2.26	*	3.10	2.95	*
Residents' composition (age)	2.48	2.41		3.42	3.41	
Residents' composition (nationality)	2.37	2.10	*	3.47	3.44	
Distance between dwellings	2.46	1.96	*	2.88	2.50	*
Mean	2.25	2.10	*	2.32	2.26	*

* A significant difference in mean between urbanites and rural residents at $p < 0.05$

5.1 Neighbourhood satisfaction

In order to investigate which neighbourhood characteristics urbanites and rural residents are more satisfied with, we compared the means (two sample t-test) of the factor scores of the five factors for urban and rural residents (Table 4). Urbanites are, in general, more satisfied with their neighbourhood than rural residents. They are more satisfied with peacefulness and safety, neighbouring and the composition of the neighbourhood's residents. This contrasts with the results of Pisman et al. (2011), stating that urbanites in Ghent feel less safe than people living in more suburban neighbourhoods. However, these results are in line with Meeus and De Decker (2013) and Schuermans et al. (2014). Their studies in the region of Ghent indicate that rural residents feel less safe in their

neighbourhoods, seem to have more problems with inhabitants of diverse cultural and racial background (although this group is smaller in rural neighbourhoods than in urban neighbourhoods) and are rather dissatisfied with the limited interaction with neighbours. It also seems that safety issues are related with the composition of the neighbourhoods. Rural residents feel less safe partly due to an increasing diversity of inhabitants, while urban residents seem less bothered with this diversity. Results also suggest that residential turnover – which is mostly higher in urban neighbourhoods – does not seem to have a negative effect on (the satisfaction with) interaction with neighbours.

Rural residents, on the other hand, are more satisfied with the proximity of shops, leisure activities, etc. Urbanites and rural residents seem equally satisfied with the infrastructure for active travel in their neighbourhood. These results are quite surprising. Residents seem satisfied with typical neighbourhood characteristics of a different type of neighbourhood. We would have expected that urbanites are satisfied with the proximity of numerous facilities, since most of these facilities are present within short distance. Rural residents, on the other hand, are expected to be more satisfied with the presence of green areas and peacefulness, aspects which are more present in rural environments. It seems however, that residents did not find what they are looking for in their neighbourhood, resulting in a low satisfaction on these aspects. These results also suggest that urban residents are especially more satisfied with non-physical characteristics (e.g., neighbouring and residents' composition); while the satisfaction with physical characteristics (proximity of facilities and the presence of sidewalks, bike lanes and sufficient parking place) is less determined by the type of residential neighbourhood.

Table 4. Two sample t-tests of the factor scores of neighbourhood satisfaction

	Urban			Rural			t-Test
	Min/max	Mean	s.d.	Min/max	Mean	s.d.	
Peacefulness and safety	-1.7/3.3	0.17	0.95	-1.7/1.6	-0.49	0.74	*
Proximity	-1.7/3.8	-0.12	0.83	-1.5/3.1	0.35	0.92	*
Neighbouring	-1.9/3.4	0.07	0.91	-1.9/3.4	-0.21	0.89	*
Infrastructure active travel	-1.8/2.8	0.01	0.84	-1.7/2.8	-0.03	0.94	
Residents' composition	-2.5/4.5	0.06	0.85	-2.5/1.7	-0.19	0.74	*

* A significant difference in mean between urban and rural respondents at $p < 0.05$

There are some clear variances in the nature of different neighbourhood characteristics. An important differentiation can be made between physical attributes (e.g., presence of sidewalks/bike lanes and proximity of facilities) and non-physical characteristics (interaction with neighbours and residents' composition). When conducting a second-order factor analysis (principal axis factoring; promax rotation) on the (first-order) factors of neighbourhood satisfaction, we can see a clear differentiation between satisfaction with physical and non-physical neighbourhood characteristics. Two factors (based on scree plot and eigenvalues larger than one), explaining 67.0% of the variance, were retained: i.e. Non-physical aspects and Physical aspects (Table 5). The first- and second-order factor analysis explain 40.7% ($60.7\% * 67.0\%$) of the total variance, which is rather high in comparison with other second-order factor analyses (De Vos et al., 2012; Van Acker, 2010). Respondents with a positive score on the first factor are satisfied with non-physical aspects of their neighbourhood, such as interaction with neighbours and the composition of the residents. Respondents with a positive score on the second factor are satisfied with physical aspects, such as infrastructure for active travel and the proximity of facilities.

