

Chapter 16

Analysing the Competitive Advantage of Cities in the Dutch Randstad by Urban Market Overlap

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Abstract In the modern economy, cities are assumed to be in fierce competition. In contrast with this, regional and national Dutch policymakers advocate the Randstad region as a single urban region in which economic complementarities are supposed to be numerous. Using insights from urban systems theory and urban ecology, we introduce an indicator to estimate the degree of revealed competition between cities based on patterns of inter-firm relations between these cities. Results indicate that urban competition is more the rule than the much-anticipated urban complementarities, as urban functional influences of the Randstad cities spatially overlap.

Keywords Urban competition • Urban complementarities • Randstad Holland

1 Introduction

At the present day and age, it has become widely acknowledged in urban studies and the planning literature that cities compete over product markets, inward investments, firm establishments, tourists, hallmark events and government funding (Lever and Turok 1999) and that this competition takes place at a local, regional, national, and even continental and global scales (Gordon 1999). In order to maintain their position within the urban system, cities have to work on their

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competitiveness, or their ability to successfully compete with other cities. As a result, local authorities put ever more effort into enabling and maintaining their cities as attractive locations of residence and firm location.¹ In order to keep and attract firms, workers and tourists one should not only think of cost reductions such as tax credits and project financing, but also of investments in amenities, physical infrastructure, and public transportation networks (Begg 2002).

This increased interest in the concept of ‘urban competitiveness’ has resulted in a substantial number of urban ranking lists, in which cities are compared on their internal characteristics, such as their economic performance (Kresl and Singh 1999; Lever 1999), creativity and innovativeness (Florida 2005), and access and quality of services (Kaufmann et al. 2005). This benchmarking of cities has not only come to pass in academia and commercial research, but also engrained within public policy and popular culture. Nowadays, local authorities increasingly publicise their relative competitive stance with that of other places (Malecki 2002), while at the same time many newspapers and magazines (e.g., *Fortune Magazine*, *Forbes*, *Money*) seem to be obsessed with rankings of how cities compare to each other (McCann 2004).

Nevertheless, empirical evidence on urban competition remains limited. Although most studies on urban competitiveness assume that cities compete *vis-à-vis* one another, little attention is paid to measuring the intensity of competition between cities. Yet, in order to validate the urban competitiveness concept, it is important to understand to what extent cities compete and where this competition comes from. Shifting our focus from urban competitiveness to urban competition in terms of market overlap can enrich the literature on competitive cities by providing a method to identify the strongest competitors from the rest.

In this chapter we focus on the measurement of revealed competition between cities. We calculate the relative amount of market overlap that a certain city has with any other city within an urban system, identify clusters of competitive cities, and the determinants of this competition. Using insights from urban systems theory and urban ecology, we thus measure the intensity of competition between cities² in the Dutch Randstad on the basis of the functional linkages that these cities have with other cities. In this, we argue that cities are in competition to the extent that they serve the same market area for the same urban functions (see Berry et al. 1988). Although there are many dimensions upon which cities can compete (Lever and Turok 1999), we will focus on *economic competition* between cities in terms of providing similar products to the same market areas. In particular, attention is

¹ Cities compete over firms and households simultaneously, as often the employment-population interdependency is large and circular in cities (Carlino and Mills 1987). For the Dutch Randstad, recent studies show that “people follow jobs more than the other way around”, but that this causality is scale, sector, regional and time dependent (De Graaff et al. 2010). Not surprisingly, especially non-basic jobs follow people in the Randstad region, and controlled for that the causality is not that clear. In this paper we focus on basic industries, and hence are little served by this earlier literature on employment-population dynamics.

² By contrast, economists usually define competition as a market or industry property.

drawn to firms in basic sectors (manufacturing, wholesale and producer services), which have a non-local export market and are according to Economic Base Theory (Blumenfeld 1955) considered most important for local economic growth.³

Our main conclusion is that in the Dutch Randstad region, urban competition is more the rule than the much-anticipated urban complementarities, as urban functional influences – especially of the four largest cities - spatially overlap. This questions recent policy initiatives towards a functional unification of the Randstad striving for economic complementarities (OECD 2007). The prosperous co-evolution of the Randstad economy with growing urban competition even suggests a positive relationship that better should *not* be battled by policy.

The remainder of this chapter is organized as follows: In Sect. 2, we focus on the conceptualization of economic competition between cities using different dimensions of urban systems outlined by Gordon (1999). Section 3 is devoted to how economic competition between cities can be measured, using a measure of overlapping market areas derived from statistical ecology. Section 4 provides an application of this method to competition between cities in the Randstad Holland. Section 5 discusses the results in a policy perspective.

2 Urban Systems and Inter-urban Competition

2.1 Competition and Complementarities in Urban Systems

Recently, there has been increased interest in the role and nature of the dynamics of urban systems. In this literature, it is contended that the rise of the *network economy* – exemplified by recent advances in transport and communication technology, the ongoing globalization, the rise of common markets, growth of multinational firms, and the individualization of production – has had a significant impact on the spatial economic structure of cities and regions (Batten 1995). At the local level, the monocentric city is perishing and suburban areas are emerging into local centres that start competing with the original core. At the same time, economic processes are taking place at an ever larger geographical scale than those of the ‘traditional’ city itself (Kloosterman and Musterd 2001). Cities are no longer confined by territorial delineations, but by patterns of interaction (Pred 1977). In this, ‘urban competitiveness’ should be considered as a ‘networked phenomenon’, dependent on a ‘society of cities’, in which ‘no city develops in isolation’ (Storper 1997) - but forms part of a ‘system of cities’ (cf. Berry 1964). However, when the market areas of cities show an increasing amount of overlap, it is likely that the

³ Although we only focus on economic competition between cities, the proposed indicator in this chapter is not particularly limited to competition between cities and can without any difficulties be applied to other dimensions of urban competition and other forms of territorial competition, such as competition between regions.

competition between these cities intensifies. When cities expand their market areas, it is therefore to be expected that their market areas will increasingly overlap with the market areas of other cities and the degree of competition between these cities increases. Cities then start to function as *substitutes* to each other.

This conceptualization of cities competing over overlapping market areas has a long-standing history in urban systems research in general, and in retail geography in particular (see e.g., Berry et al. 1988; Parr 1995). Early research by Galpin (1915) on urban–rural relations and by Reilly (1931) on retail location, already pointed out that centres compete as locations can be served from several centres. Firms and consumers usually choose between different locations to buy their goods and services. For example, in Reilly's *Law of Retail Gravitation* it is explicitly accounted for that the sales potential of a given retail centre is not only dependent on the size of this centre and the consumer expenditure in the surrounding area, but also on the extent to which a retail centre is surrounded by competing retail centres, which attract consumers from similar locations (see also Huff 1964; Lakshmanan and Hansen 1965). This argument can be extended to competition between cities in general in terms of market area overlap: cities are in competition to the extent that the goods and services produced in these cities are exported to similar locations. This can concern both trade in intermediate and final goods and services. The actors then are municipality and regional councils that take measures to improve the competitive position of their city-region, but also national authorities (e.g. responsible for infrastructure), large companies and real estate developers play a role in this process (Ho 2000).

However, market area overlap in different functions in itself does not necessarily constitute urban competition. On the contrary, if in an urban system the various cities specialize in different sectors, they in fact complement each other by fulfilling different economic roles (Van Oort et al. 2010). The situation of two cities within the same urban system that each produces different goods or services for which the other has an effective demand, can lead to an exchange between the two places. For example, a city specialized in financial services can provide these services to a city specialized in manufacturing, and vice versa. Hence, cities do not have to produce all different types of goods demanded in the city, but can benefit from specializations elsewhere in the urban network (Meijers 2005). Gordon (1999) mentions in this respect the delegation of routine administrative tasks of headquarters to places offering blue-collar labour at lower pay rates.

2.2 *Defining Competition between Cities*

Along these lines, two conditions for the existence of economic competition between cities can be identified, namely (1) geographic market overlap and (2) functional overlap.

2.2.1 Dimension 1: Geographical Market Overlap

Cities are in competition to the extent that they serve the same market area or have overlapping market areas. As outlined in the previous section, geographic market overlap does not necessarily have to be based on physical proximity. Cities are in competition to the extent they have exporting linkages (of goods, services and provisions) to the same other cities. Competition between cities can take place at various geographical scales, in which contending cities at a local scale do not necessarily have to be in competition at a national or international scale.⁴ For example, the Dutch cities Amsterdam and Rotterdam may compete locally, sharing the same hinterland (Randstad Holland), but may differ in their functional linkages to the rest of the world. Likewise, London and Paris may compete on a global scale, but not on a local scale, serving different local hinterlands (the Greater South East and Ile-de-France respectively).

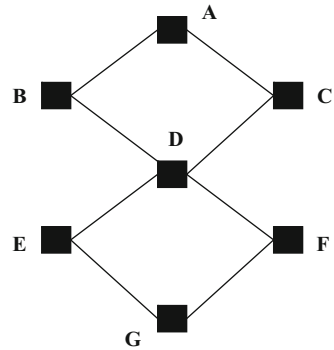
2.2.2 Dimension 2: Functional Overlap

Cities are in competition to the extent that they perform the same function within an urban system. In this sense, we can distinguish between (1) sectoral overlap and (2) organizational overlap. First, cities are in competition to the extent they are specialized in the same sectors or produce the same products. Competition is here conceptualized as the lack of inter-urban industrial differentiation, in which cities have overlapping product niches. In this respect, Markusen and Schrock (2006) explicitly point to the mimicking of the success of legendary cases such as Silicon Valley and the Cambridge cluster, as drivers behind this overlap. Nowadays, most cities endeavour to be clusters of high-tech or creative industries. As a result, cities become less distinctive and competition intensifies. Second, cities are in competition to the extent they perform the same organizational function (Gordon 1999). One can think of the traditional division between white-collar and blue-collar work, but also of a division between headquarter and subsidiary (production plant) functions. It is in the *absence* of functional differentiation of labour, that these cities are more likely to be in competition.

When both the geographic and functional niches of cities overlap, cities are in competition as they have to share the same 'part of the pie'. In sum, cities (that are not distinctive and) that serve the same hinterland for the same functions are expected to compete for the same market area in terms of the acquisition and retention of the same firms and customers.

⁴ In other words, one can speak here of non-perfect aggregation across spatial scales.

Fig. 16.1 Functional linkages in a hypothetical urban system



3 Measuring Urban Market Overlap

Although the existence of urban competition is widely recognized in urban geography and planning, few attempts have been made to explicitly measure the extent of competition between cities or within a sub-system of cities. By employing the two dimensions of urban market overlap discussed in the previous section, we will now turn to our measurement of urban competition.

We use a measure derived from statistical ecology that looks at niche overlap. The theoretical concept of niches dates back to the first half of the twentieth century and then mainly concerned descriptive biological studies on the overlap of the habitats of different species.⁵ In its original connotation, a niche of species is defined as the set of environmental states in which a species thrives and typically consists of the resources on which a species depends for its survival. From the 1970s onwards, the concept of niche has become widespread in the social sciences, most notably in organization studies (Hannan and Freeman 1977; Podolny et al. 1996) and social network analysis (Burt and Talmud 1993; Sohn 2004). Analogous to its ecological and organizational counterpart, an urban niche can be regarded as the market area of a city in which it employs its economic activities, or in which it fulfills its activities. In this, overlapping market areas result in urban competition. Consider the following urban linkage structure for a *particular function* in Fig. 16.1.

In this urban system, for this particular urban function:

- Cities A and G are linked to different cities (to cities B and C and cities E and F respectively). For this reason, the similarity between their geographical markets is 0 %, meaning that there is no urban competition between cities A and G.
- Cities B and C have exactly the same linkage structure, as both cities are linked to city A and D. Hence, the similarity between their networks is 100 %, meaning that the geographical markets of cities B and C maximally overlap.

⁵ An overview of the history of the niche concept in the ecological and social sciences can be found in Popielarz and Neal (2007).

- Cities A and D have a partly overlapping linkage structure. Although cities A and D are both linked to cities B and C, city D is also linked to cities E and F. Hence, the intensity of competition between cities A and D is intermediate as their geographical markets only partly overlap.

In line with the theoretical concept of niche overlap, two cities are in competition to the extent they are linked to the same other cities for equal functions. In contrast to the artificial urban system above, real urban systems usually differ in size, while simultaneously the functional linkages between cities can differ in intensity. Hence, in order to facilitate comparisons of the degree of urban competition between cities, the strength of linkages between two cities should be expressed as the relative dependency of a city on another city. For example, if city A has two linkages with city B and one linkage with city C, the geographical market (niche) of city A for the urban function under consideration consists for 2/3 of city B and for 1/3 of city C. Hence, it is best to speak of ‘revealed competition’ between cities as it is based on the observed behavior of economic actors (firms, consumers) in these cities rather than their preferences (Berry et al. 1988). In addition, this provides a means to differentiate from more economic accounts of competition, in which the degree of competition is perceived as a property of an industry or market and not as a property of a relationship between two actors.

Over the years, several statistical approaches to formally measure overlap between members of a population have been developed. Amongst others, we find the alpha-coefficient, Euclidean distance, Manhattan distance, cosine, and standardized versions of these similarity indices (e.g., Bray-Curtis, Kulczynski, Gower metric).⁶ Notwithstanding their computational differences, a central element of these measures is that they look at the *dissimilarity* or *ecological distance* between the members of a given population.

Based on comparative research in ecological statistics (e.g., McCune and Grace 2002) and our interest in compositional overlap (rather than absolute overlap),⁷ we use in our study the relative Manhattan distance to measure ecological distance, or in our case the absence of overlap between the geographical markets of cities for a particular function. First, the relative Manhattan distance has the desired property that it uses value zero when there is a maximum niche overlap and a constant maximum value (e.g., 1) when there is no niche overlap (Beals 1984). Second, the relative Manhattan distance shows a low discrepancy between the predicted and observed similarity. Third, the relative Manhattan distance has a robust linear relationship with true ecological distance when tested with simulated data (Faith et al. 1987).

⁶ See McCune and Grace (2002) for an overview of all basic measures of niche overlap.

⁷ For this reason, we do not use the also recommended Bray-Curtis or Kulczynski coefficient to measure ecological distance. However, from a mathematical point of view, both the Bray-Curtis and the Kulczynski coefficient equal the Relative Manhattan distance when standardized to equal totals (see Faith et al. 1987).

The relative Manhattan distance measures the relative distance or *dissimilarity* in niche between two species i and j for a particular urban function k , here expressed in the non-overlapping of geographical markets between two cities i and j . More formally (16.1):

$$RDISTANCE_{ijk} = 1 - \left[\sum_{h=1}^p \text{MIN} \left(\frac{a_{ih,k}}{\sum_{h=1}^p a_{ih,k}}, \frac{a_{jh,k}}{\sum_{h=1}^p a_{jh,k}} \right) \right], i \neq j \neq h, \quad (16.1)$$

which can be rewritten as (16.2),

$$RDISTANCE_{ijk} = \frac{1}{2} \sum_{h=1}^p \left| \frac{a_{ih,k}}{\sum_{h=1}^p a_{ih,k}} - \frac{a_{jh,k}}{\sum_{h=1}^p a_{jh,k}} \right|, i \neq j \neq h \quad (16.2)$$

in which $a_{ih,k}$ is the strength of the urban linkage (e.g., the number of business interactions) between city i and a third city h for urban function k , and $a_{jh,k}$ the strength of the urban linkages between city j and city h for urban function k . When measuring the intensity of competition between cities i and j , linkages between city i and j are excluded, as well as linkages that remain within a city in order to measure genuine competition and not urban complementarities. The distance measure is relative because it gives the absolute difference between the cities divided by their absolute sum. In other words, by standardizing the absolute difference to sample totals, the total non-overlap of the geographical markets of the two cities i and j is converted into a percentage non-overlap of the geographical markets of two cities. This allows comparison of the cities by the relative distribution of urban linkages across space. The degree of similarity between two cities or the *competition coefficient* can then be expressed as (16.3):

$$COMPETITION_{ijk} = 1 - RDISTANCE_{ijk} \quad (16.3)$$

The competition coefficient $COMPETITION_{ijk}$ typically ranges between 0 and 1. If the competition coefficient equals zero, the geographical markets of cities i and j are totally different and the intensity of competition between the two cities is at minimum. If the competition coefficient equals one, the geographical markets of cities i and j completely overlap and the intensity of competition between the two cities is at maximum.

Equations 16.1, 16.2, and 16.3 present a method to estimate the intensity of competition between cities for one particular urban function. This function can range from global command centers in the advanced producer services sector to the production site in the textiles and apparel commodity chain. The total intensity of competition between two cities for a number of urban functions can be estimated by

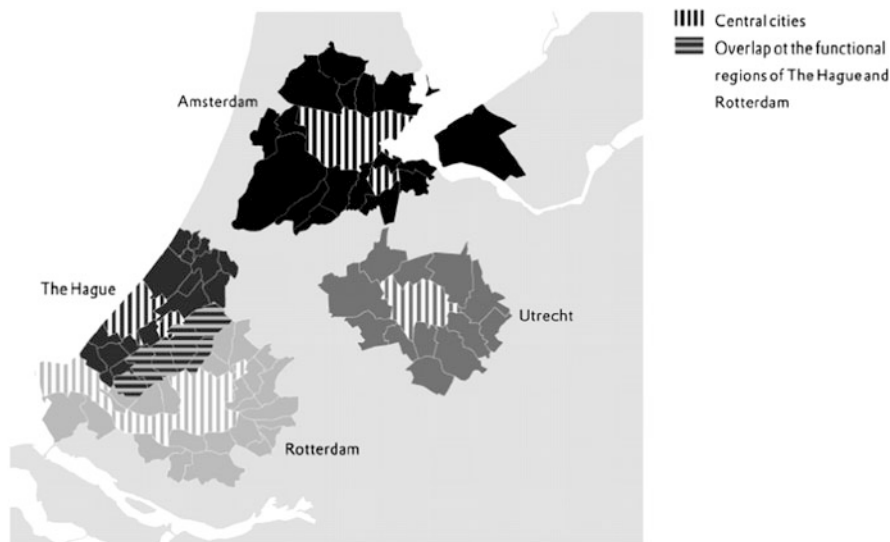


Fig. 16.2 The Dutch Randstad

weighting the competition coefficients for the different urban functions k with the overall importance of these urban functions in the two cities.

4 Urban Market Overlap in the Dutch Randstad

4.1 *Urban Complementarities in the Randstad*

In order to show how the described techniques in the previous section can be used, we show the case of economic competition in the Dutch Randstad. From a geographical point of view, the Randstad is known as the urban conurbation in the western part of the Netherlands, in which four major cities (Amsterdam, Rotterdam, Den Haag, and Utrecht) and a number of smaller towns (like Delft, Haarlem and Leiden) are located within close proximity of each other (see Fig. 16.2). The Randstad constitutes the heart of the Dutch economy, with 50 % of the gross national product being generated on approximately 25 % of the country's total land area. Having a population of six million inhabitants, the Randstad houses over one third of the Dutch population. However, in the debate on spatial planning and economic policy in the Netherlands, the 'Randstad' is more than just a collection of cities. The Randstad is seen as a single, contiguous urban region. This also follows from its name, since it includes the Dutch word for 'city'. Suggestions that the region functions as an integrated economic entity for basic industries, like manufacturing activities, distribution activities and business services, are numerous (Dieleman and

Musterd 1992; Sachar 1994; Kloosterman and Lambregts 2001; Lambregts 2008). Based on these suggestions, regional and national policymakers now more than ever aim at the concentrated location of (inter)national firms and businesses in this networked region in order to profit optimally from economic growth potentials.

Nevertheless, simply assigning a name, such as the Randstad, to a collection of towns and cities does not automatically meld them into a spatial and functional integrated city with economic complementarities. On the contrary – in the light of our analysis – instead of complementarities, competition and functional overlap between cities might exist. Earlier (and by now quite dated) research has hinted at this, but never quantified this accurately. Early centrality and hierarchy studies of industrial activities in the Randstad (Buursink 1971) suggested competition between cities, but did not use flow or network data to prove this. Location studies of firms (predominantly in business sectors) in the Randstad suggested that the employment structures of cities in the Randstad increasingly resemble each other over time, but do not take this further into the concepts of competition or complementarities (Atzema and De Smidt 1992; Hessels 1992).

Competition between cities is stressed in a recent discussion on the issuing of new industrial sites in the Randstad. Although the market for new real estate and industrial sites is stable and characterized by replacement more than expansion, all larger cities provide new space for new and moving firms (Van Oort et al. 2007). In this zero-sum game, places have to end up empty. This is generally regarded as a negative (spoiling) aspect of inter-urban competition (cf. Farell 1996). However, others suggest that urban competition is a good thing as it causes survivors and winners to be more vital and competitive (cf. Glaeser 2001). As for the Dutch Randstad, policymakers stress the complementarities view - partly out of wishful thinking and partly out of lack of knowledge about urban competition within the region due to a lack of reliable urban-economic interaction data.

4.2 Data

To analyze urban market overlap of cities in Randstad Holland, we use a dataset on inter-firm relationships including the purchasing and selling of products and services. The data stems from a 2005 survey among more than 20,000 firms in manufacturing, wholesale, and commercial services with more than one employee that are based in Randstad Holland (Van Oort et al. 2010). A random stratified sample, taking size and regions into account, was taken from the LISA database – an employment register of all Dutch establishments (see Van Oort 2007).⁸

⁸The survey focused on the ten most important selling and purchasing relations of firms. These can be with firms within or outside the own municipality. This restriction to ten relations leads to a potential bias in the network structure of large firms, but large firms are not over represented in cities in the Randstad (Van Oort et al. 2010). The 1676 establishments (8 %) that filled out the survey are representative in terms of the stratification by region and firm size. We are not able to differentiate results to various sectors.



Fig. 16.3 Inter-firm relations between 69 municipalities in the Dutch Randstad

Subsequently, the data were aggregated to the municipal level to analyze the overlap of urban networks. Figure 16.3 shows the network of inter-firm relationships for the entire Randstad. In this figure, the respondent population is not classified by sector. The lines represent the relationships between firms in different municipalities, where the thickness of the lines represent the number of business relations between two municipalities. On the basis of these business relationships, the market areas of the different municipalities can be demarcated. Nevertheless, it should be noted that about 50 % of the inter-firm relationships of firms that are located in the Randstad region are targeted at a location outside the Randstad. Hence, in the remaining of this empirical example we only analyze local competition between municipalities in the Dutch Randstad by looking at the overlap of local market areas.

4.3 Competition Coefficients of Cities in Randstad Holland

In measuring the intensity of competition between cities, we estimated the competition coefficients for manufacturing, wholesale and business services activities.

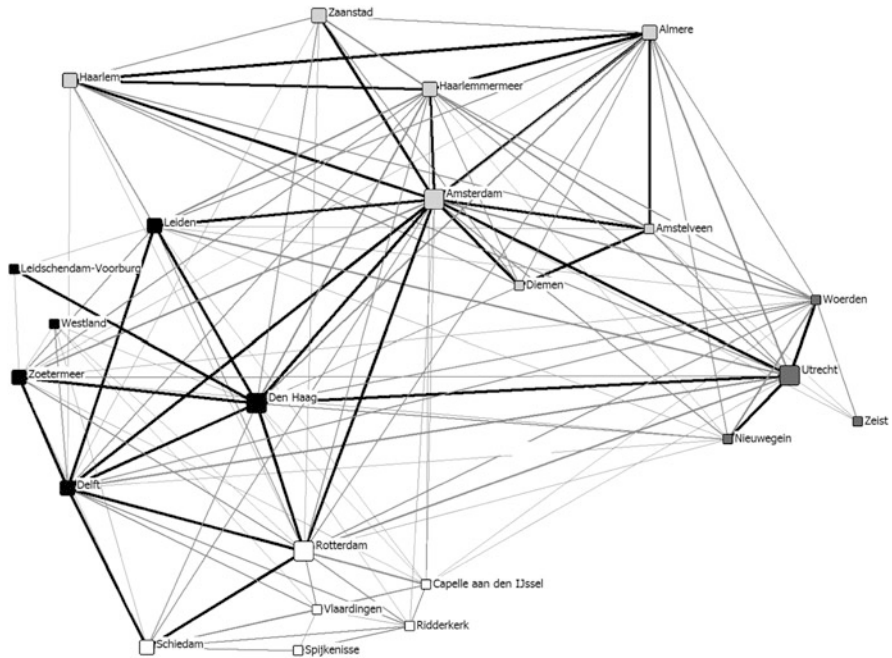


Fig. 16.4 Inter-city competition in the Randstad trade network

Subsequently, a composite measure of competition between any two cities in the region was created by weighting the competition coefficients for the different sectors by the overall importance of these sectors in the two cities (in terms of the total number of linkages); the resulting indicator represents the average degree of competition that firms in a certain city face from firms in the other city.

In our analysis, we focus on urban competition between the 23 largest and most prominent cities in the Dutch Randstad network,⁹ by examining to what extent their linkage pattern of trade relations to *all* other municipalities in this network are similar. Overall, the competition coefficients of these municipality pairs typically range between 25 % (between smaller cities) and 75 % (between larger cities). Figure 16.4 provides a graphical representation of this matrix in terms of a network

⁹ These are the cities with more than 40,000 inhabitants in the Dutch Randstad in 2006: Almere, Amstelveen, Amsterdam, Capelle aan den IJssel, Delft, Den Haag, Diemen, Haarlem, Haarlemmermeer (Schiphol), Leiden, Leidschendam-Voorburg, Nieuwegein, