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This master thesis is devoted to gaining a better understanding of the driving forces of the transformation from suburban to post-suburban municipalities. Post-suburbanization is understood here as the growth and diversification of population, employment and leisure in former suburbs. In the past ten years the concept has gained attention in the geographical literature, but scholars have not yet identified which are the driving forces of the process. It is assumed that it can only occur if a municipality is perceived as attractive for settlement by firms and residents, and that this attractiveness is expressed in land prices. The land prices can thus be used as intervening variable for estimating the importance of the attraction factors for post-suburbanization. Both absolute accessibility (access to public transport or high way) and relative accessibility (the degree of accessibility of employment) are expected to be of pivotal importance. Therefore the research question is: *To what extent do absolute and relative accessibility contribute to growth and diversification of the population, employment and leisure possibilities in the northern suburbs of Hamburg?*

The sample region consists of 17 municipalities in the northern urban field of Hamburg. By means of both a quantitative and qualitative analysis of the municipal developments the importance of these attraction factors is investigated. The quantitative analysis consists of (multiple) regressions and additionally Most Different Systems Designs (MDSD) and Most Similar Systems Designs (MSSD). The qualitative analysis consists of semi-structured interviews with 17 urban planners of the sample municipalities and with 7 spokespersons from important regional (semi)private economic agencies and institutions.

The quantitative analysis has revealed that absolute accessibility is hardly related to the post-suburban outcomes. Relative accessibility has a stronger effect on both the land prices and the post-suburban outcomes. Because the regressions did not answer the main question (due to the small sample size), MDSD and MSSD were used to gain a better understanding of the relations. It is found that multimodality is not a necessary condition for attractiveness; the presence of either a train station or of a U- or S-Bahn station together with the proximity of a high way exit is enough. The interviews made clear that besides the hard accessibility factors also soft factors (the quality of services and infrastructure and the image of the municipality) are of importance. Yet there is another factor of determining importance; the adjustment potential of the municipality. This potential entails the degree to which a municipality is able to influence its development and attractiveness by means of (1) the willingness and views of the local council, (2) the amount of land in municipal ownership and (3) its financial resources. For instance, without financial resources or political willingness a municipality cannot influence its attraction factors and it will lose its attractiveness. Some municipalities provide that unique mix of hard and soft attraction factors and adjustment potential which makes them attractive enough for post-suburbanization. This leads to greater regional diversity than in regions with traditional homogeneous suburbs. This greater regional diversity is another characteristic of post-suburbanization which has not been mentioned by the literature.

An additional part of this research was to investigate how municipalities can keep post-suburbanizing in a context of socio-demographic change. This change entails particularly the ageing of the population and the increasing ethnic migration. It is found that for a municipality to keep growing it must satisfy three necessary conditions; the hard and soft attraction factors need to be present, the municipality must have a high adjustment potential and finally the municipality must employ an active urban strategy to tackle the population decline. This strategy entails urban expansion for especially young families. At the same time the municipality must invest in the services and facilities which are demanded by this target group. Even if a municipality can withstand the unwanted demographic changes based on the attraction factors and its adjustment potential, it is still possible that that municipality chooses the wrong strategy, leading to negative developments. Thus, if a municipality does not satisfy one of these conditions, post-suburbanization will not take place anymore, because the population will inevitably decrease.

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PREFACE

This thesis is written as part of the Research master Human Geography and Planning at the Utrecht University and was realized in the period June 2008 till July 2009. I would like to take the opportunity to express my gratitude to my supervisor Prof. Dr. P. Hooimeijer, who helped me structure my thoughts and guided me through this period. I highly appreciate his critical, stimulating and constructive remarks.

During the period September 2008 till March 2009 I attended the Hafencity University in Hamburg to follow urban planning courses and I used that time abroad to acquire my qualitative data via interviews. I owe great thanks to the interview partners of the seventeen sample municipalities and the seven interview partners of the (semi) private economic institutions and agencies. I greatly value their friendliness and willingness to help me acquire my data and the time they took for the interviews. The information that I obtained from the interviews were a great help to answer the research questions.

Josje Hoekveld

Utrecht, 17th of July 2009

INTRODUCTION

In the past decades the hierarchy between core city and periphery has changed; the suburbs have matured into a configuration which differs from the traditional suburbs and which consists of more or less independent settlements with housing,- labour- and leisure facilities. In traditional suburbs the population commutes to the core city for employment and recreation. Yet, nowadays we experience that the suburban population is able to work in their own municipality, reducing suburb-to-city commuting. In addition, the population also does not need to travel to the core city for recreational purposes anymore. Traditional suburbs experiencing this process of growth and diversification of population, employment and recreation, are *post-suburbanizing*, according to the definition of Brake et al. (2005).

Sieverts, who drew attention to this phenomenon in Europe, coined the outcome of this process the *Zwischenstadt*. According to him it is “a structure of completely different urban environments which at first sight is diffuse and disorganized with individual islands of geometrically structured patterns, a structure without a clear centre but therefore with many more or less sharply functionally specialized areas, networks and nodes” (Sieverts, 2003, 3). This description clearly does not give insight in the driving forces or the actual spatial outcomes of post-suburbanization. Sieverts focuses on the architectural interpretation of the *Zwischenstadt* in relation to the compact city and especially the emotional response of planners to this new phenomenon. In addition, according to Sieverts the *Zwischenstadt* does not necessarily occur on the municipal scale, but can take place on sub-local or supra-local scales, which makes it even harder to analyse.

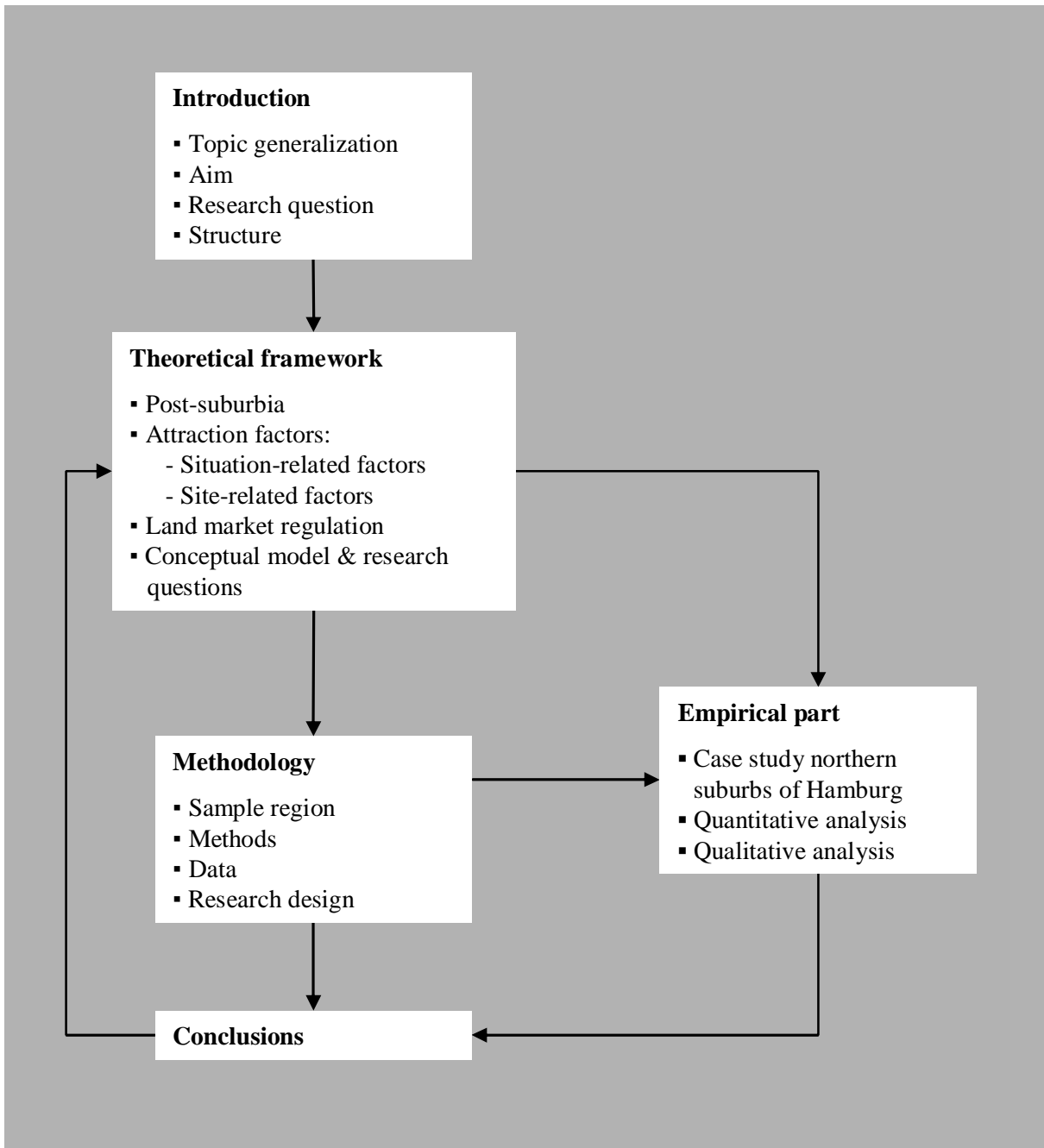
Although Sieverts and several other scholars have attempted to shed light upon the process of post-suburbanization or *Zwischenstadt*, there is no consensus on explaining *why* one settlement develops in a post-suburban manner and another does not. Some have declared that macro factors such as economic mechanisms, fiscal control instruments, social trends and political regulations are of pivotal importance (Brake et al., 2005). Yet, in a region in which all municipalities are exposed to these trends and only some experience post-suburbanization these trends cannot explain the differences. Therefore the trends on the local level need to be explored, which has not been done before.

The question is which local factors contribute to this growth and diversification. In order to answer this question insights are needed about which local amenities contribute to a high perceived attractiveness of a municipality to firms and residents. A distinction can be made between site- and situation characteristics of a municipality. The situation characteristics are the (relative) accessibility of employment in the region and the site characteristics are among others the (absolute) accessibility by means of high way- and public transport access, but also environmental qualities, taxation climate, the level of retail and services etc.

In this research the (relative) importance of these site and situation factors for the occurrence of post-suburbanization will be investigated by means of a case study in the northern suburbs of Hamburg in Germany. The urban agglomeration of Hamburg is very suitable for investigating the effects of absolute and relative accessibility since here the division between highly accessible and less accessible municipalities is strict. It is thus possible to discern the importance of accessibility for municipal development. The research question is thus as follows: *To what extent do absolute and relative accessibility contribute to growth and diversification of the population, employment and leisure possibilities in the northern suburbs of Hamburg?*

By means of a quantitative research it is aimed to discover regularities in the relations between the accessibility variables and the post-suburban variables. Then, a qualitative research will uncover how the irregularities and unique characteristics of each municipality play a role in post-suburbanization. These two analyses will result in an explanatory model of post-suburbanization. Finally, it will be investigated how municipalities are able to keep post-suburbanizing in a changing context of socio-demographic change.

Figure I | Structure of the thesis



Little is known about the driving forces of post-suburbanization. Yet, it is clear that in order for a municipality to grow and diversify, a municipality needs to offer a variety of attraction factors which are appealing to firms and residents. In this theoretical framework, these attraction factors will be discussed and this will accumulate in the formulation of the conceptual model and the research questions.

§ 1.1 | Post-suburbia

Borsdorf and Zembri (2004, 9) define the Zwischenstadt or post-suburbs as ...“new elements in the urban-rural system [which] are characterised by attractive living quarters, new infrastructure in commerce and services, attractive employment opportunities mostly in the tertiary sector (commerce, services, offices, logistics, leisure, entertainment), but also in industry (industrial and business parks), a new lifestyle of the inhabitants which cannot be described in the old categories of urbanity or rurality, and high degrees of personal mobility and spatial-economic dynamics”. This urban-rural system cannot be seen as an urban-rural dichotomy, but should be seen as an urban-rural continuum, in which the dispersed pattern of activities of the population does not concentrate on a *place*, but on a *region* (Adell, 1999).

Borsdorf (2004, 12) has attempted to list the differences between suburbia and post-suburbia, see table 1.1. Although his listing is rather spectacular in its terminology, it does indicate that the former monofunctional and monotonous suburbs have transformed into more or less independent post-suburbs, in which both the population, employment and recreation has diversified. According to Kling et al. (1991, 8) “the most important aspects [of post-suburban regions] are their origins in the suburban periphery from which they have broken away, and the emergence within them of a new decentralized environment possessing the economic vitality and cultural diversity formerly associated with the traditional city”.

Table 1.1 | Characteristics of suburbia and post-suburbia

<i>Characteristics</i>	<i>Suburbia</i>	<i>Post-suburbia</i>
Impulses	Demographic growth, urban sprawl	Fall of the iron curtain, immigration from East and South Europe towards the core cities, individual mobility
Conditions	Housing demand, industrialised construction, low price levels, accessibility by public transport	Transformation, globalisation, social change, lifestyle diversity, segregation, polarisation, post-fordistic flexibilisation, motorisation
Image	Living with nature, escape from pollution	Life styles, (post)modernity, sportsmanship, leisure orientation
(Infra) structure	Only basic infrastructure, only few employment opportunities	Specialised infrastructure, employment opportunities, commerce
Forms and structure	Sterile architecture and green areas	Diverse architecture and green areas, but "ufos" and "clones"
Actors	Lower and middle class, young families	All classes, investors, business people, "developers", sports people
Results	"Concrete towers", "dormitory towns", "green widows", monotony	Social, economic and spatial fragmentation, multi-functionality, transformation of rural space, decline of centrality in central locations
Function	Supplementing the city centre	Independent zones, neither urban nor rural

Source: Borsdorf, 2004, p.12

Another illustration of the great amount of (sometime conflicting) definitions of post-suburbia is provided by Lucy & Phelps (1997, 259); they “define a post-suburban era in terms of inner suburban population loss and relative income decline, suburban employment increase, suburban outcommuting reduction, exurban population and income increase, and farmland conversion.” Obviously, this definition differs from the definitions above in the sense that the inner suburbs closest to the core city already experience population loss. Also, they incorporate the exurban population and farmland. The definition of post-suburbia by Brake et al. (2005) expresses more precisely what is happening. In their view, post-suburbs can be characterized as follows;

- suburbs which are functionally enriched with regard to employment and (retail- and recreation) facilities,
- diversification of the social- and population structure, housing types and architectural forms
- they have internal location qualities in the form of an own profile/identity and display independent dynamics in relation to the core city
- they provide a genuine attraction which means being a primary destination for residents and firms and not a secondary after the core city
- they are an inner action space which means that the post-suburb provides for the common activities such as living, working and recreating, reducing suburb-to-city commuting

The commonalities in these two definitions will be used to construct the operational definition for this research; *post-suburbanization is a process of growth and diversification of the population, the employment and the recreation in former suburbs.*

This operational definition is however not able to explain *why* these processes are occurring. The changes in the distribution of urban and regional populations – such as the change from suburbia to post-suburbia – can be understood from the *regional restructuring hypothesis* or the *deconcentration hypothesis*, which are according to Renkow and Hoover (2000) two competing approaches.

The regional restructuring hypothesis postulates that changes in the distribution of the population depend on changes in the distribution of the employment. Such changes in the organization of production are linked to macro factors such as changes in the global distribution of labour, technological innovations, international competition etc. Clearly, Borsdorf advocates this approach; see the impulses and conditions in table 1.1.

The deconcentration hypothesis on the other hand assumes that changes in the distribution of the population are determined by changing locational preferences of entrepreneurs and consumers (Renkow & Hoover, 2000). Negative externalities of urban areas together with locational amenities in the urban surroundings for instance determine where people live and where firms settle. This approach leaves more room for both the importance of site-specific characteristics (attraction factors) contributing to higher municipal attractiveness.

Bierens & Kontuly (2008) identify three other possible explanations;

- *period effects*, indicating business cycle fluctuations, regional boom- and bust experiences, and changing socio-demographic compositions,
- *housing costs reasons* including both the high cost and the availability of housing,
- *government-policy explanation* indicating among others planned deconcentration initiatives which redistribute jobs and people to rural and peripheral areas.

In my opinion, the period effects can be captured under the regional restructuring hypothesis and the housing costs reasons under the deconcentration hypothesis. Yet, the addition of the government policy explanation is very valuable, since post-suburbanization cannot take place without the accommodation of growth and diversification by regional and local governments.

The question is whether these three explanations are indeed mutually exclusive or that they all can be used to come up with a comprehensive explanation. Without technological (mobility) innovations in line with the regional restructuring approach for instance, people are not able to live further away from their work. Yet, people will most definitely not live in an area which does not correspond with their personal preferences and choice sets, which follows the logic of the deconcentration hypothesis. Another example of this synergy between the two hypotheses is the socio-demographic change occurring all over Western Europe; as populations are ageing and fewer children are being born, the composition of the population changes and concomitantly the locational preferences.

The influence of the government as pointed out by Bierens and Kontuly should be mentioned here. If the government decides that the construction of more dwellings is not allowed, the population may wish to live in a certain municipality, but their wishes will not be fulfilled. In sum, the regional restructuring and deconcentration hypothesis should not be seen as competing approaches, but rather as complementary approaches, in which the regional trends explains the occurrence of the phenomenon and the local trends (preferences and government policy) explain the location of the phenomenon. This research will focus on the deconcentration hypothesis and the government-policy explanation

§ 1.2 | Attraction factors

One way of uncovering attractiveness is to determine the factors which drive land prices. According to Diamond (1980) the prevalence of attractive site- and situation variables determines the land prices of the municipality and as a consequence, the land prices indicate the degree of attractiveness.

The site factors relate firstly to the infrastructure-based accessibility (Geurs & Ritsema van Eck, 2003), which denotes the degree to which a settlement is connected to road- and/or railway systems and in this research will be called absolute accessibility. Secondly, other site factors are the social and political structure of the municipality, environmental quality, standard of retail and services, and the quality of the (environment of the) housing stock and business sites etc.

The situation factor relates to activity-based accessibility or the level of access to spatially distributed activities (Geurs & Ritsema van Eck, 2003). The spatial distribution of activities “is characterized by both the amount and the location of different types of activities. The activity element is alternatively called the 'attractiveness' of a particular location as a trip destination” (Handy & Niemeier, 1997, 1176). In this research, these activities are employment. The degree of access to employment is called relative accessibility. The accessibility of employment/ employees for residents and firms is a dominant force in determining the search area (Miller, 1982).

§ 1.2.1 | Site-related attraction factor

These factors relate to the amenities which can be found in a municipality and determine which municipalities are more attractive than others. As Davoudi (2003, 989) points out in the case of firms, “it is ironic that as capital is becoming ever more stretched out and mobile,

it is the place-specific qualities that are becoming the defining factors in its search for profitable production sites". For **firms**, such place-specific qualities can be the taxation climate, the attitude of the municipality towards businesses, access to markets, suppliers and capital and the local business climate is important (Leitham et. al, 2000). In addition, Louw (1998) found that for firms, accessibility and proximity to clients and employees, status of the neighbourhood, parking space etc. are the most named factors in the decision making process of relocating firms. Financial aspects were the second most named factors. With regard to the premises-related qualities, characteristics of the building concerning the layout and setup of the premises were the most important, whereas building design and technical facets were hardly of any importance. Yet a distinction can be made between firms preferring ownership of the site and building and firms who are renting the premises; the spatial factors are most important for the former, whereas these factors are less important for the latter (Louw, 1996). Also, owner-occupied businesses are less likely to move than renting business, because the costs of the sale of the property are too high (Pellenbarg et al. 2002). Another factor is the type of absolute accessibility; Button et al. (1995) found that high way accessibility is appreciated as the most important location factor for firms in general, whereas train station accessibility is only marginally important.

The question is whether this appreciation has its reverberations on land prices. Indeed, Buttons finding is supported by Sherry (2005) who states that only access to a high way exit significantly influences the land prices or rent of offices and access to a light rail station has no significant effect. Debrezion et al. (2007) found that the presence of a train station influences commercial property prices more than residential property prices.

Apparently, absolute accessibility is an important location factor for firms, which is conformed by the literature (Harvey, 2000; Müller & Rohr-Zänker, 2006). For **residents**, however other factors might be more important. Indeed, factors such as the quality and the environment of the dwelling are very important in residential location decisions (Borgers and Timmermans, 1993). It can be expected that the appreciation for such factors is reflected by the land prices. Indeed, it is found that the presence of a wooded area, the share of owner-occupied dwellings, the type (detached) and size of the dwelling and the social status positively influence housing prices. A higher proportion of non-Western immigrants on the other hand has a negatively influence (Visser et al, 2008). These findings are supported by Waddel et al. (1993); they have shown that different types of land use influence land prices; the presence of parks significantly influences residential land prices. Also they found that ...“most buyers are willing to pay more for their home if it is located among relatively wealthier neighbors” (1993, 132). But also characteristics such as the age of the dwelling or the size of the living room have a significance influence.

It can be expected that these dwelling- and environment related qualities are appreciated differently by different population groups. For instance, older people have other requirements of a dwelling and the social infrastructure than young families. This is important for post-suburbia, as they have to meet the preferences of a diverse population. So it is important to verify whether the literature has found proof of such differences.

Fernandez et al. (2005) discerns the appreciation for different amenities between different socio-economic groups in his case study of Detroit. They found that low-income groups appreciate social comfort (familiarity with the area, closeness of friends and family) higher than high-income groups. Families with children appreciate soft factors such as closeness to work and school more than other socio-economic groups. The appreciation for openness and naturalness showed no significant differences between the groups. Households

without children appreciate the aesthetic qualities of the dwelling more than other groups. Strangely, Fernandez et al found that the especially households with annual incomes over \$125,000 and annual incomes below \$50,000 appreciate openness and naturalness more than other socio-economic groups.

Song & Knaap (2004) concluded that for single-family dwellings the house prices increase when there is a public park of neighbourhood store present. House prices decrease with decreasing distance to multi-family housing. Interesting is that single-family housing prices increase when there are relatively more service jobs in the neighbourhood and when the population of the neighbourhood is homogeneous. This would mean for post-suburban municipalities that the occupants of single-family dwellings would appreciate it if the multi-family dwellings (which are necessary in a diversifying post-suburban population) are not built in their neighbourhood. Additionally, the diversification of the employment in the form of increasing employment in services is an aspect of post-suburbanization which positively influences single-family housing prices.

For the case study area the above means that those amenities offered by a municipality determine which socio-economic groups will be attracted. In addition to these differences between socio-economic groups, also differences exist within socio-economic groups, due to different phases of the life cycle (Kim et al., 2005). The traditional suburbs have been developed for young families, in which the main preferred housing type is detached single family (Myers & Gearin, 2001). Yet, as the children reach adulthood, this type of housing may not be the dominant preferred type anymore. As the population ages, residential preference will shift towards amenities for senior citizens. The question is whether the municipality keeps aiming at young families or adjusts to the shift in preferences. Attractiveness thus can change over time as the population changes.

Although it appears that these dwelling- and environment qualities are more important to residents than absolute accessibility, accessibility can still be expected to be important. So the question is again whether the appreciation of accessibility is expressed in land prices. The literature has revealed that absolute accessibility in the form of the presence of a train station or an exit nearby does influence the residential land prices, but a distinction can be made between different population groups. Within the residential neighbourhoods, absolute accessibility has a higher influence on land prices in low-income neighbourhoods than in high-income neighbourhoods (Nelson, 1998; Adair et al., 2000). This means that high-income groups are less susceptible to public transport facilities than low-income groups. However, it is also possible that closeness to high ways and train stations and property prices are negatively related, because of the negative externalities such as noise or crime (Bowes & Ihlanfeldt, 2001). This finding is also presented by Strand & Vågnes (2001); in their study the average residential property prices of a dwelling located within 100 meters of a train station increases with increasing distance from the train station and as from 100 meters the prices decrease with increasing distance.

§ 1.2.2 / Situation-related attraction factors

Kockelman (1997) found that the proximity of work significantly influences property values, as expected. This relationship is widely known thanks to standard urban economic theory. Within an area with several nodes of employment, the municipality out of which most employment can be reached should logically be regarded as most attractive. On the other hand it is often said that due to increased mobility potential people are able to live further away from work. Therefore other site-specific characteristics are possibly appreciated more

in location decisions than work-place proximity. Especially in the case of suburban municipalities the intrinsic characteristics of that municipality are expected to be more important than proximity to work, as in traditional suburbs the amount of employment is limited. Yet the growth and diversification of employment which occurs in post-suburban municipalities contributes to higher attractiveness, since people do not need to travel to the core city for work anymore but can work in or near their post-suburban municipalities. The validity of these assumptions can be tested by investigating the accessibility of employment in relation to the land prices. This requires a measure for employment accessibility, which in this research is called catchment potential. Since Hamburg provides such a large pool of employment, as a consequence the municipalities at a close distance from Hamburg will have a higher catchment potential than those located further away. All other factors being equal, the municipalities close to Hamburg would logically be regarded as more attractive. However, it is possible that in the distant municipalities other factors can compensate this low catchment potential. Therefore, other (site-related) factors need to be discussed too. The catchment potential will be elaborated upon in the methodological chapter.

Absolute accessibility is more important to firms than to residents and relative accessibility is important for both firms and residents. Dwelling/premises-related qualities are generally more important to residents than to firms. However, the appreciation for these factors can differ strongly between different types of firms and households. In post-suburban municipalities this differentiation in appreciation may even increase, making it harder for developers to develop dwellings and premises fitting the needs of the demanders. The literature mentioned above discussing the relations between attraction factors and land prices assumes that the municipalities providing the attraction factors also provide enough land for those demanders. However, in reality this supply of land is often limited, due to planning and land market regulations. The question is how these regulations can influence the supply of land and the attractiveness of municipalities. This will be discussed in the next paragraph.

§ 1.3 | Land market regulation

There are two ways in which a municipality can influence its attractiveness for firms and residents. The first way is by means of **planning**, in which those types of dwellings and business premises are offered that are appreciated. The government can influence the supply of housing only to a limited extent, as private developers operate largely independent. In countries in which the supply of rental housing is controlled by the government, such as the Netherlands, the government can actively influence the housing stock to a large extent. In countries in which the supply of housing is left to private parties, such as in Germany, the government can only passively exert influence by means of instruments such as housing allowance, building subsidies residential zoning regulations and taxation measures (Clark & Dieleman, 1996).

In Germany, the social rental sector is relatively small, and especially in the traditional suburbs, the single-family owner-occupied dwelling prevails. This is largely induced by governmental policy called *Eigenheimzulage*, or owner-occupancy allowance, which aim was to encourage the production of owner-occupied housing. This policy was in force between 1997 and 2005 and the revocation of this policy made the creation of owner-occupied dwellings less attractive, which may jeopardize further development of post-suburban municipalities.

For business premises, the government can allocate business sites in land use plans, but only if those sites are in ownership of the municipality and if the site is not part of an

ecological protection zone. So also in the sense of business site creation, the possibilities of the municipality are restricted.

In Germany the municipal scale is dominant and to a large extent autonomous in determining the land use developments (Kraemer, 2006). The instrument of zoning regulation is used to counteract or enable certain developments. These developments have to fit by and large in the framework set by the Land, but within this framework the municipality is free to decide upon the developments (called the *Gegenstromprinzip*). Whether a municipality is eager to extend outwards (and consequently enables expansion in the zoning plan) depends on the willingness of the incumbent council. A local council, in which the majority belongs to conservative or green parties, may be expected to prefer rather conservative urban development. However, the influence of the municipality hardly extends the limits of the zoning plan. They may determine which areas are open for development and consequently grant the parcels to buyers or developers but what is build is determined by the buyer/developers. If the municipality wishes to develop an area with mixed housing types, they cannot force their wishes upon the buyer/developers. The only way the municipality can influence in detail the use of the parcel is by making contracts with the buyers of the parcel or by holding a competition in which different developers can present their plans for the parcels. So it may be expected that municipalities with sufficient land and also land in municipal ownership, have better chances in steering their development than those who do not have land (Giuliano, 1989).

The second way in which municipalities can steer their attractiveness is by means of **taxation**. The municipality collects property taxes for built-up area (*Grundsteuer B*) and the height of the total tax sum can be influenced by the tax percentage (*Hebesatz*). This tax percentage is also used for corporate taxes. An example of how this system works is worked out for the municipality Ahrensburg, with property tax is 290 and tax percentage is 325%:

Fiscal real estate value of the dwelling		€50.000
Property tax base (<i>Grundsteuermessbetrag</i>)	3,5% x €50.000	€175,00
Tax percentage (<i>Hebesatz</i>)	325%	
Annual property tax amount	3,25 x €175,00	€568,75

The height of the property tax base is determined by the financial office of the Land, which is for residential use (Grundsteuergesetz, §15):

3,1 % for semi-detached dwellings

2,6 % for detached single family dwelling until €7.500 property value

3,5 % for detached single family dwellings for the property value which exceeds €7.500

The height of the tax percentage is for the municipality to decide, therefore a low percentage can be used to enhance the attractiveness of the municipality. The question is whether taxation is as much as an issue for residents as it is for firms. In the literature it is found that the height of the taxation is more important in location decisions for firms than for residents. According to Kohlhase & Ju (2007) some branches are more receptive to property taxation than others; they find in their case study in the US companies that the oil- and gas branch are the most receptive, followed by manufacturing. Firms in the service sectors are less receptive. However, this appreciation of low taxation should be seen in relationship with the services offered by the municipality. As Schneider (1985) discerns, some firms are willing to pay more taxes if that corresponds with a higher quality of public services. Others on the other hand settle for lower quality services as long as the taxes are

low. This assumption corresponds with the *benefit view* of taxation, which means that “the property tax is effectively a user charge that is paid in exchange for the benefits of local public service” (Zodrow, 2007, 6). Schneider also states that tax exemptions for certain firms may weaken the local tax base, which means that a municipality has less resources to maintain services and facilities etc. This development threatens the future competitiveness of that municipality, for the strength of the local tax base is according to Schneider at least as important as the height of the taxation.

In Germany, the property taxes are higher than taxes for agricultural land use. As a consequence it is profitable for a municipality to transform agricultural land into built-up land, since the municipality will obtain more tax revenues (Gutsche, 2003). This increase in built-up land then spurs further development of the municipality, which may take the form of post-suburban development.

§ 1.4 | Conceptual model and research questions

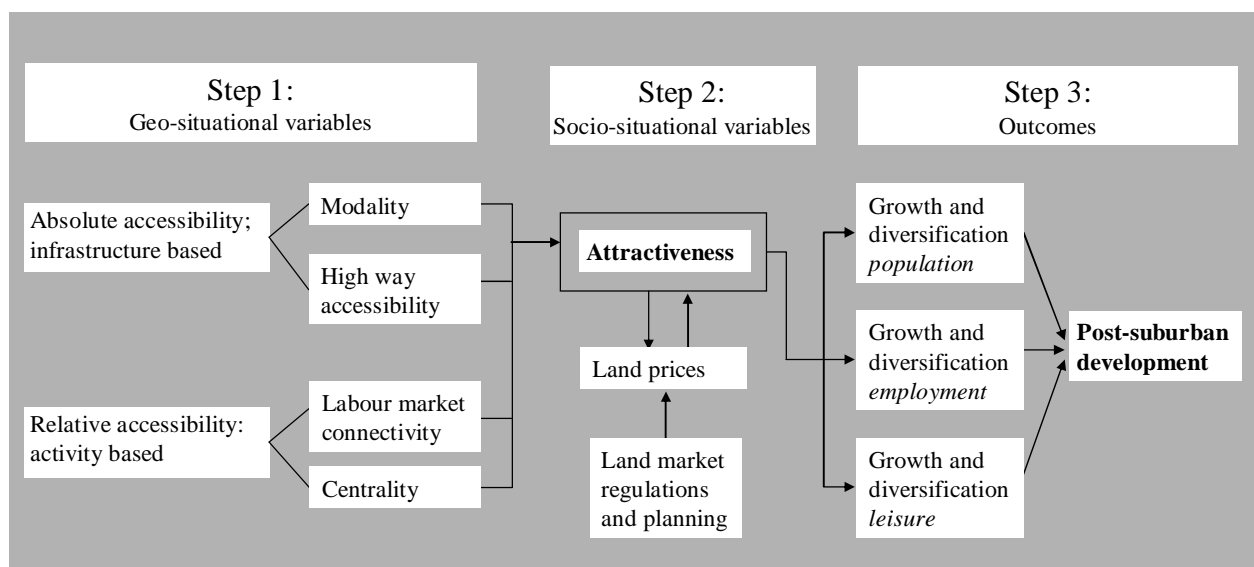
The attraction factors have been divided into site- and situation variables and political variables, together leading to higher municipal attractiveness and consequently to growth and diversification of the population, the employment and recreation, or post-suburbanization. Waddell (2000, 252) correctly summarizes this system as “interactions of households, businesses, developers, and governments [which] produce outcomes representing the distribution of population and employment, as well as the prices, uses, and density of land development.”

Since the literature has revealed that absolute and relative accessibility are such important attraction factors, the research question is as following:

To what extent do absolute and relative accessibility contribute to growth and diversification of the population, the employment structure and leisure in the northern surroundings of Hamburg?

The ‘to what extent’ phrasing leaves room for the importance of other factors contributing to post-suburbanization which are possibly not in the conceptual model.

Figure 1.1 | Conceptual model



The conceptual model shows that the outcome of post-suburbanization (growth and diversification of the population *and* employment *and* leisure facilities) depends on two steps. In the first step the presence of the accessibility variables are measured; high multimodal accessibility, high labour market connectivity and high centrality (closeness to Hamburg) are expected to contribute to high municipal attractiveness. This step can be seen as describing spatial characteristics. Then, step 2 indicates how the attractiveness is firstly influenced by the land prices, which expresses the coherence between demand of the users on the one hand – as a function of their assessment for the sufficient condition of location qualities (dwelling/premises/ environment related qualities) – and by local or regional planning authorities as suppliers by means of land market politics on the other hand. Secondly, it indicates that attractiveness on its turn influences the land prices. This step is a very important intermediary step as a municipality may have all the characteristics in step 1 on the basis of which post-suburbanization is expected, as long as the system of step 2 is flawed (e.g. too high taxes or stringent zoning, no interest of developers) post-suburbanization will not take place and vice versa. Step 3 indicates that post-suburbanization can only occur if the municipality has a high degree of attractiveness *and* only if growth and diversification occurs in both the sphere of the population, employment and leisure.

To get a better understanding of the internal relations between the variables and to investigate whether the conceptual model correctly describes the influence of absolute and relative accessibility and the intervening variables on the process of post-suburbanization a number of sub questions have been formulated:

- 1) Do the variables absolute and relative accessibility influence the perceived attractiveness of a municipality in the view of the public and private developers?
- 2) Which other factors play a role in the perceived attractiveness of a municipality from the supply side perspective?
- 3) Is there a relation between attractiveness, land prices and land market regulation on the one hand and growth and diversification of population, employment and leisure on the other hand?
- 4) Which objectives do planning authorities have concerning the development of their municipality and how are these objectives implemented via planning regulation?
- 5) Which differences can be discerned between the planning objectives and instruments of post-suburbanizing municipalities and municipalities which are not post-suburbanizing?
- 6) Which factors determine whether a municipality is able to sustain their growth and diversification in a period of demographic change?

In this chapter the case study area will be discussed and subsequently which research methods are needed to investigate the presupposed relations of the conceptual model.

§ 2.1 | Case study area

The suburban municipalities northern of Hamburg will serve as case studies. The suburban area is characterized by marshes and high geest land and is traditionally dominated by agriculture. The historic development of some of the municipalities date back hundreds of years (for instance, Bad Oldesloe is first mentioned in 1151, Elmshorn in 1141 and in Uetersen a convent was founded in 1235). The area contains several (former) health resorts Bad Segeberg, Bad Oldesloe and Bad Bramstedt and the marshes and geest grounds provide tourists with numerous recreational amenities (Rumler, 2007).

Growth has not only taken place at the boundaries of the city-state Hamburg, but also in the suburban hinterland. This growth of the suburban municipalities is stronger in the northern part of Metropolregion than in the southern part and has especially taken a massive surge after the Second World War, due to the inflow from people who lost their homes in the war. The second wave of inflow originated from the severe suburbanization since the 60s, which was due to the overspill of firms and residents from Hamburg. The residents were attracted by Hamburgs surroundings by high living- and environmental quality, a relaxed property market and low land prices and rents. The firms moved out of Hamburg because of the lack of expansion possibilities in the city, lower taxes and several subventions funds (*Zonenrandförderung* till 1976) (REK, 1994).

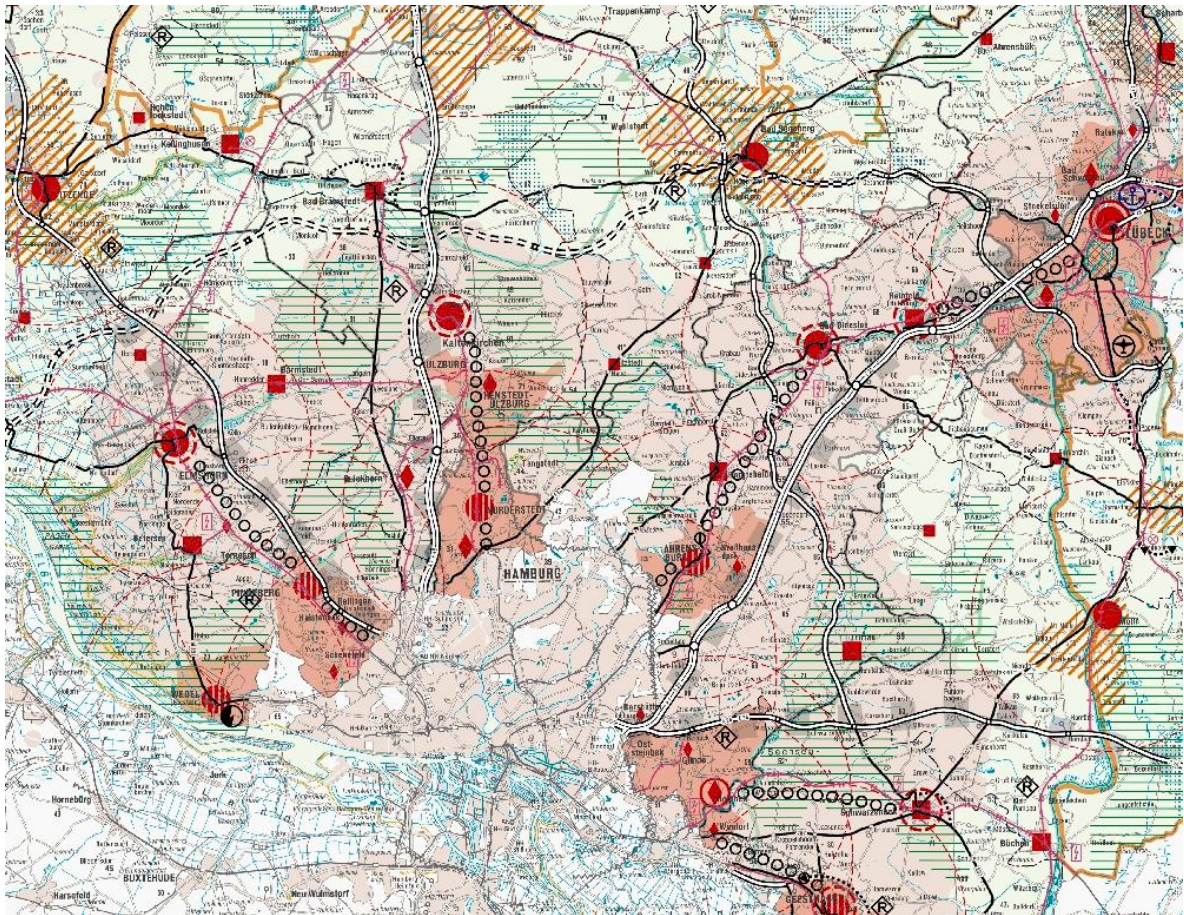
In the literature it is assumed that the accessibility parameters play an important role, so a case study region is needed in which a clear distinction is made between highly accessible and less accessible municipalities. Of course, there are numerous urban conglomerations in which the suburbs have grown in this period. Yet, Hamburg provides such a good example for investigating post-suburbanization because the urban and regional development follows the traffic axes, which makes controlling for the importance of accessibility for municipal development feasible.

This policy of axial development which originated in 1956, entails five development axes, discerned by the planning boards of Schleswig-Holstein and Hamburg, each originating in Hamburg and ending respectively in Elmshorn, Kaltenkirchen, Bad Oldesloe, Schwarzenbek and Geesthacht. The axial end points should develop as strong municipalities providing enough living- and working possibilities to prevent further traffic movements. The municipalities located at the axes are also preferred for further development (see figure 2.1). The interaxial municipalities are however not allowed to develop as much as the axial municipalities. It should be mentioned that the policy is considered to have failed partly; firms did not want to move too far out of the city because of their clients and suppliers, therefore the axial municipalities located nearer to Hamburg grew and the axial end points did not grow as much as expected. Also because the

„Im Ordnungsraum um Hamburg ist im Hinblick auf die Ausweisung von Bauland auch weiterhin von einer hohen **Nachfrage nach Wohn- und Gewerbeflächen** auszugehen. Die jährliche Nachfrage nach Fläche für den Wohnungsbau wird zwar nicht mehr das Niveau der frühen siebziger Jahre erreichen, die Verwirklichung einer auch künftig dem **Achsenkonzept** entsprechenden Siedlungstätigkeit ist aber nur möglich, wenn genügend **Wohnungsbauland** auf den Achsen verfügbar ist.“
- *Ministerpräsident of Schleswig-Holstein Land planning agency: Regionalplan für den Planungsraum I, Schleswig-Holstein Süd, Fortschreibung 1998, p. 19*

Land has only limited juridical planning instruments, the enforcement of this policy was restricted. According to the BBR (2001), all over Germany the population and employment growth is becoming scattered and independent of the spatial planning goals indicating that growth should be focused on designated focus locations. This gives proof of the fact that policy makers may decide which municipalities should develop, but as long as the attraction factors for firms and residents are not present in those municipalities, they will not grow.

Figure 2.1 | Development axes



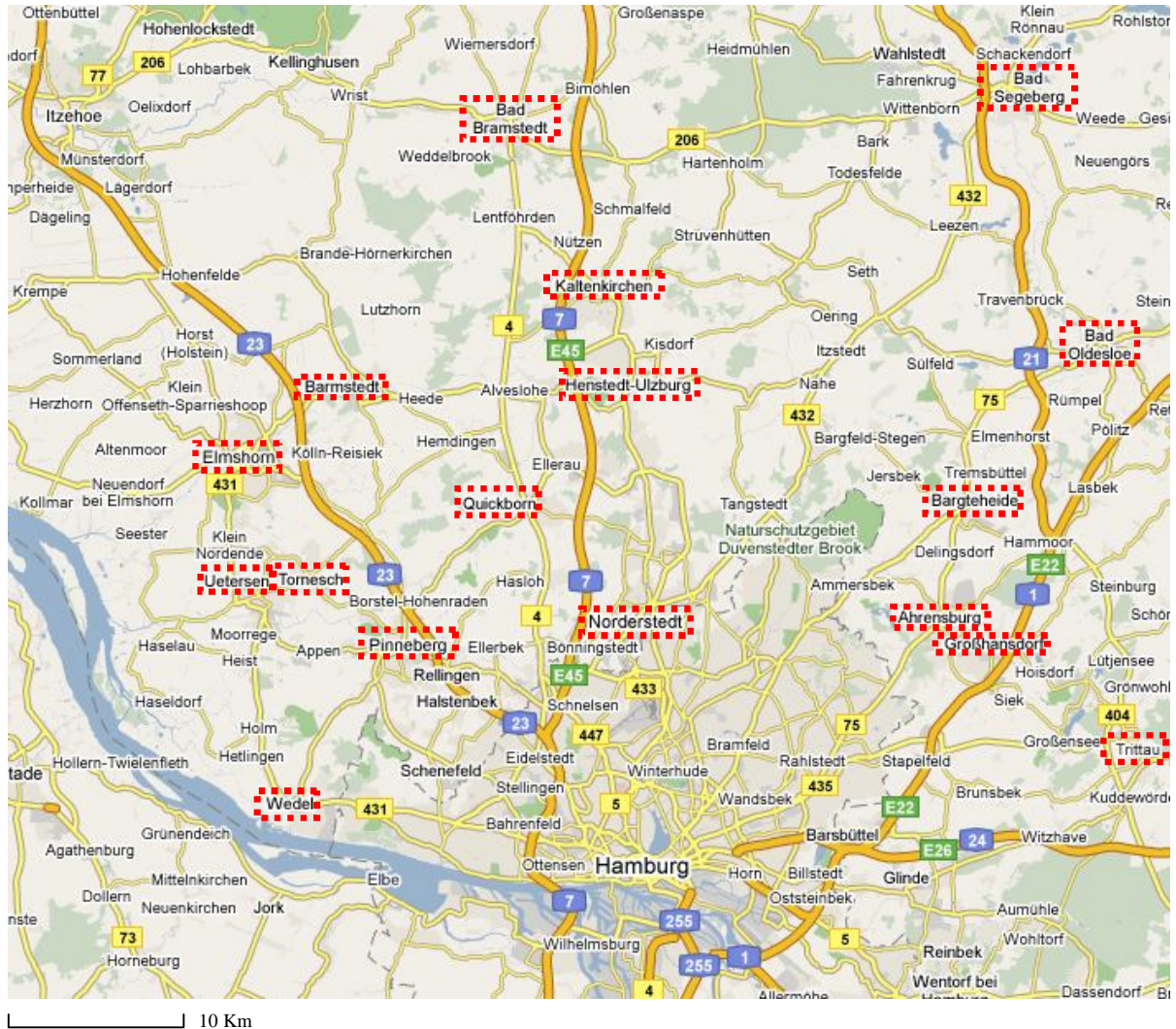
Source: Landesentwicklungsplan, 2009

The case study area comprises of the municipalities located along and within three of the five axes, which are in total the 17 biggest municipalities in the region. These are located in the counties Pinneberg, Stormarn and Bad Segeberg (see below and figure 2.2). The population size of the municipalities range between ca 7.500 (Trittau) and ca 48.000 (Elmshorn). For exact population numbers see appendix 1. The three counties comprise of an area of 277.484 ha with in total 783.383 inhabitants in 2006. The case study municipalities are inhabited by 407.307 people, which is 52% of the total number of inhabitants in the three counties.

<i>County Pinneberg</i>	<i>County Stormarn</i>	<i>County Segeberg</i>
Barmstedt	Ahrensburg	Bad Bramstedt
Elmshorn	Bad Oldesloe	Bad Segeberg
Pinneberg	Bargteheide	Henstedt-Ulzburg
Quickborn	Großhansdorf	Kaltenkirchen
Tornesch	Trittau	Norderstedt
Uetersen		
Wedel		

As figure 2.2 indicates, most of the municipalities are located at traffic axes, however Wedel and Uetersen are located further away from the axes. In addition, the degree of centrality in relation to the city Hamburg differs significantly; the closest municipality is located at 19,5 km (Norderstedt) and the furthest at 63,5 km (Bad Segeberg) away from Hamburg.

Figure 2.2 | Case study municipalities



Source: Google maps; Josje Hoekveld

§ 2.2 | Methods

Both quantitative and qualitative methods will be used. With a quantitative analysis the municipalities which are post-suburbanizing and which are not can be identified, and the relations between the variables can be discovered. This will be attained by regression analyses, with which the influence of the independent variables on the dependent variables will be investigated. First the influence of the accessibility variables on the intervening variable land prices (reflecting attractiveness) will be examined. Subsequently, the correlation between land prices and the post-suburban outcomes will be analysed. Since it is unknown whether land prices influence post-suburbanization or vice versa a correlation matrix will be used instead of a regression analysis. In the final regression the direct influence of the accessibility variables on the post-suburban outcomes will be tested. With this quantitative analysis it is thus aimed to uncover the regularities between the variables.

With a qualitative analysis it is subsequently aimed to investigate the irregularities found in each municipality which lead to different post-suburban outcomes in different municipalities. Then the question is what the unique characteristics of each municipality are which lead to (a certain degree of) post-suburbanization instead of the general characteristics which is investigated in the quantitative analysis. The output of this analysis will provide a listing of municipalities which meet the criteria for post-suburbanization as formulated in §1.1. These municipalities apparently have site-specific characteristics which are appealing to firms, residents and developers. The qualitative analysis will attempt to uncover these characteristics by means of semi-structured interviews with the planning authorities of the municipalities and with among others (semi)-private developers and spokesmen of the Land Schleswig-Holstein and the Metropolregion Hamburg. With these interviews it is aimed to countercheck the results from the interviews with the public planners and to gain more information from another perspective (that is, a higher administrative scale and semi-private parties in the development sphere).

§ 2.3 | Data

§ 2.3.1 | Quantitative data

Table 2.1 shows the operationalization of the indicators for the quantitative analysis of the municipalities. Where possible the time span used is the period 2000-2007, as post-suburbanization is said to be a recent phenomenon. Problems arose with the availability of municipal data on a number of indicators.

For the *indicator diversification of the population* only data about the number of immigrants and 65+ in the total population were obtainable. Data such as the number of single people or household composition would have been valuable indicators, yet unfortunately such data could not be obtained. It should be borne in mind that although ageing is a form of diversification, in this research a high increase of the 65+ variable is a negative development; if the population is ageing, apparently the municipality is not able to create young accretion. In addition, the development perspectives for an ‘older’ municipality are negative because at a certain point in time this group will decrease.

The *indicator growth and diversification of leisure* is operationalized as the number of overnight stays. This variable has less power of expression than for example the development of the number of private and public recreational facilities, but unfortunately such data were not obtainable. The relative weight of this variable is less than the other growth and diversification variables because they cannot fully express the leisure indicator.

The *indicator inner economic action space* is operationalized as a positive commuter balance, as according to the literature a positive commuter balance indicates that a municipality provides attraction factors for firms which then settle there. These firms attract employees from that municipality itself (decreasing the outflow of commuters) and from neighbouring municipalities (increasing the inflow); resulting in a positive commuter balance. When residents are able to find employment in their home town, they are no longer dependent on the core city for employment and thus the municipality is emancipating from the core city.

The *indicators for absolute accessibility* are firstly operationalized as modality, which indicates the presence of a train or a U/S-Bahn station. Multimodality is assumedly more attractive than monomodality, so both types are part of the analysis. Secondly, this indicator is operationalized as the access to a high way.

The *indicators for relative accessibility* entail the catchment potential on the one hand and the centrality on the other hand. Centrality is expected to be of importance as the municipalities close to Hamburg are expected to profit from the employment overspill effects and because the inhabitants can easily commute to Hamburg. The catchment potential measures employment accessibility in a municipality. Hamburg is included in the computation of the catchment potential, as Hamburg provides the largest amount of employment in the region and a large share of the suburban residents commute to Hamburg. The influence of Hamburg cannot be ignored as a determinant in the development of the suburbs.

The *indicator land prices* is operationalized in commercial, residential and mixed land prices and are absolute numbers, due to the lack of periodical data. Yet these data do state which municipalities are currently attractive and which are not, as high land prices reflect high attractiveness and vice versa.

The variable land market regulation is operationalized in the *indicator property taxes*. Of course, land market regulation entails more than only taxation measures, but these other types of regulation are hard to quantify and are therefore not part of the quantitative analysis.

Table 2.1 | Variables and operationalization in quantitative analysis

<i>Variable</i>	<i>Indicator</i>	<i>Operationalization</i>
Post-suburbanization	▪ Growth and diversification population	▪ Growth total population in %, 2000-2007 ▪ Growth immigrants as % of total population, in %, '00-'07 ▪ Growth 65+ as % of total population in %, '00-'07
	▪ Growth and diversification employment	▪ Growth total employment in %, '00-'07 ▪ Growth tertiary & quaternary sector as % of total employment, in % '00-'07
	▪ Growth and diversification leisure opportunities	▪ Growth number of overnight stays, in %, '00-'07
	▪ Inner economic action space	▪ Commuter balance, absolute in 2007
Absolute accessibility	▪ Monomodality	▪ Presence of train station in municipality ▪ Presence of U-Bahn station and/or S-Bahn station
	▪ Multimodality	▪ Presence of a train- and U- or S-Bahn station
	▪ Distance to highway exits	▪ Distance city centre to nearest highway exit in km
Relative accessibility	▪ Labour market potential of municipality	▪ Distance from municipality <i>a</i> to municipality <i>b, c</i> etc in relation to employment in municipality <i>b, c</i> etc. including Hamburg
	▪ Centrality	▪ Distance to Hamburg city centre, in km
Land price	▪ Land prices	▪ Average land price €/m ² for residential use ▪ Average land price €/m ² for commercial use ▪ Average land price €/m ² for mixed use
Land market regulation	▪ Property taxes	▪ Height of property taxes ▪ Taxation percentage for corporate- and property tax (Hebesatz)

The data were derived from a number of sources. The data regarding the employment indicator were obtained from the *Bundesagentur für Arbeit* and the data regarding the population- and leisure indicators from the *Statistisches Amt für Hamburg und Schleswig-Holstein*. The data for the indicator land prices, property taxes and commuter balance were acquired from the *GSD Geographic Systems Data Service AG*. The distances used for the labour market potential indicator and the centrality- and autobahn exit indicator were created by using the 'get directions' function in Google Maps. This function provides the shortest route via the main road between places. Since in Hamburg and Schleswig-Holstein the main road system coincides to a large extent with the rail way system – due to the policy of axial

development – the distance between two places will not differ too much between car users and train users. The presence of railway stations and U- or S-Bahn stations was determined by checking the internet sites of the *Deutsche Bahn* and the *Hamburger Verkehrsverbund*.

For computing the values for the variable catchment potential a simple gravity model based on the Hanson model of 1959 was used. This model combines distance between municipalities and the amount of jobs offered in those municipalities. Abler, Adams & Gould (1971, 217) use the same formula as Hanson in which in a bounded region containing n points (municipalities), *total* potential of interaction V at one point i is computed as the sum of the *separate* potential (number of jobs) created by the existence of every point including point i figure 2.3). The higher total potential of interaction V in a municipality, the more employment can be reached from that municipality. With this simple model, the catchment potential of each municipality in relation to the core city Hamburg *and* in relation with the other municipalities can be computed.

Figure 2.3 | Formula of the potential model

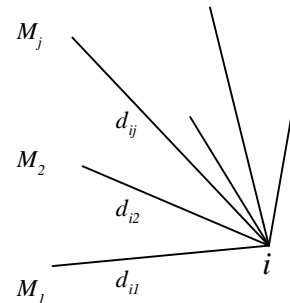
$$V_i = \sum_{j=1}^n \frac{M_j}{d_{ij}}$$

$$V_i = \frac{M_1 + M_2 + \dots + M_j + \dots + M_n + M_i}{d_{i1} + d_{i2} + \dots + d_{ij} + \dots + d_{in} + d_{ii}}$$

V_i = the representation of the total potential at place i

M_j = the size of another place in the bounded regions

d_{ij} = the distance separating i and j



Source: Abler, Adams & Gould, 1971, 217

§ 2.3.2 | Qualitative data

The data for the qualitative part of the research stem from two sets of interviews, one with the urban planners in the 17 municipalities and one with spokespersons of several (economic and planning) institutions and organizations, which have insights in the importance of the attraction factors in the region and the municipalities (see for the list of interviewees, functions and institutions appendix 3). These interviews were semi-structured, as a number of predefined topics were standard part of the interview (see for the entire interview schedule appendix 4).

The topics for the interviews with the urban planners are:

- Most important factors defining the attractiveness of the municipality as living location and working location
- Importance of absolute and relative accessibility
- The development of the number of leisure facilities
- Factors influencing land prices
- Relation between land prices and attractiveness
- Importance of taxation
- Relation between taxation and intermunicipal competition
- Intermunicipal competition in general
- Urban planning goals

- Influence of demographic change and planning strategies
- Influence of local politicians and local politics on planning
- Influence of the Land and the county on planning
- Relationship with the Metropolregion Hamburg
- Financial deficits
- Land in ownership
- Threats and weaknesses of the municipality

The interviews with the spokespersons were less standardized, since the institutions and their tasks differed too much from each other. There were however topics which were discussed in each interview:

- Most important factor defining the attractiveness of the municipality as living location and/or working location
- Absolute and relative accessibility
- Land prices and taxation
- Municipal land in ownership
- Municipal financial deficits
- Demographic change
- Influence local politicians and politics

§ 2.4 | Research design

A cross-sectional research design will be employed. This design is suitable as a number of cases can be investigated which have been exposed to the same processes in time and space but differ with regards to the degree of post-suburbanization they experience. Since the context is constant, other variables can be tested for as far as they influence on the process of post-suburbanization. The matter of reliability and measurement validity are somewhat problematic, as the concept of post-suburbanization is not properly defined in the literature and the definitions have not been agreed upon yet by the scientific community. In this research the description of Brake et al. (2005) will be used; growth and diversification of the population- and employment structure and of leisure possibilities. Internal validity is theoretically weak as no causal relationships between the different variables can be established since the data are partly collected at a single point in time and partly periodical. This problem will be tackled by using Most Different Systems Design and Most Similar Systems Design. MDSD distinguishes relationships between dissimilar conditions (independent variables) and similar outcomes (dependent variable) of a set of cases (Siener, 2004). MSSD is used to distinguish relationships between similar conditions (independent variables) and dissimilar outcomes (dependent variable) of a set of cases. Table 2.2 shows a possible matrix of the relations between the independent variables and an outcome.

Table 2.2 | Example of the relation between variables and outcomes in MSSD and MDSD

		<i>Variable 1</i>	<i>Variable 2</i>	<i>Variable 3</i>	Outcome
Most Different Systems Design	Cases	A	B	C	Growth population
	Cases	A	C	D	Growth population
Most Similar Systems Design	Cases	A	B	C	Growth population
	Cases	A	B	C	Constant population

Cross-sectional design implicates that the findings cannot be generalized beyond the specific context in which these findings were generated. Yet it can be hypothesized that a variable

which appeared to be of importance in the case study region also plays a role in other regions. Nevertheless, it depends also on other local factors, such as the local planning context.

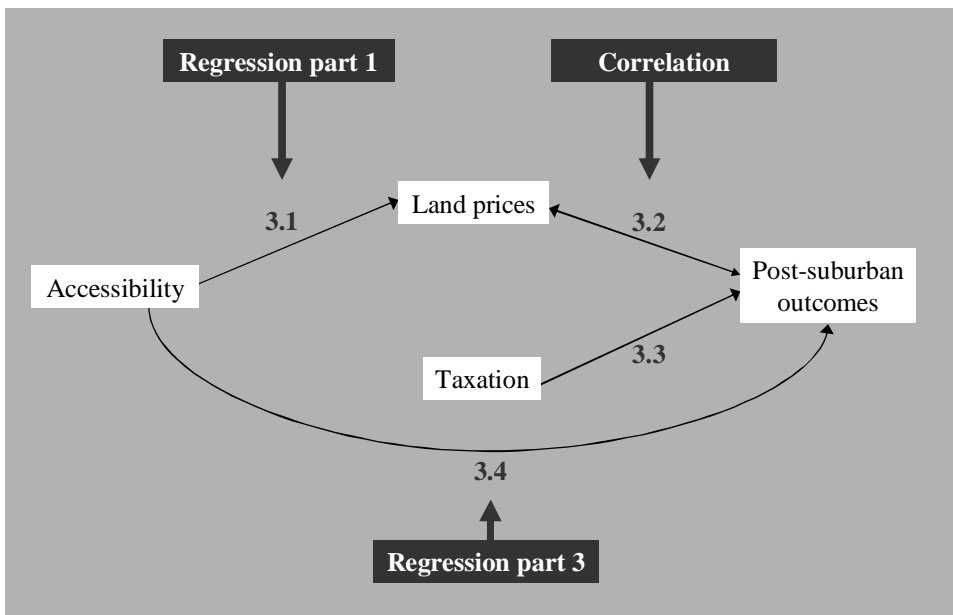
Another issue concerns ecological validity; this validity may be jeopardized because the firms and the residents themselves are not interviewed. Yet, based on the literature, it is reasoned that land prices reflect the perceived attractiveness of firms and residents and that therefore land prices can serve as a parameter for perceived attractiveness.

The quantitative analysis is divided into firstly a regression analysis which seeks for regularities in the relations between the variables and secondly the method Most Different System Design and Most Different System Design, which seeks for irregularities in the scores of each of the municipalities on the variables. By using two quantitative methods it is aimed to verify the presupposed relations between the variables and to uncover the importance of individual variables for the development of each municipality independently.

§ 3.1 | Results

The relationships between the variables will be tested as indicates in figure 3.1.

Figure 3.1 | Logic in the regressions and the accompanying table numbers



The first regression concerns the relationship between accessibility variables and land prices, which should express the attractiveness of a municipality. The adjusted determination coefficient R^2 indicates the share of explained variance and is a measure for indicating the strength of the relation. The Beta-value indicates the relative weight of each of the independent variables on the dependent variable.

The regression coefficient is the highest for the relationship between accessibility and commercial land prices (see table 3.1), which corresponds with the literature. If accessibility is itemized into the different accessibility variables and the Beta coefficients are observed, it becomes clear that for commercial land prices relative accessibility is more important than absolute accessibility, which is contrary to the literature. The presence of a train station even has a negative influence on commercial land prices. The positive sign for the relationship between distance to the exit and commercial land prices comes as a surprise. Apparently, higher distances, given the catchment potential, correspond with higher land prices! This positive relation cannot be explained by the literature. It is possible that this deviating outcome can be ascribed to the small sample size or that other variables play an intervening role. This could hold for the intervening role of the scarcity of business sites or that the

municipality is attractive for other reasons (closeness to Hamburg or the airport, business-friendly climate).

For mixed land prices, we see an almost opposite effect; relative accessibility is hardly of importance whereas absolute accessibility is now much more important. This is probably due to the fact that in mixed land use areas retail can be found, which attracts consumers from a wider area who may make use of public transport to reach their destination. For residential land prices relative accessibility is again important, and as expected the relation between the variables distance to exit and distance to Hamburg is negative; higher distances correspond with lower land prices.

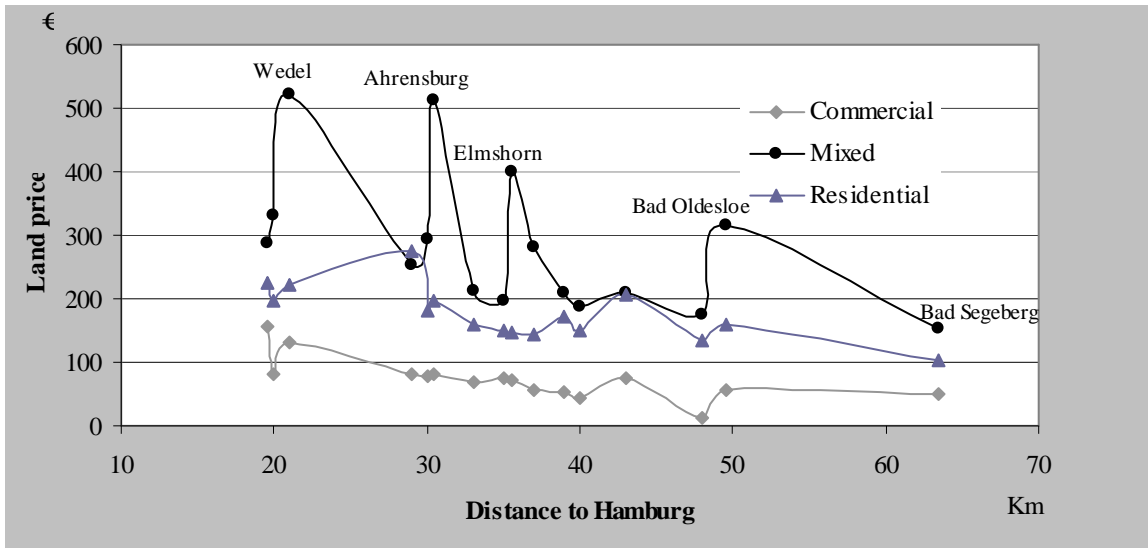
Table 3.1 | Regression accessibility on land prices

<i>Independent variable</i>		<i>Dependent variable</i>	<i>Beta</i>	<i>Sign.</i>	<i>Adjusted R²</i>	<i>Sign. of model</i>
Relative accessibility	Catchment potential	Commercial land prices	1,083	0,030	0,829	0,001
	Distance Hamburg		0,249	0,575		
Absolute accessibility	Distance to exit		0,323	0,076		
	Train		0,077	0,643		
	U/S-Bahn		-0,264	0,138		
Relative accessibility	Catchment potential		Mixed land prices	0,079		
	Distance Hamburg	-0,199		0,718		
Absolute accessibility	Distance to exit	0,580		0,017		
	Train	0,665		0,008		
	U/S-Bahn	0,397		0,086		
Relative accessibility	Catchment potential	Residential land prices		0,403	0,582	0,530
	Distance Hamburg		-0,424	0,564		
Absolute accessibility	Distance to exit		-0,136	0,626		
	Train		-0,075	0,784		
	U/S-Bahn		-0,110	0,699		

The positive values for train and U/S-Bahn station can be explained by the fact that for these variables dummy variables were used, with 0 indicating that this modality is absent and 1 indicating it is present. So according to the literature, the relationship should indeed be positive, as the presence of a train station should correspond with higher prices. Yet, in the case of residential land prices this relationship is negative, indicating that the presence of a train station corresponds with lower land prices. Apparently, this modality is not important for residential land prices. This regression indicates that for residential land prices relative accessibility is more important than absolute accessibility.

In this quantitative analysis the relation between distance to Hamburg – or centrality – and land prices can be tested. According to traditional geographical models there will be a gradual decrease in price with increasing distance if other attraction factors are kept constant. Yet, figure 3.2 shows that especially for mixed land use the prices show a very erratic pattern, which indicates the importance of other attraction factors. Probably in those municipalities with extremely high mixed land prices the land for mixed land use is scarce accompanied by a high demand for such land. For commercial and residential land prices the decrease in prices is much more gradual. This figure indicates the great regional variance and the importance of other factors, which makes regressions on such a small sample size difficult. Probably, in a bigger sample the outliers would not be that dramatic.

Figure 3.2 | Relation distance to Hamburg and land prices



Now that it is found that accessibility does influence land prices – and thus attractiveness – it is interesting to see whether indeed there is a relationship between land prices and the post-suburban outcomes. Yet, it is hard to say which variables are the independent and the dependent variables; low land prices may be attractive to firms and residents and as a consequence of this municipalities grow and diversify. It is however also possible that municipalities have certain other attraction factors. As a consequence residents and firms move there which leads to increasing demand for housing and premises and consequently increased land prices. So there are two opposing hypotheses:

- 1) Municipalities which are post-suburbanizing experience an increasing demand for housing and business sites and as a consequence the land prices rise; post-suburbanization influences land prices
- 2) Municipalities with low land prices are perceived as attractive by firms and residents and as a consequence the demand for housing and business sites increase, leading to higher land prices; land prices influence post-suburbanization

Because the literature does not give insight into which variable is dependent and which independent, it is chosen to use a correlation matrix which might shed light upon this question.

Table 3.2 indicates that population growth corresponds with low commercial land prices. Municipalities in which high population growth and low commercial land prices can be found are Bad Bramstedt, Henstedt-Ulzburg and Kaltenkirchen. The opposite (low population growth and high commercial land prices) is found in Bargteheide, Großhansdorf, Elmshorn, Norderstedt, Quickborn and Wedel.

In the case of Henstedt-Ulzburg and Kaltenkirchen in the first group the low commercial land prices have to do with the fact that enough business sites are available. Bad Bramstedt has low prices as this municipality is traditionally a residential municipality and it is located at a higher distance of Hamburg, so that is less attractive to firms. The increase in the population has in Henstedt-Ulzburg to do with the fact that this municipality still offers affordable housing and in Kaltenkirchen with the favourable location on the traffic axis. Bad Bramstedt offers a pleasant living climate.

The high land prices in Bargteheide and Großhansdorf in the second group have to do with the fact that these municipalities are very popular residential municipalities and free space is used for residential instead of commercial land use (although it must be said that in

Großhansdorf hardly any business sites exist, but that has to do with policies). This, together with the location of the municipality in the region drives up the commercial land prices. The high land prices in Quickborn and Norderstedt have to do with their location on the traffic axis. Also the business sites in these two municipalities are foremost occupied by offices and high-quality businesses, which pushes up the image of the business site and concomitantly the land prices. The high land prices in Elmshorn correspond with the core function for the neighbouring municipalities; only here is industry allowed, which gives Elmshorn a monopoly position in the region and that leads to higher prices. The low population growth in these municipalities has mostly to do with restricted expansion possibilities.

It can thus be said that in both groups of municipalities there is no direct relation between land prices and growth, but other factors (expansion possibilities, location, residential character, quality of the business site) play an intervening role. This means that the hypotheses above both cannot explain the complex regression outcomes; the answer lies within the interference of other factors. These intervening factors can be subdivided into factors concerning *time* (the stage of the municipality in the post-suburbanization process; high growth in the past corresponds with presently less expansion possibilities) and *space* (the location in the region and space-related qualities such as residential character etc.).

Another finding is that employment growth corresponds with high residential land prices. Because the employment suburbanized at a later stage in time than the population, this finding indicates that the employment is growing in those municipalities which are attractive to residents and have concomitantly high residential land prices. So in this case it is not so much that the land prices influence the employment growth directly, but that the employment growth depends on the population, which is attracted to that municipality for other reasons. So population and employment together are related to the land prices but they cannot be seen without the interfering influence of one another.

Table 3.2 | Correlations between land prices and post-suburban outcomes

		Population growth	Foreign	Elderly	Total employ.	Growth tertiary	Commuter balance	Overnight stays
Price commercial	Pearson's r	-0,588	0,124	0,146	0,182	-0,046	0,239	0,512
	Sig. 2-tail.	0,013	0,636	0,577	0,500	0,865	0,356	0,074
Price mixed	Pearson's r	-0,178	0,229	-0,224	0,274	0,361	0,289	0,098
	Sig. 2-tail.	0,510	0,395	0,404	0,304	0,170	0,278	0,749
Price residential	Pearson's r	-0,151	-0,182	-0,007	0,492	-0,019	-0,018	0,380
	Sig. 2-tail.	0,563	0,484	0,978	0,053	0,945	0,944	0,200

That same principle of other variables intervening accounts for the relation between commercial land prices and overnight stays. High commercial land prices and a high increase in overnight stays are found in Elmshorn, Norderstedt and Quickborn. In the latter two, the nearness of Hamburg and the airport could probably result in the increase in commercial land prices *and* overnight stays. The increase of overnight stays can then be ascribed to businessmen and women and the increase in commercial land prices to the favourable position in relation to Hamburg and the airport. For Elmshorn, which is located at a rather peripheral location in comparison with Norderstedt and Quickborn, the increase of overnight stays has probably more to do with tourist considerations than with business considerations. The increase of commercial land prices may have more to do with the fact that Elmshorn is the biggest municipality in that part of Schleswig-Holstein and it serves a

wider catchment area. Because of its planning status it is allowed to have industries, in contrast to the smaller municipalities in its surroundings. Therefore the concentration of industries will probably cause the land prices to increase. So also in this case the correlation matrix indicates an indirect or even false relation, which is actually based on;

- Norderstedt and Quickborn: the proximity of Hamburg attracts business people, which leads to an increase in overnight stays
- Norderstedt and Quickborn: the proximity of Hamburg pushes up the commercial land prices
- Elmshorn: scenery attracts tourists, which leads to an increase in overnight stays
- Elmshorn: core function influences land prices

Another variable which is expected to have an intervening influence is taxation (table 3.3). The relation between taxes and total employment is investigated here, since it has come forward from the literature that taxation influences location decisions of firms, and thus determines the municipal attraction potential. The negative relation between Hebesatz and total employment is in accordance with the expectations; higher Hebesatzes (i.e. higher taxation expenditures for firms) correspond with lower employment growth. This is the case for Pinneberg and Bad Segeberg. The other way around – that is the beneficial variant – is also possible; low Hebesatzes corresponding with high total employment growth occurs in Henstedt-Ulzburg, Kaltenkirchen and Quickborn.

The strong relationship between taxation and elderly is surprising and somewhat ambiguous. Possibly, these municipalities experience ageing because of the decrease of the amount of young people. In sum, taxation does hardly play a role in explaining post-suburbanization. The only significant relations are found between taxation and total employment and elderly.

Table 3.3 | Regression taxation on post-suburban outcomes

<i>Independent variable</i>	<i>Dependent variable</i>	<i>Beta</i>	<i>Sign.</i>	<i>Adjusted R²</i>	<i>Sign.</i>
Property tax	Growth population	-0,037	0,941	0,002	0,984
Hebesatz		-0,012	0,981		
Property tax	Immigrant	0,078	0,870	0,113	0,433
Hebesatz		0,268	0,574		
Property tax	Elderly	-0,992	0,026	0,345	0,047
Hebesatz		0,578	0,167		
Property tax	Total employment	-0,245	0,579	0,247	0,125
Hebesatz		-0,301	0,498		
Property tax	Tertiary employment	0,220	0,642	0,169	0,301
Hebesatz		0,209	0,658		
Property tax	Commuter balance	-0,067	0,887	0,103	0,466
Hebesatz		0,376	0,435		
Property tax	Overnight stays	-0,569	0,335	0,155	0,431
Hebesatz		0,226	0,695		

With regard to the direct relation between accessibility and post-suburban outcomes, it appeared that none of the regressions turned out to be significant (see table 3.4). Yet, the Beta values indicate the relative importance of each of the variables and can give valuable information.

To begin with relative accessibility, the first interesting result is the very strong and negative relation between catchment potential and population growth. Apparently, a high number of jobs in the vicinity corresponds with a low or negative population growth. This applies to those municipalities close to Hamburg. A possible explanation is that those municipalities have grown rapidly in the past and have little room for expansion left. These municipalities have thus reached their saturation point (Wixforth & Pohlan, 2005).

Another finding is the positive relation between catchment potential and commuter balance. This might have to do with the fact that those municipalities close to Hamburg profit from the economic overspill effects of Hamburg and consequently attract a labour force of their own, coming from neighbouring municipalities.

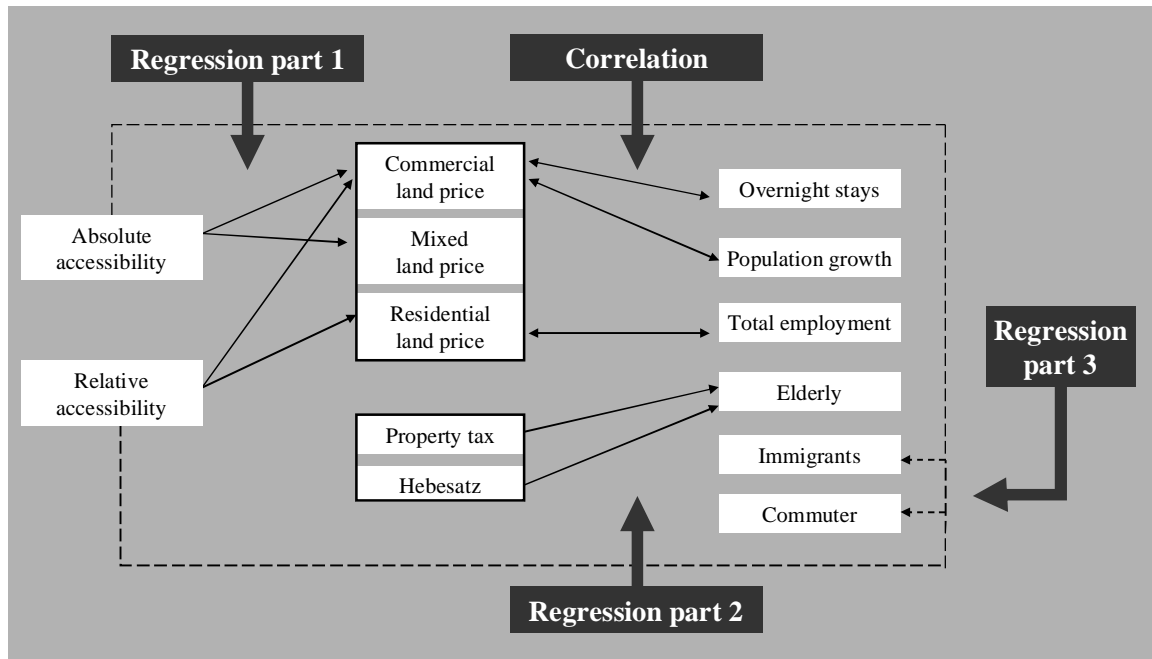
With regard to absolute accessibility, the negative relation between distance to exit and total employment growth should be mentioned. This negative relation, indicating that a low distance to an exit corresponds with high employment growth is backed up by the literature.

Table 3.4 | Regression accessibility on post-suburban outcomes

<i>Independent variable</i>		<i>Dependent variable</i>	<i>Beta</i>	<i>Adjusted R²</i>	<i>Sign.</i>
Relative accessibility	Catchment potential	Population growth	-0,726	0,509	0,153
	Distance Hamburg		-0,491		
Absolute accessibility	Distance to exit		-0,460		
	Train		-0,138		
	U/S-Bahn		0,481		
Relative accessibility	Catchment potential		Immigrants		
	Distance Hamburg	0,133			
Absolute accessibility	Distance to exit	1,622			
	Train	0,282			
	U/S-Bahn	-0,067			
Relative accessibility	Catchment potential	Elderly		0,298	0,042
	Distance Hamburg		0,014		
Absolute accessibility	Distance to exit		0,285		
	Train		-0,131		
	U/S-Bahn		0,117		
Relative accessibility	Catchment potential		Total employment	-0,534	
	Distance Hamburg	-0,106			
Absolute accessibility	Distance to exit	-0,828			
	Train	0,052			
	U/S-Bahn	0,212			
Relative accessibility	Catchment potential	Tertiary employment		1,301	0,204
	Distance Hamburg		-0,220		
Absolute accessibility	Distance to exit		1,135		
	Train		-0,189		
	U/S-Bahn		0,047		
Relative accessibility	Catchment potential		Commuter balance	1,495	
	Distance Hamburg	0,108			
Absolute accessibility	Distance to exit	1,551			
	Train	0,034			
	U/S-Bahn	-0,079			
Relative accessibility	Catchment potential	Overnight stays		-0,178	0,222
	Distance Hamburg		0,148		
Absolute accessibility	Distance to exit		-0,568		
	Train		-0,084		
	U/S-Bahn		-0,105		

In conclusion, one of the most striking results of these regression analyses is that the accessibility variables do only limitedly influence the post-suburban variables directly (none of the regressions have proven to be significant) as opposed to the expectations stemming from the literature. The accessibility variables do influence the land prices, but the relation between land prices and post-suburban outcomes is ambiguous. This relation is often influenced by intervening variables, such as its location in relation to Hamburg, expansion possibilities etc. Figure 3.3 indicates the strongest Beta's of the relations between the different variables in the regressions.

Figure 3.3 | Strongest Beta's and correlations



§ 3.2 | Results grouped municipalities

The individual scores of the municipalities on the variables are shown in table 3.5. Step 1 shows the accessibility variables and a ticked box indicates a positive score on that variable. Step 2 shows the high land prices. Current high land prices indicate that the municipality is attractive at the moment and firms and residents have already settled there, resulting in high land prices. Current low land prices may be an indicator of future attractiveness, but at the same time it may indicate that at the present moment the municipality is unattractive. Step 3 indicates the post-suburban variables. For exact values, see appendix 1.

The first question is whether there are municipalities which display growth and diversification of all three post-suburbanization indicators. In the appreciation of the post-suburban variables the following conditions are taken into account. Firstly, the relative weight of the overnight stays variable is less than the other variables (since this variable may not fully capture growth and diversification of leisure). Secondly, growth of elderly is a negative variable since an ageing population will decrease when the oldest age cohorts pass away, therefore a ticked box at the matrix indicates a low increase of elderly. Thirdly commuter balance is an important variable indicating the attractiveness of a municipality.

The matrix shows that only Ahrensburg scores positive on all the variables in step 3, except for the leisure variable. Four other municipalities which score relatively good are Bad Oldesloe, Kaltenkirchen, Norderstedt and Wedel. In the conceptual model it is postulated that post-suburban municipalities will have high multimodal absolute accessibility, high

catchment potential and low taxes, so the crucial question is whether these above mentioned post-suburban municipalities indeed score positive on these independent variables.

Table 3.5 | Scores of individual municipalities on variables

	Step 1			Step 2				Step 3								
	Train or U/S	Multi modal ¹	Distance exit ²	Potential incl. Hamburg	Commercial	Land prices high	Mixed Residential	Tax built-up low	Hebesatz low ³	Pop growth ⁴	65+ ⁵	Foreign	Eco growth	Growth 3e & 4e sector	Commuter ⁶	Over-night stays
Ahrensburg	X	X	X	X	X	X	X				X	X	X	X	X	
Bad Bramstedt	X		X					X		X				X		
Bad Oldesloe	X		X			X				X	X		X	X	X	
Bad Segeberg	X		X								X			X	X	
Bargteheide	X		X		X	X	X		X				X			
Barmstedt	X					X				X				X		X
Elmshorn	X	X	X		X	X							X	X		X
Großhansdorf	X		X	X	X		X		X	X			X	X		
Henstedt-Ulzburg	X		X				X	X	X	X	X		X	X	X	X
Kaltenkirchen	X		X				X	X	X	X			X	X	X	X
Norderstedt	X			X	X	X	X			X				X		
Pinneberg	X	X	X	X	X	X	X			X		X		X		
Quickborn	X	X	X	X	X	X	X			X			X			X
Tornesch	X		X		X		X	X	X		X		n/a			
Trittau							X	X						X	X	
Uetersen			X		X	X	X	X	X		X	X		X	X	X
Wedel	X			X	X		X	X	X		X	X	X	X	X	X

¹ A ticked box at multimodal means both presence of a train station and a U or S-Bahn station.

² A ticked box at Distance exit means the distance to a high way exit is less than 7 km.

³ A low Hebesatz indicates low taxation over the total amount of taxes due for property tax or tax on profits. Municipalities with low Hebesatz are thus more attractive than municipalities with high Hebesatz.

⁴ A ticked box at population growth means a high increase of the population (above 5%)

⁵ A ticked box at 65+ means a low increase of elderly at the total population.

⁶ A ticked box at Commuter means a positive commuter balance; the municipality provides employment for inhabitants of other municipalities.

First, the accessibility variables are considered. Of these five municipalities only Ahrensburg scores positive on the multi-modality, the catchment potential and the distance to the exit. The other four municipalities score only on either the distance to the exit or the catchment potential. It is possible that these municipalities can compensate their low scores in step 1 by better scores in step 2. Second, the taxes and land prices are considered. Indeed the taxes are low in Wedel, Norderstedt and Kaltenkirchen and high in Bad Oldesloe and Ahrensburg. The land prices are high in Ahrensburg, Norderstedt and Wedel and low in Bad Oldesloe and Kaltenkirchen. At first sight the matrix gives rise to the assumption that municipalities may compensate their scores in the first two steps. Whether this assumption holds and possibly other relationships exist, will be investigated with the MDSD and MSSD.

The municipalities can be grouped according to their scores of similarity and dissimilarity on the independent and dependent variables, which will be used for the Most Different Systems Design and Most Similar Systems Design. The first group of municipalities has common scores on a large number of post-suburban variables; Henstedt-Ulzburg and Kaltenkirchen. These two municipalities are extremely similar in their overall results (see table 3.5, 3,6 and appendix 1), both with respect to the outcomes and the conditions. Therefore it is difficult to classify them for either MDSD or MSSD. Yet, since they score high and positive on the post-suburbanization variables, they will be treated according to the Most Different Systems Design.

Table 3.6 | MDSD for Henstedt-Ulzburg and Kaltenkirchen

	<i>Variable</i>	<i>Henstedt-Ulzburg</i>	<i>Kaltenkirchen</i>
Similar post-suburban outcomes	Population growth	Increase	Increase
	Elderly	Increase	Increase
	Immigrants	Decrease	Decrease
	Total employment	Increase	Increase
	Growth tertiary	Increase	Increase
	Overnight stays	Increase	Increase
Dissimilar post-suburban outcomes	Commuter balance	Negative	Positive
Similar conditions	Catchment potential	Low	Low
	Distance to Hamburg	Moderate	Moderate
	Distance to exit	Low	Low
	Train	No	No
	U/S-Bahn	Yes	Yes
	Commercial land price	Low	Low
	Mixed land price	Low	Low
	Residential land price	Low	Low
	Property tax	Low	Low
Hebesatz	Low	Low	

With regard to the post-suburban outcomes, they both experience a growing, but ageing population and growth and diversification of employment. The proportion of immigrants in the total population has decreased however. They both have a high increase in the number of overnight stays. Despite this rather beneficial economic situation in which growth dominates, Henstedt-Ulzburg has still a negative commuter balance whereas Kaltenkirchen has a positive commuter balance of only 613 persons in 2007. Now, it is the question how

these similar outcomes relate to similar and dissimilar conditions. They score the same on the accessibility variables and with regard to the land market variables; they both have low land prices and low taxation, which may contribute to an advantageous climate for both firms and residents. The only variable on which can be discriminated is commuter balance.

So on the basis of this pair of municipalities one might think that the good scores on the post-suburbanization variables can be explained by the relatively good scores on the absolute accessibility variables. Apparently, the relative accessibility variables are not important. Also the low land prices may play a role in the attractiveness of the municipalities. Additionally it can be said that a train station does not necessarily need to be present if a U/S-Bahn station is present. The question is whether other municipalities support this preliminary conclusion.

The second set of municipalities with almost similar post-suburban outcomes consists of Ahrensburg and Wedel (see table 3.7)

Table 3.7 | MDS for Ahrensburg and Wedel

	<i>Variable</i>	<i>Ahrensburg</i>	<i>Wedel</i>
Similar post-suburban outcomes	Elderly	Increase	Increase
	Immigrants	Increase	Increase
	Total employment	Increase	Increase
	Growth tertiary	Increase	Increase
	Overnight stays	Increase	Increase
	Commuter balance	Positive	Positive
Dissimilar post-suburban outcomes	Population growth	Increase	Decrease
Similar conditions	Catchment potential	High	High
	U/S-Bahn	Yes	Yes
	Commercial land price	High	High
	Mixed land price	High	High
	Residential land price	High	High
Dissimilar conditions	Distance to Hamburg	Moderate	Low
	Distance to exit	Low	High
	Train	Yes	No
	Property tax	High	Low
	Hebesatz	High	Low

They score both above average on the economic variables and they experience growth in the number of immigrants. The only difference with regard to the post-suburban outcomes is that Wedel has shown a slight decrease in the total population, otherwise the scores for post-suburbanization are excellent. Yet, they differ on the absolute accessibility variables; whereas Wedel is located close to Hamburg but far away from a highway exit, Ahrensburg lies at a greater distance from Hamburg but is highly connected to the high way system. Additionally, Wedel does not have a train station. Another important difference is taxation, as in Wedel taxation is very low and in Ahrensburg it is high. This time, the similarity is found in the relative accessibility variables and the land prices. It may be that a certain trade-offs exists in the conditions; some firms and residents appreciate Wedels closeness to Hamburg and low taxes, whereas firms and residents in Ahrensburg appreciate the closeness of the high way and may take the high taxes into the bargain. In both cases it leads to attractiveness and therefore partly post-suburbanization. So the first and second group both

have good scores on the post-suburban outcomes, yet they differ on the scores on absolute and relative accessibility.

Pinneberg, Elmshorn and Ahrensburg display both similar conditions and similar outcomes, but they will be treated according to MDS, since they score high on the majority of the post-suburbanization criteria (see table 3.8).

Table 3.8 | MDS for Pinneberg, Elmshorn and Ahrensburg

	<i>Variable</i>	<i>Pinneberg</i>	<i>Elmshorn</i>	<i>Ahrensburg</i>
Similar post-suburban outcomes	Elderly	Increase	Increase	Increase
	Growth tertiary	Increase	Increase	Increase
	Population growth	Increase	Increase	Increase
	Immigrants	Increase	Increase	Increase
	Overnight stays	Increase	Increase	Increase
Dissimilar post-suburban outcomes	Total employment	Decrease	Decrease	Increase
	Commuter balance	Negative	Negative	Positive
Similar conditions	Distance to exit	Low	Low	Low
	U/S-Bahn	Yes	Yes	Yes
	Train	Yes	Yes	Yes
	Commercial land price	High	High	High
	Mixed land price	High	High	High
	Property tax	High	High	High
	Hebesatz	High	High	High
Dissimilar conditions	Catchment potential	High	Low	High
	Distance to Hamburg	Low	Moderate	Moderate
	Residential land price	High	Low	High

These three municipalities have again rather favourable post-suburban outcomes, yet the increase of elderly and the decrease of total employment and the negative commuter balance in Pinneberg and Elmshorn are negative developments. The question is then whether these developments can be explained by similar conditions? It appears that the favourable outcomes correspond with favourable absolute accessibility parameters and that the municipalities differ on relative accessibility, which rules out relative accessibility for the explanation. The good scores on absolute accessibility may compensate for the high land prices and taxes.

The high catchment potential in Ahrensburg and Pinneberg may be explained by the relatively close location to Hamburg. The land prices are high, except for residential use in Elmshorn, which may indicate that the municipalities experience high pressure on the land market as they provide certain attraction factors to both firms and residents. In the future however, these high land prices and taxation expenditures may deter residents and firms.

The above leads up to the conclusion that similar outcomes cannot fully be explained by the dissimilar conditions. All three groups have a low distance to an exit and either a train or U/S-Bahn station, yet they differ on the scores on catchment potential, land prices and taxes.

Bad Oldesloe, Bad Segeberg and Bad Bramstedt are three municipalities with display great resemblance on the condition and will thus be treated according to the MSSD. They score the same on the accessibility indicators; the distance to the highway exit is low and distance to Hamburg is high and catchment potential is low, which is a rather unfavourable situation (table 3.9).

Table 3.9 | MSSD for Bad Oldesloe, Bad Segeberg and Bad Bramstedt

	<i>Variable</i>	<i>Bad Oldesloe</i>	<i>Bad Segeberg</i>	<i>Bad Bramstedt</i>
Similar post-suburban outcomes	Elderly	Increase	Increase	Increase
	Growth tertiary	Increase	Increase	Increase
Dissimilar post-suburban outcomes	Population growth	Increase	Decrease	Increase
	Immigrants	Decrease	Increase	Decrease
	Total employment	Increase	Decrease	Decrease
	Overnight stays	Increase	Increase	Decrease
	Commuter balance	Positive	Positive	Negative
Similar conditions	Catchment potential	Low	Low	Low
	Distance to Hamburg	High	High	High
	Distance to exit	Low	Low	Low
	Commercial land price	Low	Low	Low
	Residential land price	Low	Low	Low
	Property tax	High	High	High
Dissimilar conditions	U/S-Bahn	No	No	Yes
	Train	Yes	Yes	No
	Mixed land price	High	Low	Low
	Hebesatz	High	High	Low

The key question is thus whether the low scores on the absolute and relative accessibility variables correspond with low scores on the post-suburban variables, which should be expected based on the findings of the MDSD. Indeed, the increase of elderly is a negative development, so is the decrease of the immigrants and total employment in repeatedly two out of three municipalities. However, there is still an increase in the tertiary sector and also the commuter balance is positive in two out of three. This positive commuter balance in Bad Oldesloe and Bad Segeberg can be explained by their core function for their surrounding municipalities; they are each the biggest municipality in a field of small municipalities. It is possible that the negative similar conditions (low catchment potential, high taxes, and a high distance to Hamburg) are compensated by low land prices and the low distance to an exit.

Two other municipalities with a large amount of similar conditions are Wedel and Norderstedt (table 3.10).

Table 3.10 | MSSD for Wedel and Norderstedt

	<i>Variable</i>	<i>Wedel</i>	<i>Norderstedt</i>
Similar post-suburban outcomes	Elderly	Increase	Increase
	Growth tertiary	Increase	Increase
	Overnight stays	Increase	Increase
	Total employment	Increase	Increase
	Population growth	Decrease	Decrease
	Commuter balance	Positive	Positive
Dissimilar post-suburban outcomes	Immigrants	Increase	Decrease
Similar conditions	Catchment potential	High	High
	U/S-Bahn	Yes	Yes
	Distance to exit	High	High
	Distance to Hamburg	Low	Low
	Train	No	No
	Commercial land price	High	High
	Mixed land price	High	High
	Residential land price	High	High
	Property tax	Low	Low
Dissimilar conditions	Hebesatz	Low	High

Wedel and Norderstedt have favourable scores on both the absolute and relative accessibility variables, except for the distance to the exit. However, the high land prices are unfavourable, which on the other hand may be compensated by the low taxes. The question is whether these positive scores on the conditions influence the post-suburban outcomes positively. The municipalities display an ambivalent post-suburban development; positive economic variables (positive commuter balance, growth of total employment and the tertiary sector) and negative population variables (increase of elderly, decrease of the total population). This finding may be explained by the fact that the two municipalities have grown rapidly in the past and now little residential expansion possibilities are left, which together with an ageing population leads to a negative population development. The growth of the economic variables may be explained by the fact that expansion possibilities for businesses and industries are still present.

The preliminary conclusion that can be drawn from this MDSD and MSSD is that the variables in the model are not sufficiently able to explain the differences found between the municipalities. For instance, increase of elderly and growth of the tertiary sector are found in both the MDSD-groups and MSSD-groups, yet these two processes do not necessarily have anything to do with post-suburbanization, but rather with more general economic and demographic processes which are also occurring on other scales and in other regions. Additionally, the presence of a train station or a low distance to an exit is not necessarily related to growth of the population.

Some regularities are found within the groups, however. In the MDSD-municipalities similar scores on the post-suburbanisation variables generally correspond with similar scores on the accessibility variables. Furthermore multimodality is not a necessary condition for post-suburbanization; if a train station is present, a U/S-Bahn station is not necessary, and vice versa. It seems that this compensation mechanism functions in other cases too; a high

distance to an exit may be compensated by a low distance to Hamburg, or a high catchment potential may compensate the high land prices.

Based on the quantitative analysis it can thus be stated that relative and absolute accessibility are indeed to a certain extent contributing to growth and diversification of the population, the employment structure and leisure in the northern surroundings of Hamburg, but it became apparent that other factors not being incorporated in the conceptual model also play a role, which were not part of the quantitative analysis. The next chapter aims at revealing these other factors.

In this chapter the interviews with the main semi-public and private economic actors in the region will be analyzed to identify the unique characteristics of the municipalities. The municipalities will be grouped on their post-suburbanization potential and it will be verified which unique characteristics can be found in each group. In that way, the characteristics which lead to high post-suburban potential can be identified.

§ 4.1 | Municipalities with high post-suburbanization potential

The municipalities are classified in order of their scores on the post-suburban variables (table 3.5). There are three categories, high-, moderate and low post-suburbanization potential. Using three categories enables us to discriminate the municipalities better on the importance of the factors listed in the left column of the tables.

The municipalities with high post-suburbanization potential are Ahrensburg, Bad Oldesloe, Henstedt-Ulzburg and Kaltenkirchen. They meet the demands of the operational definition more than the other municipalities, i.e. at least growth of the population and growth of both economic variables. Therefore, it is of importance to examine which factors – according to the urban planners – contribute to this high attractiveness which lead up to growth and diversification (table 4.1).

Table 4.1 | Results interviews Ahrensburg, Bad Oldesloe, Henstedt-Ulzburg and Kaltenkirchen

Factors	<i>Ahrensburg</i>	<i>Bad Oldesloe</i>	<i>Henstedt-Ulzburg</i>	<i>Kaltenkirchen</i>
Determinants attractiveness	High way, U-Bahn, recreation, facilities & services, image & identity	Recreational & environmental quality, education, high way	Affordability, high way, U-Bahn, cooperative attitude of municipality towards firms	High way, U-Bahn, facilities & services
Taxation	Only for firms	Only for firms	Only for firms	More important for firms than residents. But differences too small
Development of leisure	Expansion in private sphere, scarcely in public sphere	Unchanged	Substantial expansion in private and public sphere	Expansion both in private and public sphere
Availability of land	Barely	In stock	In stock	In stock
Land in ownership	Barely	Barely	Limited	Limited, but council attempts to enlarge amount
Financial situation	Slightly in deficit	In deficit	In deficit	In deficit
Urban policy	Passive; scarcely expansion	Active; Moderate growth, increase attractiveness	Passive; primarily urban condensation, but construction is private matter	Passive; only urban condensation and multi-family housing
Policy for demographic change	Housing for all population groups	Age-adapted housing,	Effect momentarily hardly noticeable. Housing primarily private matter	Effects will not occur, (according to interviewee)

Even though absolute accessibility has not proven to be of significant influence for the post-suburbanization variables in the regression analysis, all three municipalities declare that accessibility is one of the most important factors determining the attractiveness of the municipality, both for firms as for residents. They expect that, when the petrol prices will

rise in the future, their attractiveness in comparison to other, less connected suburban municipalities will increase even further. Of the four municipalities only Ahrensburg scores positive on both the absolute and relative accessibility variables, Henstedt-Ulzburg and Kaltenkirchen do not have a train station and have a low catchment potential. Bad Oldesloe does have a train station but also has a low catchment potential. The question is thus why those latter municipalities are still attractive enough for post-suburbanization. Apparently other local factors contribute to the high attractiveness of those municipalities.

Such other local factors are among others the availability of school- and health care facilities and a well-equipped retail supply. All four interviewees said that such facilities and services are of great importance. The interviews also made clear that in these municipalities the leisure facilities are at a high level (except for Bad Oldesloe), which also contributes to the locational benefits of these municipalities. All municipalities serve as pool of employment for their immediate neighbouring municipalities, but since Henstedt-Ulzburg and Kaltenkirchen are located at a short distance from each other, their inhabitants commute – besides to Hamburg – also between each other. This is an example that the suburbs have matured and are less dependent on the core city.

As the interviews with the economic actors made clear, the presence of qualified employees is a very important location factor for firms, especially for high-tech firms etc.. These are generally attracted by an attractive living environment, leading to an upward cycle for municipalities which are already regarded as attractive.

The question is whether besides the absolute accessibility variables also the other variables in the conceptual model – land prices and taxation – play a role. With regard to land prices, all municipalities state that their relative advantage in comparison to Hamburg is for many companies decisive, even though the land prices are higher than in municipalities which are located at a higher distance from Hamburg. It is said that for residents the land prices are less important than for firms, and other ‘soft’ factors are more vital for residents. The taxation climate is somewhat ambiguous; whereas in some municipalities taxation is stated to be only of importance for firms, other municipalities state that the intermunicipal differences in Hamburgs hinterland are too small to make a difference, even for firms. Yet, these differences among the suburban municipalities may be small, the difference in taxation between Hamburg on the one hand and Hamburgs suburbs on the other hand is substantial, which is often said to be a locational advantage.

Another issue which should be mentioned in this context is the importance of the soft factor ‘identity’ or image, which is especially important for Ahrensburg. This municipality enjoys a popular image in the region, because of its history, lively city centre and pleasant living environment. Because the development of this municipality dates back hundreds of years, it was already an independent municipality before the suburban boom period, meaning that it is not characterized by the typical 60s and 70s architecture which can be found in a number of other municipalities. Since Ahrensburg is hardly developing new housing sites, the demand for housing exceeds the supply drastically, resulting in increasing housing prices. This explains the relatively low population growth accompanied by substantial economic growth, found in the quantitative analysis. This urban policy of maintaining the current situation (i.e. too little development of housing in comparison to the demand) can be labelled as a *passive urban strategy*, which is also employed in Henstedt-Ulzburg. As a consequence the lower income groups cannot find appropriate and affordable housing anymore and need to settle in less expensive municipalities. As only higher income groups can afford to settle here, the population homogenizes instead of diversifies, which jeopardized further post-suburbanization.

The municipalities can thus influence their attractiveness by their urban policies; the types of housing that are realized determine which population groups are attracted. This urban policy can either be active (further expansion) or passive (maintaining the current situation or inward development). The interviews revealed that the municipal decision for one of these strategies – and thus whether further growth and diversification is possible – depends on a number of factors. This should be mentioned because they are vital for explaining why certain municipalities are attractive and post-suburbanizing and others are not.

1. The first factor is the **willingness** of the local politicians. When the local council decides that no further development is necessary – because that could harm the ‘idyllic’ character of the municipality or it may cause housing prices to decrease – indeed no further development will happen. Even when higher authorities (the Land) dictate that a number of dwellings should be realized, which is often the case in the so-called axial focus points, the municipality has enough power to withstand these demands to a large extent.
2. The second factor is whether a municipality has **land in ownership**. When the municipal land is privately owned by its inhabitants, the municipality has either to buy those lands or to incite the owners to build dwellings on their plots. Of course, in the latter case the municipality has hardly any influence on which types of dwellings are built. In the northern surroundings of Hamburg the majority of the municipalities has hardly any land in ownership, therefore they experience difficulties in directing their urban development. For that matter, not only municipalities experience difficulties in obtaining land, also (semi)private businesses like the *Sparkassenerschließungsgesellschaft* or the *Neue Lübecker* (housing association) declare that it is not so much the land prices but the supply of land that is the problem. Also for business site expansion this lack of land is problematic. In a number of municipalities land for business site expansion is not available and in the view of the planners this harms the development of the municipality.
3. The third factor that plays a role in some municipalities is the presence of **environmental protection zones**, which are abundant in the sample region. Many municipalities find themselves crammed between forests and peat, so that expansion is not possible.
4. The fourth factor is the **status of a municipality** declared by the Land. So-called Unterzentren are not allowed to expand because the regional policy of Schleswig-Holstein is to develop the important bigger municipalities (axial municipalities), whereas the smaller municipalities or those located in between traffic axes should maintain as they are. The Land is thus able to constrain the development of the small municipalities, but they can hardly direct the development of the axial municipalities.
5. The fifth factor is whether a municipality is **financially in deficit** or not. In a financially restrained municipality, it is hard to develop housing sites, especially in accordance with increasing the necessary infrastructure for those extra inhabitants. It is often seen that housing sites are developed, but that the infrastructure (both hard and soft) are not updated to the necessary standard, which contributes to lower attractiveness.

The first four factors are related to the planning possibilities and constraints. Even if these factors are all favourable, it is still possible that the fifth factor – the financial situation – is unfavourable and the plans are frustrated. The political willingness, land in ownership and the financial situations can to a certain extent be influenced by the municipality and so a

municipality is able to influence and adjust its attractiveness. Therefore they are captured here under the denominator *adjustment potential*. The importance of this potential will be elaborated upon later.

In sum, the four municipalities Ahrensburg, Bad Oldesloe Henstedt-Ulzburg and Kaltenkirchen may be currently attractive – based on the high scores on the post-suburbanization criteria – but their future development may be jeopardized due to the limited amount of land in ownership and due to their passive urban policy.

§ 4.2 | Municipalities with moderate post-suburbanization potential

These municipalities score positive on the growth of the tertiary sector and also on total population growth, so there is limitedly growth and diversification.

Table 4.2 | Results interviews Bad Bramstedt, Bargteheide, Barmstedt, Elmshorn, Großhansdorf, Pinneberg and Trittau

Factors	<i>Bad Bramstedt</i>	<i>Bargteheide</i>	<i>Barmstedt</i>	<i>Elmshorn</i>	<i>Großhansdorf</i>	<i>Pinneberg</i>	<i>Trittau</i>
Determinants attractiveness	Environmental quality, high way, U-Bahn	Distance to Hamburg, highway, train, attractive residential areas, (social) infrastructure	U-bahn, recreational quality	Accessibility education system, housing in inner city, (social) infrastructure	High way, U-Bahn, recreation, (shopping) facilities, education, image	Distance to Hamburg, S-Bahn, high way, availability of land, recreation	Distance to Hamburg, (social) infrastructure recreation
Taxation	Not so important	Not important	Only for firms	Only for firms	Plays no role	Only for firms	Hardly plays a role
Development of leisure	Stabile at high level	Expansion in private and public sphere, high level	Unchanged in public sphere, expansion in private sphere	Expansion in public sphere	Public recreation (outdoor), no private institutions	Unchanged	Unchanged
Availability of land	Barely	In stock	In stock	Barely	Barely	In stock	In stock
Land in ownership	Barely	Substantial amount	Limited	Barely	Barely	Normal amount	Limited
Financial situation	In deficit	Positive	In deficit	Significantly in deficit	Positive	Significantly in deficit	In deficit
Urban policy	Active; releasing business premises	Active; constructing single-family dwellings. Further moderate expansion	Active; releasing housing sites qualitative growth via housing sites	Active; urban/environmental redevelopment. Single family dwellings	Passive; Conserving current state	Active; releasing new housing sites	Active: Further growth of business premises and housing
Policy for demographic change	Reduce plot size, PPP's for housing	No effects rather rejuvenation. Single-family dwellings	Age-adapted housing	Effects may not be that dramatic. No policy	Not a political topic (yet)	Alleviating effects by releasing housing sites	Age-adapted housing. Hardly demographic effects noticeable

Again all municipalities, except for Trittau, state that their connection to the high way is the most important attraction factor. Also the distance to Hamburg is seen as a locational

advantage. Trittau compensates the lack of highway accessibility by providing a quiet and green environment. Besides absolute accessibility also relative accessibility is important. Only Elmshorn serves as a primary pool of employment for the neighbouring municipalities; the other municipalities are located near neighbouring municipalities which also provide employment and they provide (some) employment themselves. However, the interview partners declared that this does not necessarily lead to severe competition among neighbouring municipalities, since every municipality disposes of certain unique qualities which attract different firms.

Just as the first group of municipalities, the well-equipped social infrastructure and education facilities are mentioned as being important. However, with regard to the leisure possibilities it appeared that the number and quality of these facilities have not been expanded in the last eight years and has remained stable, be it that in some municipalities the point of departure was better than in others.

Figure 4.1 | Lively city centre in Elmshorn (left) and new housing sites in Pinneberg (right)



Photo: Josje Hoekveld, 2008

Again, the planners stated that land taxation does not play a vital role in location decisions, although it is more important for firms than for residents. Therefore, this taxation is not used in the intermunicipal competition. With regard to this competition, the municipalities are encouraged by the Land to cooperate with regard to housing- and business site expansions, in order to prevent an uncoordinated proliferation of such sites. However, the Land does not possess any planning- or juridical instruments to enforce this cooperation, and fully depends on the willingness of the municipalities.

So the difference between these municipalities and those with high post-suburbanization potential is not based on accessibility and the social infrastructure and facilities. Hence the question is which factors contribute to the lower post-suburbanization potential in comparison with the first group. The first thing that attracts attention is that the recreational facilities have not improved in the majority of the municipalities in this group. What is possibly more important is the urban policy; in comparison with the first group of municipalities, these moderate post-suburbanization municipalities employ active urban policies, whereas the first group of municipalities employs passive urban policies. The question is why the high potential municipalities are so attractive when they employ passive policies and these moderate potential municipalities are less attractive despite of their active policies. Most likely these moderate potential municipalities need to employ an active policy

to enhance their attractiveness whereas the high potential municipalities are already attractive so they do not need to employ an active policy.

In the moderate group, there are more municipalities with land in ownership to stimulate so expansion is a realistic possibility. The high post-suburbanization group conversely has barely land in ownership and therefore expansion is difficult to realize. For future development, this may implicate that those high post-suburbanization municipalities may lose their attractiveness because of first their lack of expansion possibilities and second their passive urban policies. At the same time it is possible that the moderate post-suburbanization municipalities may increase their attractiveness because they are able and willing to create new sites, adapted to the needs of the demand.

§ 4.3 | Municipalities with low post-suburbanization potential

These municipalities scored on only one economic variable and do not necessarily have population growth, so their post-suburbanization potential is low.

Table 4.3 | Results interviews Bad Segeberg, Norderstedt, Quickborn, Tornesch, Uetersen and Wedel

Factors	<i>Bad Segeberg</i>	<i>Norderstedt</i>	<i>Quickborn</i>	<i>Tornesch</i>	<i>Uetersen</i>	<i>Wedel</i>
Determinants attractiveness	Distance to Hamburg/Lübeck, recreational quality, image as health resort	Distance to Hamburg, and airport, high way, U-Bahn, high qualified employees	Recreational quality, high way, S-Bahn, (social) infrastructure, single-family image	High way, low land prices	Rustic character, cultural facilities, recreational and environmental quality	Distance to Hamburg, recreational, environmental quality, S-Bahn, business friendly climate
Taxation	Not answered	Not that important	Only for firms	Not that important	Not that important	Important
Development of leisure	Unchanged, majority in public sphere	Increase, both in public and private sphere	Unchanged	Unchanged	Unchanged	Unchanged
Availability of land	In stock	In stock	In stock	A large stock	Barely	In stock
Land in ownership	Limited	Barely	Limited	Barely	Barely	Barely
Financial situation	Significantly in deficit	In deficit	Slightly in deficit	Significant deficit	In deficit	In deficit
Urban policy	Passive; enhancing quality, not quantity	Active; urban condensation and further growth. Solve infrastructural problems	Active; qualitative growth via releasing housing sites	Passive; Increase attractiveness urban centre and soft attraction factors	Active; pro-cyclic release of residential areas for young families	Passive; housing sites released after demand. Urban condensation. Qualitative expansion
Policy for demographic change	Not a political topic (yet)	Age-adapted on private developers initiative	Alleviating effects by releasing housing sites	Not a topic (yet). However, already age-adapted housing and smaller plots	Release of new residential areas for families (pro-cyclic)	Age-adapted housing. Release new residential areas

In this last group both accessibility and especially environmental qualities are mentioned to be of importance. Yet, recreational facilities have remained unchanged over the last years. They differ from the other two groups with respect to social infrastructure and facilities,

which are hardly mentioned as being important in these municipalities. Another remarkable difference is the large amount of land which is available. This aspect may contribute to future attractiveness as it gives the municipality the possibility to exert an active urban policy. Nevertheless, only half of the municipalities do indeed exert such an active policy, which is related to the financial situation of the municipality; those which are significantly in deficit exert passive policies and vice versa. The prospects are however only favourable for Norderstedt and Quickborn; these municipalities still have considerable attraction factors, which is not the case for the other municipalities. Yet Norderstedt struggles with a negative image. It is almost absorbed by Hamburg, as it borders directly at the northern edge of the city (see figure 4.2) and it is only since the 1970s an official municipality, after the unification of four towns. So due to this relative short history of the municipality, the inhabitants do not have a sense of being a 'Norderstedtian'. In Norderstedt, the lack of a clear image and appealing city centre is compensated by the absolute and relative accessibility, the presence of an airport and the proximity of Hamburg.

Figure 4. 2 | Border between city state Hamburg and Schleswig-Holstein in Norderstedt



Photo: Josje Hoekveld, 2008

The compensation mechanism such as in Norderstedt occurs more often; Bad Bramstedt for instance is located far away from Hamburg, but the high way is near. Yet, the environmental scenery makes this municipality attractive for living. However, for businesses, the distance to Hamburg might be an issue, as is the lack of business parks. Großhansdorf on the other hand has all the potential for expanding both for housing as for businesses, since Hamburg is close and it is located near the high way. Additionally, Ahrensburg with its attractive centre with high-quality retail is within a stone's throw. However, the politicians in Großhansdorf have decided that further expansion is undesirable and furthermore unnecessary since the population is above average wealthy, which makes the yields from communal business taxes superfluous. Therefore, it is chosen to maintain the current situation in which no business premises exists and maintain the municipality as a residential municipality for wealthy inhabitants. This gives proof that even when the preconditions for post-suburbanization are present, local politics can have a decisive influence on local developments, in line with the *government-policy explanation*.

The conclusions of this qualitative analysis are firstly that according to the public planners the accessibility parameter is extremely important for their development. In their view, absolute accessibility is important for both firms and residents, but more important for firms than for residents. It is remarkable that although in the quantitative analysis accessibility was hardly significantly related to the post-suburban outcomes, almost all municipalities underline the importance of accessibility, even municipalities which score low on the post-suburbanization potential. So accessibility is then no longer the discriminating variable and the discriminating factors need to be sought in the unique mix of characteristics of each municipality, which contains also the other (soft) attraction factors and the adjustment potential. Some municipalities dispose of a unique mix which is attractive to firms and

residents and as a consequence these municipalities post-suburbanize, whereas others do not. So this unique mix leads to a process of diversification in the region, which in my opinion is another – not yet established – characteristic of post-suburbanization. Regions in which post-suburbanization is happening display great diversity, in contrast to regions with traditional suburbs which display a higher level of homogenization. This high level of diversity on the regional scale is the aggregate effect of simple decisions and behaviour of agents on the local scale (Lacour & Puissant, 2007).

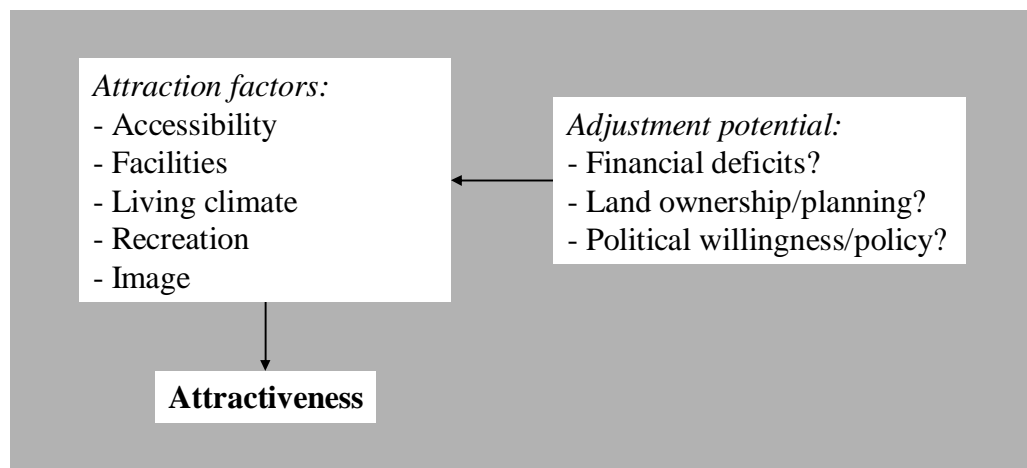
Secondly, municipalities located on the development axes and near Hamburg provide the best development chances, whereas the interaxial municipalities or those located further away have less development chances. This importance of absolute accessibility is related to relative accessibility, since only a smaller proportion of the inhabitants work in their own or neighbouring municipalities and the majority of the commuters work in Hamburg.

Thirdly, the factors land prices and taxation only matter in relation to land prices and taxation in Hamburg and not in relation to suburban municipalities among each other. This gives proof of the tight relationship of the suburban surroundings and the main city.

Fourthly, these fixed attraction factors of absolute- and relative accessibility are accompanied by soft and dynamic attraction factors such as an attractive city centre or living climate and leisure- and recreation possibilities contribute to better development chances. These factors can to a certain extent be influenced by local politicians and planners, i.e these factors are dependent on the degree of adjustment potential of that municipality. This adjustment potential depends on the factors financial situation, the degree of land in ownerships of the municipality and the political willingness.

Fifthly, the high potential municipalities may currently be attractive but because of their passive policies they may loose attractiveness. Even if they have enough land in stock, due to these passive policies they are not expanding and this pushes up the land prices. On the other hand the moderate potential group does have better chances as almost all municipalities have active policies and land available. The low potential group also has land, but here the attraction factors are scarce (attraction factors must compensate repulsion factors) and in addition they are in a dire financial situation, so it is not likely that their potential shall rise in the future. To answer the question which factors determine the degree of post-suburbanization; the presence of a high amount of attraction factors determines the degree of post-suburbanization. These factors can to a certain extent be influence by the adjustment potential of the municipality. Figure 4.3 displays the model in which the fixed and dynamic factors are related to attractiveness.

Figure 4.3 | Model explaining current attractiveness



The conclusion is that if municipalities offer good accessibility, facilities and services, a pleasant living climate, plenty and well-maintained recreation facilities and if the municipality enjoys a good image in the region, they provide the attractiveness which is required for post-suburbanization. The municipality is able to influence these factors and thus indirect the attractiveness if they have a high adjustment potential. This means no or slight financial deficits, enough land in ownership, strong planning instruments and the political willingness to adjust the attraction factors. The question is whether the presence of attraction factors and adjustment potential are sufficient for a municipality to maintain post-suburbanizing in a changing socio-economic context. This issue will be addressed in the next chapter.

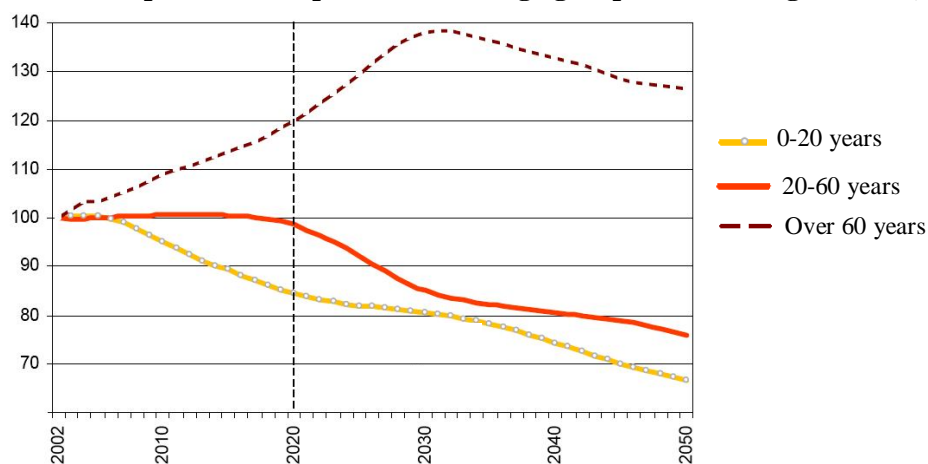
In this chapter, it will be discussed how municipalities can maintain growth and diversification in a changing demographic context and whether the adjustment potential and the attraction factors are of influence in maintaining post-suburbanization.

§ 5.1 | Demographic change in Schleswig-Holstein

The demographic change entails both a process of ageing of the population as an increase of immigrants, which are both happening in the sample region. These two trends are part of what is sometimes called the *new demographic regime*, which besides ageing and migration also contains the longer life expectancy, lower birth rate and dramatic changes in the household compositions – that is smaller households and patch work families (Champion, 2001).

As can be read from the table in appendix 1, the population is ageing in all municipalities. The increase of elderly as percentage of the total population in the period 2001-2007 ranges between 15% (Großhansdorf) and 52% (Henstedt-Ulzburg). The height of this percentage depends on whether a municipality has boomed in the suburbanization period of the 70s. The people who suburbanized in the 70s were mostly around their 30s at that time and will reach the age of 65 by now. Consequently, the process of ageing is severest in Hamburgs hinterland, whereas the rest of Schleswig-Holstein is less affected. The prognoses are that the hinterland will experience growth until 2020. After 2020 the population will not increase again until at least 2050. Figure 5.1 indicates that the of the three age groups only the 60+ group increases until 2030, the other groups are already decreasing. Yet the oldest group will also decrease after 2030 (DSN, 2004).

Figure 5.1 | Expected development of three age groups in Schleswig-Holstein, 2002-2050



Source: DSN, 2004

The consequences of this ageing are first that an older population requires other facilities (both in technical and social infrastructure as in housing) which are not foreseen at the moment (Bürkner et al, 2007). The suburban municipalities are largely characterized by single-family housing and facilities are adapted to the needs of the inhabitants of these dwellings, whereas an older population requires age-adapted dwellings and adapted facilities. Second, when the population enters the retirement age, the working population

decreases. As a consequence less people are responsible for yielding taxes for social security etc. for a larger group of consumers. A possible consequence of the increase of immigrants is that because of the deviating needs of this group may from the standard suburban population, adaptations in the housing stock and facilities are needed. The combination of this trend of an increasing percentage of migrants and the trend of a decreasing number of dwellings in the social rental sector might be problematic in the future (see inserted text box).

Decrease in the social rental sector

This decrease has several causes; first in the past ten years a wave of sales of large public housing stock portfolios to private buyers has occurred. Often, sales were used to fill the municipal treasury. In Schleswig-Holstein the *Landes-entwicklungsgesellschaft* (possessing 22.000 dwellings) was sold to *DGAG Deutsche Grundvermögen AG*. Secondly, the need for communal housing provision has decreased, since in a relaxed housing market the target groups for social housing should be able to find appropriate housing (Lorenz-Hennig & Zander, 2007). An often heard criticism is that municipalities loose their influence on social housing provision and urban development.

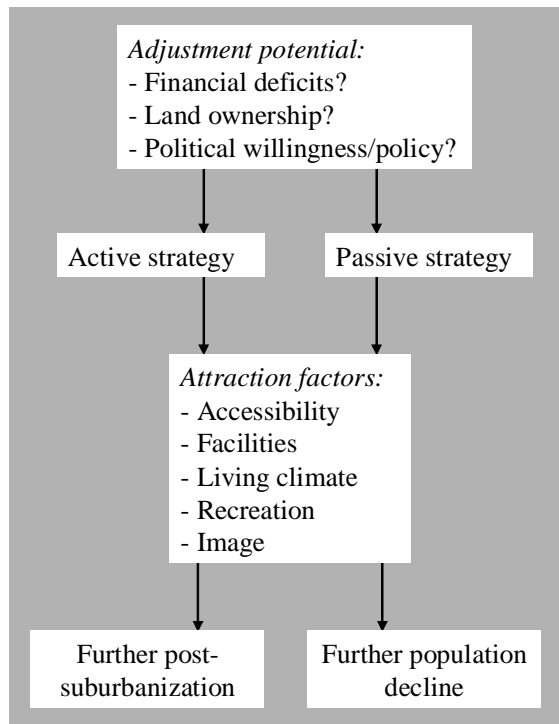
The population is ageing and obtaining an ethnic mix, which leads to chances in the labour force. As a consequence it becomes more difficult for firms to attract suitable employees. Since the chances for finding a suitable workforce are bigger in larger municipalities it can be expected that firms are more likely to settle in larger municipalities than in smaller ones, leaving the smaller municipalities in a downward movement of becoming less and less attractive.

§ 5.2 | Post-suburbanization in a changing demographic context

These demographic changes pose a serious threat to the post-suburbanization potential of municipalities. Both the average size of the household and the total population decrease, which means that the total amount of required dwellings remains the same, but there are fewer inhabitants. As a consequence the demand for municipal facilities also decreases, which may lead to problems with financially maintaining such facilities. Another result of this population decline is that post-suburbanization is no longer possible. There are two options: either the municipality ignores the demographic processes and does not undertake (planning) steps, which makes further population decline inevitable. The other option is that the municipality reacts by formulating and implementing policies which should make further post-suburbanization possible. In the latter case the success of these policies – that is further growth and diversification of the population – depends on a number of factors which will be discussed below.

The lack of adjustment potential to the changing (housing) demand is one of the greatest threats for municipal development. Without financial resources, land in ownership and the political willingness to undertake action, nothing can be done to counteract the demographic changes. So the adjustment potential is the first necessary condition for enabling further post-suburbanization (figure 5.2). Yet there are two other necessary conditions for further post-suburbanization. First, let's consider the type of strategy that is chosen. The selection of a strategy is influenced by the adjustment potential; it is difficult to implement an active (expansive) strategy in a financially restrained municipality. At the same time it is possible that even if the finances allow it, the local politicians decide that a passive strategy should be employed, which is the case in Großhansdorf. Finally, a municipality may have the financial resources and the support of the local politicians, but if a municipality has no land in ownership, it remains difficult to exert an active strategy, of which Quickborn is an example.

Figure 5.2 Future post-suburbanization



There are two types of strategies. The **active strategy** can according to Danielzyk et al. (2002) be subdivided into three subtypes (table 5.1); the expansive strategy is the most aggressive strategy, in which a large amount of single-family dwellings is created in order to attract young families. The maintenance strategy aims at maintaining the local attractiveness which appeals to the target groups such as the young families. The planning for decline strategy aims at using the chances which correspond with the population decline. An example is using fallow plots for recreational purposes. The expansive strategy is however contrary the politics of the Bund and the Land; further expansion equals further conversion of agricultural or forest land into built up areas. The Bund and the Land conversely call for sustainable land use, inward

expansion and redevelopment of existing built up areas (Bürkner et al, 2007).

The **passive strategy** has no goals; because of the financial losses corresponding with the already precarious financial situation, the municipality sees no further possibilities for improving the situation. These municipalities anticipate that the regional level will step in, or that the communal *Finanzausgleich* (which is the distribution of incomes and outcomes between the Bund, the Lands and the municipalities) will be revised. In my opinion, the planning for decline strategy is also a passive strategy, as population decline is accepted and there is no effort undertaken to prevent further decline. That means, that post-suburbanization is no longer possible when the planning for decline- and passive strategies are employed.

Table 5.1 | Types of communal strategies

	Active			Passive
	<i>Expansive</i>	<i>Maintenance</i>	<i>Planning for decline</i>	<i>Shrinking as a downward cycle</i>
Goal	Preventing out migration	Maintaining attractiveness and spatial structures	Regulated shrinking, developing qualities	Without goals
Measure	Extensive expansion of single family and detached housing	Target group-oriented development	Adaptations and reduction of infrastructure, development of recreational areas	Regional planning should be more restrictive, reform "Finanzausgleich"

Source: Danielzyk, Mielke & Zimmer-Hegmann, 2002, 25

The coherence between the adjustment potential and the success of the strategy is illustrated by the example of Bargtheide, a municipality which employs the expansive strategy. In this municipality single-family dwellings already dominate, but they continue to create single-family dwellings as a proactive strategy to fight the demographic changes. In their view, the

population will not age as long as young families are attracted. As one of the few municipalities in the northern surroundings of Hamburg, Bargteheide has managed to keep a healthy financial situation. Additionally, the municipality has land in ownership, so with their financial resources and the disposable land Bargteheide can develop at its own initiative and with municipal resources, after which the land is sold to home owners. Thanks to this policy, the municipality is able to construct exactly those dwellings which are in their view necessary and demanded by inhabitants. The yields stemming from this procedure are reinvested to adapt the technical and social infrastructure to the increased population, which again leads to more attractiveness. Bargteheide is thus an example of a municipality which has full adjustment potential.

The model of Bargteheide corresponds to a large extent with an instrument called land stock politic (*Bodenvorratspolitik*). A municipality starts a fund which is used to acquire land and the revenues of the sales of the plots flow back to the fund. According to Aring (1999), a municipality is better able to steer its local development with such a fund. Yet, if the financial situation of municipality is dire, a municipality is not able to start such a fund in the first place. Another issue regarding expansion is that when municipalities built more dwellings for young families, the incoming young families profit, whereas it is negative for the inhabitants which already live there because the average housing prices in the municipality decrease (due to more supply) (Cheshire & Sheppard, 2004).

So the adjustment potential determines whether an active or a passive strategy will be chosen. Based on the example of Bargteheide it seems that the adjustment potential together with the active strategy determines the success of the strategy. Yet, the third necessary condition plays a major role; that is, the presence of attraction factors. A municipality may have the financial resources, political willingness and land to exert an active strategy (for instance, the expansive and maintenance active strategies) but if the municipality is located at a high distance from Hamburg or an exit, or if the level of retail and services is substandard, the people and firms will not be attracted and further growth and diversification will still not occur. Inversely, even if a municipality has excellent attraction factors, if a municipality will not undertake action and formulates only passive strategies, the population will inevitably decline. An example is Pinneberg; its close location to Hamburg and the presence of a train- and U-Bahn station are favourable, yet the financial situation (adjustment potential) is dire, so an active strategy cannot be exerted. In sum, for a municipality which does not meet the conditions of presence of attraction factors and adjustment potential, it is impossible to successfully employ an active strategy; a municipality can then only use the passive strategy and accept population decline.

Although it is clear that the passive strategy will definitely lead to further population decrease and post-suburbanization is no longer possible, it is hard to say which of the active strategies will function better; the expansive one in which young families are attracted or the maintenance strategy which focuses on maintaining municipal attractiveness. However the expansive strategy will only function if the other necessary conditions are present too, otherwise these young families will not settle there in the first place. Municipalities employing the planning for decline strategy also need the attraction factors, but it is possible that for the changed population other factors are appreciated than the attraction factors discerned in this research. Figure 5.3 indicates that these attraction factors, the active strategy and the adjustment potential are all necessary conditions for post-suburbanization to

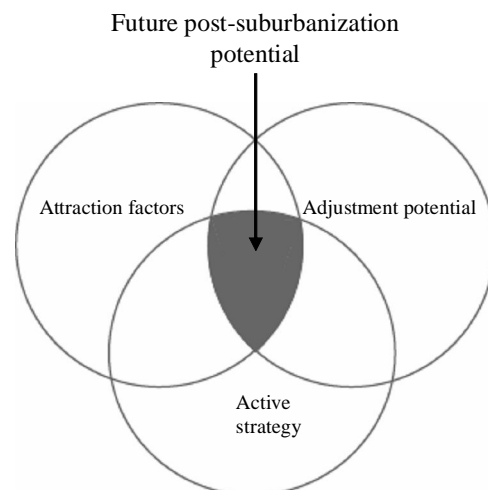
occur in a changing demographic context. Yet, in a region which faces population decline it is impossible that all municipalities employ an active strategy, simply because the demand for all those new dwellings is lacking. Therefore, only a number of municipalities can successfully exert such strategies, and that are those municipalities which meet the other two conditions of attraction factors and adjustment potential too.

In the sample, the majority of the municipalities are inclined to the planning for decline strategy and the passive strategy, mainly due to lack of financial resources. The expansive strategy is so far only exerted in Bargtheide. The fact that this expansive strategy has hardly been employed has another reason: the Land Schleswig-Holstein does not approve of large scale urban expansions because first there are already enough dwellings for the shrinking population and secondly these expansions harm ecological structures. By means of subsidies the land tries to propagate inward development, instead of outward development, and intercommunal cooperation. As a consequence, the municipalities with little financial resources are more inclined to follow this strategy, as it is financially supported by the Land. Municipalities with a healthy financial situation are not dependent on the Land so they can more easily exert expansive strategies which they should finance themselves.

These factors and conditions are different in each specific local situation. As a result, the 'recipe' for success is different for different municipalities. Therefore, the demand of the Land Schleswig-Holstein of intercommunal cooperation (Schleswig-Holstein, 2008) may be very difficult to realize, since even in neighbouring municipalities great spatial and socio-economic differences can occur and consequently different strategies need to be employed. In addition, this cooperation may be hindered because of increasing intercommunal competition, which is the result of a fiercer competition for firms and residents. It is therefore remarkable that the Land does not consider it to be necessary to have more statutory planning instruments to enforce this intercommunal cooperation. In the view of the Land, informal concepts are efficient and powerful enough, however the interviews with the planners have revealed that often the communal interests are preferred over the intercommunal or regional interests.

Not only intercommunal cooperation on the local level, but also on the supraregional level may be jeopardized. At this moment, the Metropolregion Hamburg does not play a significant role for the municipalities. Although there are meetings and conferences, an intense cooperation between the surrounding municipalities and the Metropolregion is lacking. That also has to do with the fact that the Metropolregion is based on voluntary cooperation because it does not possess any formal statutory planning instruments. Again, the own communal interests are preferred to supraregional interests. Another issue which depraves the cooperation between the municipalities on the one hand and the city Hamburg on the other hand is that Hamburg attempts to keep the residents within its city-state borders and prevent further suburbanization. By means of providing housing for young families the

Figure 5.3 | Necessary conditions



city tries to achieve this goal (Metropolregion Hamburg, 2006). Of course, this goal conflicts with the interests of the surrounding municipalities who favour further suburbanization. Understandably, it is hard to transcend the local mind frame and focus on what is best for the region.

For future post-suburbanization to occur, it is better when each municipality can exert its own policy which is custom-made for that specific local situation, instead of applying 'standardized' intercommunal urban policies. The consequence is that the differences between those who manage to successfully implement such policies and those who are not will increase, which leads to an increasing regional differentiation. This complex outcome of a region with post-suburbanizing and declining municipalities is the aggregate effect of simple local decisions and behaviour (Lacour & Puissant, 2007). Thus, on the local level such custom-made policies may be favoured because it is the only way in which post-suburbanization can develop further, however when ascending a higher scale of analysis such policies may increase regional disparities and weaken the position of the whole region.

CONCLUSION

This research sheds light upon the factors contributing to the attractiveness of municipalities and thus to the process of post-suburbanization. The research question was *to what extent do absolute and relative accessibility contribute to growth and diversification of the population, the employment structure and leisure in the northern surroundings of Hamburg?*

It was assumed that the presence of a train- or U/S-Bahn station and nearness of a highway exit (absolute accessibility) and accessibility of employment (relative accessibility) are the most important factors determining which municipalities are perceived as attractive by firms and residents. It is expected that this appreciation is expressed in high land prices. Logically, municipalities which are highly accessible should then be more attractive and score higher on the post-suburban variables (growth and diversification of the population, employment and leisure).

The regressions in the quantitative analysis revealed that absolute and relative accessibility are hardly directly related to the post-suburban outcomes. Yet, they do influence the land prices. For instance, land prices are higher in municipalities with high catchment potential, meaning that municipalities close to Hamburg have higher land prices than those located further away. The relation between land prices and post-suburban outcomes is more complex than the conceptual model indicates; it became clear that there are other intervening variables – that is other attraction factors – influencing both the land prices and the post-suburban outcomes (the availability of land, quality of business site, location in the region etc). The third secondary research question – *is there a relation between attractiveness, land prices and land market regulation on the one hand and growth and diversification of population, employment and leisure on the other hand?* – can thus be answered as follows; there is indeed a relation, but this relation is much more complex than the question assumes. Other factors are playing an intervening role. Among others, the land market regulation (which includes availability of land and expansion policies) influences both the post-suburban outcomes and the land prices. A direct relation between land prices and post-suburban outcomes could not be established in the regression. Because of the small sample size (17 municipalities) only a small number of the regressions turned out to be significant. The regional variance within the small sample size was too big to make general statements.

Therefore, another method was used to investigate the relations; Most Different System Design and Most Similar System Design. It was found that the variables in the conceptual model are not sufficiently able to explain the differences found between the municipalities. For instance, increase of elderly and growth of the tertiary sector are found in both the MDSD-groups and MSSD-groups, yet these two processes do not necessarily have anything to do with the independent variables or post-suburbanization, but rather with more general economic and demographic processes which are also occurring on other scales and in other regions. In the MDSD-municipalities similar scores on the post-suburbanisation variables generally correspond with similar scores on the accessibility variables. Yet, conversely, similar scores on the accessibility variables do not necessarily correspond with similar scores on the post-suburban variables. Furthermore it is found that multimodality is not a necessary condition for post-suburbanization; if a train station is present, a U/S-Bahn station is not necessary, and vice versa. It seems that this compensation mechanism functions in other cases too; a high distance to an exit may be compensated by a low distance to Hamburg, or a high catchment potential may compensate the high land prices.

Based on the quantitative analysis it can be stated that absolute and relative accessibility are indeed to a certain extent contributing to post-suburbanization, but it became apparent that other factors not being incorporated in the conceptual model also play a role. The qualitative analysis discovered these other factors by means of semi-structured interviews with the municipal urban planners and spokespersons of economic regional institutions. To answer the first secondary question, – *do the variables absolute and relative accessibility influence the perceived attractiveness of a municipality in the view of the public and private developers?* – absolute accessibility should according to the interviewees indeed be seen as one of the most important determinants for attractiveness, especially for firms. Relative accessibility is very important too. The question is then why also in municipalities with a low score on the post-suburbanization variables the importance of absolute accessibility is stated. Apparently a municipality can have the ‘appropriate’ accessibility parameters, but it still does not post-suburbanize. The contrary is also possible; a municipality which does not score well on the accessibility variables, but which does have high scores on the post-suburban variables. The answer to the second secondary question – *which other factors play a role in the perceived attractiveness of a municipality from the supply side perspective?* – is according to the interviewees the presence of soft factors such as the recreational and environmental qualities, the level of facilities and services such as schools, medical services, retail etc., the living climate and the image of the municipality. These factors are mentioned as being important for residents, whereas for firms only the accessibility factors are important. Again, also in low-scoring municipalities these assets were mentioned as being important. Apparently, the hard factors such as absolute accessibility *and* the soft factors such as facilities, image etc. are still not sufficiently able to explain the developments.

There are three factors which were not mentioned by the urban planners that are of utmost importance. These are the availability of land for expansion, the financial situation of the municipality and the willingness of the politicians with accompanying policies, which are captured here under the denominator *adjustment potential*. This potential indicates the degree to which a municipality is able to influence (that is, to adjust) the soft attraction factors (for instance with city marketing or retail policies) and to a certain extent also the hard attraction factors such as absolute accessibility (for instance, constructing a ring way, improving public transport). It is possible that a municipality can have all the hard and soft attraction factors, but when the municipality does not dispose of land for expansion for housing and businesses, the willingness of the local politicians for attractiveness-enhancing policies is lacking, or the financial situation is dire, the municipality will soon lose its attractive position and consequently post-suburbanization stops. Therefore current attractive municipalities – with high post-suburbanization potential – can lose their attractiveness due to low adjustment potential. In contrast, a current unattractive municipality with low post-suburbanization potential may gain attractiveness because the municipality does dispose of these adjustment potential assets. This is indeed found in the sample; currently, the high post-suburbanization potential municipalities employ passive strategies whereas the moderate post-suburbanization potential municipalities employ active strategies. With regard to the fourth secondary question – *which objectives do planning authorities have concerning the development of their municipality and how are these objectives implemented via planning regulation?* – the answer is that there are both active and passive urban policies, yet the success of these policies is not so much restricted by planning regulations per se, but rather by the lack of land, the willingness of the local politicians and the financial situation. So the answer to the fifth secondary question – *which differences can be discerned between the planning objectives and instruments of post-suburbanizing municipalities and*

municipalities which are not post-suburbanizing? – is that it is exactly on the nature of their policies (active vs. passive) and the height of the adjustment potential that the high potential and moderate potential municipalities differ. It clearly comes forward that this adjustment potential is of crucial importance for explaining the attractiveness of a municipality.

The research question can thus be answered; absolute and relative accessibility do influence *to a certain extent* the growth and diversification of the population, the employment structure and leisure in the northern surroundings of Hamburg. The other factors influencing this process of post-suburbanization are soft attraction factors and adjustment potential, which are both necessary conditions. The literature may have correctly indicated that the hard and soft attraction factors are of importance, yet the decisive importance of *adjustment potential* is not mentioned in the literature. Worse still, there is hardly any attention for the influence of the municipality as an actor in the (post)-suburbanization literature at all.

In sum, every municipality disposes of a unique mix of characteristics (hard and soft attraction factors and adjustment potential) and the composition of this mix determines whether a municipality is attractive enough for post-suburbanization. Therefore, in a region some municipalities provide that attractive unique mix and others do not, leading to a constellation of post-suburbanizing municipalities and municipalities which are not growing and diversifying. This leads to greater regional diversity than in regions with traditional homogeneous suburbs. In my opinion, this diversification on not only the local scale but also on the regional scale is an additional important characteristic of post-suburbanization, which has not been mentioned by the literature.

So post-suburbanization can have a fluid character; municipalities may gain and lose the characteristics which contribute to this process of growth and diversification of the population, employment and leisure. Especially in times in which the macro-context is changing, such shifts are likely to occur. At this moment, a process of demographic change is occurring in the region; the population is ageing, fewer children are being born and ethnic migration is increasing. The consequences of these processes for current and future post-suburban municipalities are that if the municipality does not step in, the population will decline. Because we witness a trend of decreasing household size, it is still possible that a declining population does not correspond with housing vacancies. Yet, the facilities and services have to be financed by less people, which may jeopardize the maintenance of such facilities and consequently the attractiveness of the municipality. Another effect of these demographic processes are that firms may have problems finding qualified employees and since the chances for finding qualified employees increase with the size of the municipalities, smaller municipalities may be at a disadvantage.

The sixth secondary question is subsequently *which factors determine whether a municipality is able to sustain their growth and diversification in a period of demographic change?* The best chances are foreseen in those municipalities which score positive on all three aspects; the hard and soft attraction factors and the adjustment potential. Yet, as long as they do not actively try to attract new inhabitants, the population will inevitably decline because the older inhabitants will decrease eventually. The answer is thus that a municipality must formulate active, expansive strategies which aim at attracting new residents. This can be achieved by creating new residential areas, which are especially meant for young families. A slightly less progressive strategy is maintaining the attractiveness of the municipality without further expansion. The third possibility – a passive strategy – entails doing nothing to counteract the demographic changes or to adapt the facilities and housing

stock to the needs of the older population. In that case, the population will most definitely decline. Yet, it is not advisable that a municipality that does not have enough attraction factors nor has a low adjustment potential employs an active strategy. Firstly because the population will not be attracted due to the limited attraction factors and secondly because the municipality is just not able to exert such policies because of the lack of land, financial resources or political willingness. Additionally, in a region in which the total population is declining only a small number of municipalities will be able to keep growing, at the cost of other municipalities which inevitably decline.

The analysis has revealed that the majority of the municipalities is already formulating policies to handle these demographic changes. But these policies focus on either meeting the demand of the changing population by means of age-adapted housing, adapted infrastructure etc., or on maintaining current attractiveness. The active strategy is so far only found in one municipality. It is not clear which strategy will function better in the long run, yet, it is clear that such pro-active strategies are only possible if the necessary conditions of first the attraction factors and second the adjustment potential are already present.

The question posed in the introduction why one municipality post-suburbanizes and another does not is hard to answer in a general way. Because of the very locally-specific nature of the driving forces, generalization is hardly possible. There are great differences between the municipalities and additionally the spatial and socio-economic variance is too large to make generalizing statements about post-suburbanization. Yet, it became clear that in correspondence with the traditional geographical models of Burgess, Hoyt and later Garreau's edge cities regional accessibility is important, but I would like to add the importance of both the soft attraction factors and adjustment potential, or government policies. These latter two explanations are occurring on the local scale in contrast to the former which is expressed at both the regional and the local scale. Thus, the 'regional restructuring hypothesis', the 'deconcentration hypothesis' and the 'government-policy explanation' are needed.

I acknowledge that the scope of this research was limited and that due to the small size of the sample especially the results of the regression are limited. Yet despite of the small sample, the main result – the great regional variance in post-suburban outcomes and in driving forces – did come to the fore. I would like to add that the results can only account for the specific region, but still the results indicate that a concept such as 'post-suburbanization' cannot be taken for granted yet. By lack of a better term, the term post-suburbanization is employed here, but it is advisable to come up with a term that better covers the overtones. The prefix 'post' indicates that the end phase (of suburbanization) is reached, whereas it has become clear in this research that by no means it can be said that the suburbs have reached the last stadium. If any, they are now in a transitional phase which is maybe even heralding a new phase of which at this moment very little is known.

In any case more research concerning the concept post-suburbanization is necessary, both in different regions, in different socio-economic contexts and with larger samples. This should at least lead to a workable and established definition of the concept. Since in this research only the supply side was taken into account, it would secondly be advisable to take the demand side perspective into account. By combining the demand- and supply side it could be possible to make more valid statements about post-suburbanization. Thirdly, the concept of adjustment potential should be operationalized in order to investigate the influence of this concept. Maybe then, the discussion about post-suburbanization could be raised to a higher theoretical level.

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APPENDIX 1 | MUNICIPAL QUANTITATIVE VALUES

	Step 1				Step 2				Step 3				Leisure					
	Relative access.		Absolute access.		Land price		Taxation		Population		Economy			Overnight stays				
	Distance to Hamburg	Catchment potential	Axiality	Modality	Comm.	Mixed	Resid	Property tax	Hebe-satz	Total	Immigrants % of tot pop	Total employment			Employ. tertiary sector	Comm. balance		
			Distance exit in km	S/U- bahn Train	€/m2	€/m2	€/m2	%	%	2000	2007	'00-'07	'00-'07	'00-'07	absolute	03-'06		
Ahrensburg	30,5	49984	5	1	80	513,2	195,9	290	325	29 117	30 138	3,51	19,69	19,91	10,31	31,32	5236	3,81
Bad Bramstedt	48	25779	4,5	2	13	175	134,5	270	310	12 572	13 418	6,73	-13,00	15,86	-5,90	3,75	-180	-37,45
Bad Oldesloe	49,5	25848	4,5	1	57	316,4	159,8	290	320	23 314	24 131	3,50	-13,02	18,57	2,29	7,43	1522	1,16
Bad Segeberg	63,5	19658	3	1	49	153,7	103,4	290	330	16 042	15 918	-0,77	44,34	23,34	-16,54	12,59	2882	3,50
Bargteheide	43	30879	6	1	75	209,8	205	250	300	13 680	14 052	2,72	-7,79	27,28	-0,32	-1,77	-1205	xxx
Barmstedt	37	35531	8	2	55	280	145	290	320	9 283	9 535	2,71	-4,36	15,59	-11,40	5,98	-1630	25,28
Elmshorn	35,5	34331	5	1	70,82	398,9	148,3	330	340	47 391	48 331	1,98	2,55	21,45	-4,43	10,77	-228	11,22
Großhansdorf	29	43098	3	2	80	253	274,6	260	290	8 887	9 033	1,64	-0,88	14,99	5,47	8,26	-974	xxx
Henstedt-Ulz.	39	35893	6,5	2	51,58	210	170,8	250	300	24 950	26 242	5,18	-18,19	51,91	7,62	19,28	-4121	33,95
Kaltenkirchen	40	31946	2,5	2	43	186,6	150,2	240	300	18 081	19 684	8,87	-16,37	34,49	11,35	14,14	613	25,00
Norderstedt	19,5	60400	8,5	2	156,7	288,9	225	260	330	71 523	71 330	-0,27	-7,66	36,82	0,89	4,16	3501	31,73
Pinneberg	20	57605	2	1	82,12	332	196,9	285	340	39 423	41 461	5,17	7,55	20,94	-7,73	19,28	-3661	2,88
Quickborn	30	42796	5	1	78,48	294,2	180	225	290	19 875	20 276	2,02	0,13	36,01	10,52	-11,29	-1054	27,16
Tornesch	31	xxx	4,5	1	75	xxx	146,4	250	300	12 644	12 896	1,99	11,73	30,05	xxx	xxx	-1301	xxx
Trittau	33	35631	7	2	70	212,8	159,1	250	300	7 473	7 640	2,23	-18,49	27,29	-4,78	8,07	181	xxx
Uetersen	35	37012	8	2	75	197,3	149,9	250	300	18 056	17 866	-1,05	11,91	19,41	-2,37	10,33	-1417	15,32
Wedel	21	54193	14	2	129,8	520,7	221,8	250	300	32 060	32 028	-0,10	8,94	21,82	1,41	11,44	15	20,62

Relative access.	Absolute access.	Land price	Taxation	Population	Economy	Leisure
low	high	high	high	high inc increase	increase high inc	positive increase
medium	low	low	low	modera neutral	neutral moderate	negative moderate
high	high	low	low	decreas decrease	decreas decrease	decrease decrease

APPENDIX 2 | CORRELATIONS

	Pearson's r	Sig. (2-tailed)	Pop growth	Immigrants	Elderly	Total employ	Growth tertiar	Commut balance	Overnight stay	Catch ment	Distance Hburg	Distance exit	Train	USBahn	Price commer	Price mixed	Price resid	Property tax	Hebesatz
Population growth	Pearson's r		1,000																
	Sig. (2-tailed)																		
Immigrants	Pearson's r		-,545	1,000															
	Sig. (2-tailed)		,024																
Elderly	Pearson's r		,170	-,315	1,000														
	Sig. (2-tailed)		,514	,217															
Total employment	Pearson's r		,335	-,421	,438	1,000													
	Sig. (2-tailed)		,205	,105	,089														
Growth tertiar	Pearson's r		,209	,295	-,052	,053	1,000												
	Sig. (2-tailed)		,438	,268	,847	,844													
Commuter balance	Pearson's r		-,228	,334	-,199	,052	,202	1,000											
	Sig. (2-tailed)		,379	,191	,443	,848	,454												
Overnight stay	Pearson's r		-,258	-,137	,637	,350	-,074	-,162	1,000										
	Sig. (2-tailed)		,395	,656	,019	,241	,809	,596											
Catchment Hamburg	Pearson's r		-,193	,030	,111	,316	,200	,024	,374	1,000									
	Sig. (2-tailed)		,473	,912	,682	,233	,458	,930	,208										
Distance Hamburg	Pearson's r		,132	,158	-,106	-,384	-,077	,160	-,415	-,943	1,000								
	Sig. (2-tailed)		,614	,545	,686	,142	,777	,539	,159	,000									
Distance exit	Pearson's r		-,486	-,083	,054	,009	-,120	,028	,362	,350	-,372	1,000							
	Sig. (2-tailed)		,048	,751	,836	,974	,657	,914	,224	,184	,142								
Train	Pearson's r		-,071	,464	-,094	-,083	,015	,155	-,220	-,115	,198	-,447	1,000						
	Sig. (2-tailed)		,787	,061	,721	,761	,957	,552	,471	,672	,445	,072							
U/S-Bahn	Pearson's r		,364	-,205	,102	,358	,168	-,069	,179	,531	-,466	,054	-,290	1,000					
	Sig. (2-tailed)		,151	,429	,696	,173	,535	,791	,559	,034	,059	,836	,259						
Price commercial	Pearson's r		-,588	,124	,146	,182	-,046	,239	,512	,810	-,734	,562	-,064	,147	1,000				
	Sig. (2-tailed)		,013	,636	,577	,500	,865	,074	,098	,001	,019	,403	,268	,410					
Price mixed	Pearson's r		-,178	,229	-,224	,274	,361	,289	,098	,605	-,554	,122	-,315	,115	,521	1,000			
	Sig. (2-tailed)		,510	,395	,404	,304	,170	,278	,749	,013	,026	,122	,315	,115	,038				
Price residential	Pearson's r		-,151	-,182	-,007	,492	-,019	-,018	,380	,705	-,677	,214	-,177	,379	,644	,400	1,000		
	Sig. (2-tailed)		,563	,484	,978	,053	,945	,944	,200	,002	,003	,409	,496	,134	,005	,125			
Property tax	Pearson's r		-,047	,303	-,506*	-,497	,394	,249	-,376	-,149	,234	-,211	,367	,092	-,152	,322	-,248	1,000	
	Sig. (2-tailed)		,857	,237	,038	,050	,131	,335	,206	,582	,367	,417	,147	,725	,559	,224	,337		
Hebesatz	Pearson's r		-,043	,333	-,256	-,506	,393	,320	-,261	,130	,052	-,190	,386	,143	,097	,286	-,232	,841	1,000
	Sig. (2-tailed)		,869	,191	,321	,046	,132	,211	,390	,631	,842	,464	,126	,585	,712	,282	,370		

APPENDIX 3 | LIST OF INTERVIEW PARTNERS

<i>Municipality</i>	<i>Interviewee</i>	<i>Function</i>
Ahrensburg	Ms. A. Becker	Director of the department of Urban Planning, Building and Environment
Elmshorn	Mr. Dr. Hardinghaus	Director of the department of Urban Planning
Großhansdorf	Mr. S. Rabe	Director of the department of Building and Environment
Kaltenkirchen	Mr. R. Saggau	Staff member department of Building and Planning
	Mr. M. Pohlmann	Staff member department of Finances
Pinneberg	Mr. K. Stieghorst	Director of the department of Building
Quickborn	Ms. F. Walter	Director of the department of Urban Planning
Barmstedt	Mr. W. Rubart	Staff member of the department of Urban- and Municipal Development
Henstedt-Ulzburg	Mr. V. Duda	Director of the department of Building, Planning & Environment
Wedel	Mr. J. Busch	Director of the department Urban- and Landscape Planning
Trittau	Ms. S. Jonas	Staff member of the department of Building
Bad Oldesloe	Ms. A. Haußer	Staff member of the department Planning and Environment
Bargteheide	Mr. J. Teschke	Director of the department of Finances and Building Management
Bad Bramstedt	Mr. E. Dorow	Deputy Director of the department of Building
Bad Segeberg	Ms. U. Heldt	Director of the department of Building
Norderstedt	Mr. Seevaldt	Director of the department of Planning
Tornesch	Mr. C. Oppermann	Director of department of Building and Planning
Uetersen	Mr. H. Trepkau	Staff member of the department of Planning

<i>Company/organization</i>	<i>Interviewee</i>	<i>Function</i>
Neue Lübecker Baugenossenschaft	Mr. T. Köchig	Chairman of the Board
Metropolregion Hamburg	Mr. A. Stark	Member of the Office
Wirtschaftsförderungs-, Entwicklungs- und Planungsgesellschaft der Kreise Pinneberg und Segeberg WEP	Ms. G. Kellermann	Member of the Office
Sparkassen-Erschliessungsgesellschaft Holstein	Mr. L. von Schneidemesser	Project manager
Wirtschaft- und Aufbaugesellschaft Stormarn	Mr. G. Frank	Project manager
Innenministerium Schleswig-Holstein	Ms. B. Domin	Member of the department of Land planning
Industrie- un Handelskammer	Mr. M. Braatz	Member of department Business location politics

APPENDIX 4 | INTERVIEW QUESTIONS PUBLIC PLANNERS

General questions:

- 1) What do you think is the most important factor determining the attractiveness of your municipality for attracting **firms**?
- 2) What do you think is the most important factor determining the attractiveness of your municipality for attracting **residents**?

Accessibility

General:

- 3) Do you think that accessibility in the form of access to high way exits and the presence of train or U/S-Bahn stations plays a role in the location decisions of A. firms and B. residents?

For municipalities with **high absolute accessibility**:

- 4) Do you think that absolute accessibility in the form of closeness of high way exits and train stations makes your municipality more attractive for A. firms and B. residents?

For municipalities with **low absolute accessibility**:

- 5) A. Do you think that the fact that this municipality does not have high access to a high way exit is disadvantageous in attracting A.firms and B. residents?

For municipalities with **high access to employment potential**:

- 6) Do you think that the fact that surrounding municipalities provide a large pool of employment makes your municipality more attractive for firms and residents?
- 7) Do you think that a large pool of employment in surrounding municipalities contribute to higher competition between municipalities?

For municipalities with **low access to employment potential**:

- 8) Does the fact that there is little employment in the surrounding municipalities contribute to a higher attractiveness of this municipality?

Land prices

General:

- 9) What do you think determines the land prices in your municipality?
- 10) Would you think that the height of the land prices reflect the attractiveness of the site?

For municipalities with **high land prices**:

- 11) Do you think that the high land prices scare off new firms and residents?

For municipalities with **low land prices**:

- 12) Do you think that the low land prices play an important role in attracting new firms and residents?

Land market regulation

General:

- 13) Do you think that taxation level plays a role in the location decisions of firms and residents?
- 14) Did you consider the taxation level in surrounding municipalities when deciding on the height of the taxation?
- 15) Do you think that taxation can be a instrument in the inter-municipal competition for attracting firms and residents for your municipality?
- 16) Does the pressure on available land play a role in deciding the height of taxation in your municipality?

For municipalities with **low taxation**:

- 17) Do you use the relative low level of taxation for built-up area and Hebesatz as a deliberate instrument to attract firms and residents? <Why not?>
- 18) Does the low taxation in fact contribute to higher attractiveness for firms and residents and does it consequently attract more new A. firms and B. residents in this municipality?

For municipalities with **high taxation**:

- 19) What is the reason for establishing this high taxation level?
- 20) Do you think that this high taxation scares away A. firms and B. residents in your municipality?
- 21) Do you feel that this high taxation level is disadvantageous in the competition among municipalities to attract firms and residents?
- 22) Do you think that land prices, taxation and location with respect to accessibility are sufficient explanations for the development of your municipality? <if not, which other factors?>

Land development policy

- 23) Which goals are set for future urban development in your municipality (further growth or preservation of the present urban structure etc.)?
- 24) What kind of measures are you using to achieve these goals?
- 25) Have you formulated policy for handling the demographic changes?
- 26) Is this policy based on guidelines set by the Land Schleswig-Holstein?
- 27) What is your relation with the Metropolregion Hamburg in administrative respect and with respect to urban policy goals?
- 28) What is your relation with the Kreis in administrative respect and with respect to urban policy goals?
- 29) What is your relation with the Land Schleswig-Holstein in administrative respect and with respect to urban policy goals?
- 30) Does your municipality have financial debts?
- 31) Does your municipality have land in ownership?
- 32) Do you feel that your municipality is part of the greater Metropolregion or do you see your municipality more as an autonomous municipality which just happened to be located in the urban agglomeration of Hamburg?

Individual questions

... Are related to the specific outcomes of the quantitative analysis

- 33) Which private developer is the most important actor in your municipality?
- 34) Are there any geo-situational aspects which played a role in the development of your municipality which are not mentioned in this survey?