Table 5. Pattern matrix of the second-order factor analysis of neighbourhood satisfaction

Second-order factor →	Non-physical aspects	Physical aspects
First-order factor ↓		
Residents composition	0.84	
Neighbouring	0.68	
Peacefulness and safety	0.63	
Infrastructure active travel		0.97
proximity		0.27

In order to see which factors (socio-economic factors, lifestyles, travel preferences and neighbourhood type) influence these two types of neighbourhood satisfaction, we conduct two multiple linear regressions (Table 6).⁴ Although both regressions are significant (at $p < 0.05$), and therefore useful, the values of R^2 (respectively 0.16 and 0.08) are rather low. This means that variance in neighbourhood satisfaction is to a large extent explained by variables which were not included in the analysis.

In general, women, highly-educated people, people with a low-budget lifestyle and urbanites are more satisfied with their neighbourhood than other people. People with a high household car ownership and living in rural neighbourhoods will mostly be less satisfied. There are however, differences in the satisfaction between physical and non-physical neighbourhood characteristics. For instance, individuals with a large number of children in their household are more likely to be satisfied with physical characteristics but less with non-physical characteristics compared to others. Highly educated people, people with a home-oriented traditional family lifestyle and urbanites are more satisfied with the

⁴ The variables 'personal income' and 'education' are ordinal variables. However, in the linear regressions conducted in this study we treat them as though they are continuous (numeral). This is a reasonable choice since the number of categories of 'education' is large (i.e., thirteen) and the seven categories of 'personal income' have a constant interval (i.e., 500 euro) (Torra et al., 2006).

interaction with neighbours and the composition of the residents than other people. Household car ownership, living in rural neighbourhoods and a home-oriented but active family lifestyle have a negative influence on this type of satisfaction. The fact that rural residents are less satisfied with neighbouring factors suggests that they experience a lost sense of community and are less attached to their neighbourhood than urbanites. This is in line with Meeus and De Decker (2013), stating that – in Flanders – the sense of community is now stronger in urban neighbourhoods compared to more rural neighbourhoods, while this was the other way around some decades ago. Women and people with a low-budget lifestyle are mostly satisfied with the physical characteristics of the neighbourhood. People who prefer travelling by car alternatives and people with a home-oriented traditional family lifestyle are mostly less satisfied with physical neighbourhood characteristics.

Satisfaction with the residential neighbourhood according to socio-economic factors, lifestyles or travel preferences could, however, differ according to whether respondents live in urban or rural neighbourhoods. For the satisfaction with non-physical aspects of the neighbourhood we only found interaction effects ($p < 0.05$) between the 'home-oriented traditional family' lifestyle and the neighbourhood type. This lifestyle only (positively) affects this type of satisfaction for urban residents; while the effect of this lifestyle for rural residents is limited. For the satisfaction with physical aspects of the neighbourhood interaction effects exist between gender and the residential neighbourhood and between household car ownership and the residential neighbourhood. Men are more satisfied with physical aspects of the neighbourhood when living in rural neighbourhoods, while women are more satisfied with physical aspects when living in urban neighbourhoods. Finally,

respondents living in a household with a high car possession are more satisfied with physical aspects of the neighbourhood when living in a rural area; while a low household car possession results in a higher satisfaction with physical characteristics when living in an urban neighbourhood.

Table 6. Determinants of residential satisfaction

	Non-physical aspects			Physical aspects		
	Coef.	t-stat.		Coef.	t-stat.	
<i>Socio-economic factors</i>						
Age	0.005	1.38		0.001	0.37	
Gender	0.009	0.13		0.207	2.53	* #
Personal income	-0.030	-0.90		-0.025	-0.60	
Education	0.037	2.19	*	0.019	0.95	
Children in household	-0.081	-2.79	*	0.083	2.37	*
Household car ownership	-0.149	-4.07	*	-0.004	-0.10	#
<i>lifestyle</i>						
Culture lover	0.000	0.00		0.059	1.37	
Friends-and-trends	0.051	1.41		-0.048	-1.11	
Home-oriented but active family	-0.072	-2.16	*	0.027	0.67	
Low-budget and active/creative	0.045	1.33		0.084	2.04	*
Home-oriented traditional family	0.118	2.66	* #	-0.129	-2.42	*
<i>Travel preference</i>						
Pro car alternatives	0.007	0.19		-0.083	-1.94	
Pro car	-0.040	-1.09		0.035	0.79	
<i>Neighbourhood type</i>						
Actual residential neighbourhood	0.220	3.03	*	0.021	0.24	
R ²	0.16*			0.08*		

* significant at $p < 0.05$

interaction effects with neighbourhood type ($p < 0.05$)

5.2 Neighbourhood preferences

By comparing the means (two sample t-test) of the factor scores of the six neighbourhood preference factors for urban and rural residents we investigated which neighbourhood characteristics urbanites and rural residents find important (Table 7). Although differences

between urbanites and rural residents in neighbourhood preferences are smaller than for neighbourhood satisfaction, there are still some significant differences noticeable. Urbanites prefer a peaceful and safe neighbourhood. They also find the residents' composition and neighbouring aspects more important than rural residents.⁵ Rural residents attach more importance to proximity. So respondents tend to find typical neighbourhood characteristics of other types of neighbourhoods more important than typical characteristics of their actual neighbourhood. This suggests that most people are not really satisfied with their neighbourhood. In the case they had to choose a new neighbourhood, they will attach more importance to aspects which are not, or only limited, available in their present neighbourhood.

Table 7. Two sample t-tests of the factor scores of neighbourhood preferences

	Urban			Rural			t-Test
	Min/max	Mean	s.d.	Min/max	Mean	s.d.	
Accessibility	-1.6/3.9	-0.01	0.91	-1.6/4.4	0.03	0.97	
Peacefulness	-1.4/4.3	0.09	0.96	-1.4/2.8	-0.26	0.81	*
Proximity	-2.2/3.5	-0.04	0.82	-1.9/3.9	0.12	0.96	*
Safety/appearance	-1.9/3.9	0.04	0.88	-1.8/3.4	-0.11	0.84	*
Residents' composition	-3.0/2.1	0.03	0.85	-2.8/2.0	-0.07	0.87	*
Neighbouring	-2.2/2.9	0.04	0.87	-2.1/2.8	-0.12	0.89	*

* A significant difference in mean between urban and rural respondents at $p < 0.05$

The six factors of neighbourhood preferences are related to certain neighbourhood characteristics. However, they are not unambiguously related with a preference toward an urban or rural neighbourhood. In order to obtain factors which unambiguously reflect

⁵ The fact that urbanites attach more importance to the residents' composition seems to contradict with results from Table 3, where no significant differences in neighbourhood preferences regarding the residents' composition between urbanites and rural respondents were detected. These differences are a result of the 'residents' composition' factor, which is not only affected by the two variables referring to residents' composition, but also by other variables (e.g., distance between dwellings).

preferences for a certain type of neighbourhood, we factor analysed the obtained factors. This second-order factor analysis results in two second-order factors which are related with two neighbourhood preferences: i.e., Pro Rural and Pro Urban (Table 8). The two second-order factors explain 61.5% of the variance. Interpretation and eigenvalues larger than one are the most important determinants for the number of factors (principal axis factoring; promax rotation). The first and second-order factor analysis explain 38.4% (62.4% * 61.5%) of the total variance. However this is rather high for a second-order factor analysis, it indicates that other elements which are not included into the analysis influence neighbourhood preferences.

Table 8. Pattern matrix of the second-order factor analysis of neighbourhood preferences

First order factor ↓	Second order factor →	
	Pro rural	Pro urban
Peacefulness	0.81	
Safety / appearance	0.79	
Neighbouring	0.41	0.35
Residents composition	0.41	
Proximity		0.80
Accessibility	0.30	0.37

Respondents with a positive score on the first factor (Pro rural) prefer a peaceful and safe neighbourhood. They also attach importance to the appearance of the neighbourhood and to the residents' composition. Respondents with a positive score on the second factor (Pro urban) prefer a neighbourhood with shops, leisure activities, and other amenities nearby. Neighbouring and accessibility seem to be equally important for respondents with a positive score on the first factor and respondents with a positive score on the second factor.

In the following part we examine which aspects (socio-economic factors; lifestyles, travel preference and the actual residential neighbourhood) affect both types of neighbourhood preferences most. To this end we conduct two multiple linear regressions (Table 9), which are both significant ($p < 0.05$; R^2 is respectively 0.19 and 0.15). Socio-economic factors have an important role on neighbourhood preferences. Men and highly educated people will mostly prefer rural residential neighbourhoods. Women, persons with a high income and people living in a household with a high car ownership have a preference for urban neighbourhoods. Neighbourhood preferences do not seem to differ very much according to age and the number of children in household. However, the coefficients in Table 9 indicate that older people and people living in a household with many children do not seem to find neighbourhood characteristics that important. Lifestyles (except low-budget and active/creative) also seem to affect neighbourhood preferences. Individuals with a culture lover, friends-and-trends and home-oriented traditional family lifestyle seem to prefer rural neighbourhoods. Individuals with a home-oriented but active family lifestyle mostly prefer urban neighbourhoods. Car loving persons prefer urban neighbourhoods and persons who prefer travelling by car alternatives (public transport, cycling or walking) have a preference for rural residential neighbourhoods. Preceding results are quite surprising. We could have expected, for instance, that a car loving person with a high personal income and a home-oriented but active family lifestyle would prefer a rural environment. However, our results suggest the opposite. This is also being emphasised by the neighbourhood preferences of urbanites and rural residents. Although not statistically significant, urbanites have a slight preference for rural neighbourhoods, while rural residents slightly prefer urban neighbourhoods. Neighbourhood preferences according to socio-economic factors, lifestyles

or travel preferences could also differ according to whether respondents live in urban or rural neighbourhoods. However, no significant ($p < 0.05$) interaction effects were found between these variables and the neighbourhood type for neighbourhood preferences.

Table 9. Determinants of residential preferences

	Pro rural		Pro urban	
	Coef.	t-stat.	Coef.	t-stat.
<i>Socio-economic factors</i>				
Age	-0.010	-2.96 *	-0.009	-2.97 *
Gender	-0.203	-3.02 *	-0.089	-1.39
Personal income	-0.011	-0.32	0.065	2.06 *
Education	0.053	3.17 *	0.015	0.97
Children in household	-0.082	-2.87 *	-0.070	-2.57 *
Household car ownership	-0.048	-1.33 *	0.035	1.01
<i>lifestyle</i>				
Culture lover	0.086	2.41 *	-0.013	-0.37
Friends-and-trends	0.072	2.03 *	-0.030	-0.89
Home-oriented but active family	-0.206	-6.32 *	-0.049	-1.58
Low-budget and active/creative	0.014	0.42	0.052	1.61
Home-oriented traditional family	0.005	0.12	-0.213	-5.09 *
<i>Travel preference</i>				
Pro car alternatives	0.065	1.86	-0.084	-2.51 *
Pro car	-0.030	-0.82	0.181	5.20 *
<i>Neighbourhood type</i>				
Actual residential neighbourhood	0.025	0.35	-0.104	-1.54
R ²	0.19*		0.15*	

* significant at $p < 0.05$

6. Discussion

In this section we will try to explain the results obtained in Section 5. However, we have to be careful with conclusions as (i) the used data is quantitative – and we therefore do not really know *why* respondents prefer certain neighbourhood characteristics and *why* they are (dis)satisfied with them – and (ii) the respondents are not representative for the total population of Flanders.

Our results suggest that urbanites are more satisfied with their neighbourhood than rural residents. However, not only the physical neighbourhood characteristics explain this difference, but also neighbouring factors (i.e. social interaction with neighbours). Urbanites are more satisfied with social interaction with their neighbours and the residents' composition compared to rural residents. Rural residents, on the other hand, are more satisfied with the proximity of amenities. Besides a larger overall satisfaction of urbanites (compared to rural residents), there is also another striking result. Respondents tend to be more satisfied with typical neighbourhood characteristics of different types of neighbourhoods; urbanites are more satisfied with peacefulness and safety, while rural residents are more satisfied with the proximity of facilities. These results are not in line with an earlier study in the Ghent region, stating that suburban respondents are generally more satisfied with their residential environment compared to their urban counterparts (Pisman et al., 2011). According to this study there still exists a preference for living in a detached dwelling in a purely residential area. However, this study did not include rural residents.

It seems logical that people choose a neighbourhood in order to satisfy certain needs. For instance, an individual who desires to live nearby open spaces in a peaceful and green surrounding will mostly choose a dwelling in a rural neighbourhood. However, in Flanders, it seems that the chosen neighbourhood is mostly not able to fulfil these needs. Therefore, they are not satisfied with the typical aspects of that neighbourhood. In the case these individuals would have to choose a new residential location, they will consequently attach more importance to typical neighbourhood characteristics of different types of neighbourhoods. However, in the case they would relocate to another type of

neighbourhood, they would probably (at least after a certain period of time) be dissatisfied again, since the typical neighbourhood aspects of the chosen neighbourhood are probably again not ideally available.

These results can be partly explained by the land use pattern of the Flanders Region, where urban sprawl has always had free play. This results, however, in cities and especially countryside which are losing their typical qualities as residential location. Since most facilities are spread around the whole region, proximity decreases for urbanites. However, residential qualities diminish most for rural residents. The proximity of open and green spaces (which are important determinants of neighbourhood satisfaction (Arnberger & Eder, 2011; Ellis et al., 2006; Kearney, 2006; Lee et al., 2008)) has decreased rapidly; noise and light nuisance are present almost everywhere. Urban sprawl, the growth of infrastructure and functional urbanisation have resulted in changes in the rural landscape and spatial structure (Antrop, 2000; Smith, 2007), making it a less 'idyll' place to live in. Moreover, congestion problems are no more exclusively present at urban surroundings. Therefore, for instance, car lovers seeking for green and peaceful neighbourhoods will mostly be rather dissatisfied with their chosen rural neighbourhood.

An alternative explanation for the low residential satisfaction of rural residents is that these people might have been forced to live in these neighbourhoods due to budget restraints. According to Meeus and De Decker (2013) and Van Asche et al. (2008) a lot of people who moved from the city to more rural neighbourhoods indicate that they did not really wanted

to leave the city, but that rising dwelling prices (due to gentrification processes) forced them to live outside the city in order to live in a dwelling of their needs.

The 'Spatial Structure Plan for Flanders', the present structure plan (ratified in 1997 by the Flemish government) that gives a vision of the desired future spatial structure of Flanders, tries to restrict further urban sprawl by introducing a more active oriented form of planning. The most important spatial principle in this plan is called 'deconcentrated clustering', suggesting that residential areas, industrial areas and other kinds of activities need to be clustered in cities and town centres ('clustering'), taking in account the existing dispersed land use pattern ('deconcentrated') (Albrechts et al., 2003; Scheers, 2006). In order to realise this goal, this plan limits the amount of additional dwellings permitted to build in countryside municipalities to maximum 40%. The 'Spatial Structure Plan for Flanders' strives for at least 60% of additional dwellings in urban areas (Ministerie van de Vlaamse Gemeenschap, 1997). However, this 60/40 relation almost equals the present distribution of Flemings in urban versus rural municipalities (i.e., 58.4/41.6) (<http://www.statbel.fgov.be>; Ministerie van de Vlaamse Gemeenschap, 2011). The execution of this regulation will consequently not lead to a reduction of urban sprawl, but only to a status quo of the present, undesired situation. Besides, the tools provided to achieve this goal are rather weak: the promotion of residential development is done by designating additional construction land for housing in urban municipalities, but there is no tool to slow down residential development in rural municipalities (e.g., by converting it into protected open space) (Boussauw et al., 2012). An increase in the relation between additional dwellings in

urban/rural municipalities is necessary in order to cluster activities in urban environments and diminish urban sprawl.⁶

The use of Transferable Development Rights (TDR), a spatial planning tool originated from Northern America, giving the opportunity to transfer development rights from an area where development is undesired (e.g., countryside) to an area where development is more feasible (e.g., urban environments) could be an interesting tool to slow down the undesired residential development in rural areas (Johnston & Madison, 1997; Kaplowitz et al., 2008; Levinson, 1997; McConnell et al., 2006; Mills, 1980). TDR could give solace for Flemish prospective residential areas in rural municipalities which are not built-up due to an overestimation of the population growth in the nineteen sixties and seventies. A compensation for not building on these areas, financially or physically (by giving the opportunity to build upon land in urban environments), can prevent a further damage of the countryside. These prospective residential areas, which are not built-up yet, can be converted into areas with other destinations (e.g., nature), with the help of spatial implementation plans ('Ruimtelijke UitvoeringsPlannen' in Dutch, or RUPs) (De Vos & Witlox, 2013).

More people living in urban environments and restricting urban sprawl is not only beneficial for peoples' residential satisfaction, but also for a more sustainable travel behaviour (reducing greenhouse gas emissions and congestion) - due to shorter distances and a higher use of car alternatives (Cervero & Kockelman, 1997; Ewing et al., 2008; Gonzalez, 2005) - a

⁶ According to Weitz and Moore (1998), compact development implies that at least 75% of new housing should be built within urban areas.

higher ecological sustainability (Alberti & Marzluff, 2004; Ewing, 1997), and a better public health (Booth et al., 2005; Ewing et al., 2003; Lopez, 2004). Obviously, rural residents must be willing to relocate to urban neighbourhoods. Since neighbourhood satisfaction of rural residents is low, and neighbourhood satisfaction is negatively correlated with residential mobility (Oh, 2003; Speare, 1974), rural residents will probably have a rather high intention to move to other locations, such as urban neighbourhoods. Improving the proximity of amenities in urban neighbourhoods – by increasing density and diversity (based on principles such as Compact City, New Urbanism and Transit-Oriented Development) – can then help to increase urbanites' neighbourhood satisfaction, as results indicate that proximity falls short of the urbanites' expectations. This might result in urban residents being (more) satisfied with their residential location and will consequently result in urbanites having a low intention to move to other – more suburban-style – neighbourhoods.

7. Conclusion

It seems that a far-developed urban sprawl in Flanders has contributed to the conversion of rural environments from cherished residential places into places where inhabitants are rather dissatisfied. Open spaces, quietness and green areas, reasons why people deserted cities since the nineteenth century, are now aspects that are lacking in the Flemish countryside. Furthermore, rural residents are less satisfied with safety aspects, interaction with neighbours and the composition of the neighbourhood's residents. More immigrants and former urbanites moving to rural municipalities, together with (functional) urbanisation might consequently have contributed to this low neighbourhood satisfaction of rural residents (see also Meeus & De Decker, 2013). A situation of rural preference has switched

into one of urban preference, at the expense of a sustainable spatial planning. It seems that, in situations of good accessibility of the countryside (partly after the introduction of the railway and especially after the introduction of the car) and a lack of urban sprawl (availability of green, open spaces in rural environments) neighbourhood preferences are rather balanced. However, a well-developed urban sprawl can bring this equilibrium out of balance. The absence of typical aspects of rural neighbourhoods (e.g., quietness and green areas) brings along urban preferences, just as the overpopulation of cities in the nineteenth century, cancelling out the typical urban aspects (e.g., proximity of facilities), brought along rural preferences. In order to maximise neighbourhood satisfaction, especially for individuals with rural preferences, it is important to restrict further urban sprawl by spatial planning regulations. The contrast between city and countryside has to increase, especially in diffuse regions, like Flanders. This will not only increase neighbourhood satisfaction of rural residents (since preferred neighbourhood aspects will be present in their neighbourhood), it will also lead to more ecological sustainability and a sustainable travel behaviour.

As the dispersed Flemish land use pattern might clearly differ from land use patterns in other regions – e.g., regions clustering activities in urban areas – it might be useful for future studies to compare residential preferences and satisfaction of urban and rural residents in different types of regions. Doing so, this might provide additional information on how strong the effect of the built environment on residential preferences and satisfaction is.

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Appendix

Travel mode preferences were retained based on 118 variables on opinions and habits concerning leisure locations and mobility. In order to obtain factors that unambiguously reflect travel mode preferences, it was necessary to factor analyze the obtained (first-order) factors (second order factor analysis) (De Vos et al., 2012).

Pattern matrix of the second-order factor analysis of travel mode preferences

First-order factor ↓	Second-order factor →	Pro car alternatives	Pro car
Accessibility public transit		0.822	
Pro public transit		0.603	
Accessibility bicycling/walking		0.467	
Proximity of shops, bars, ...		0.411	
Pro bicycling/walking		0.316	
Environmentally aware			-0.908
Pro car			0.642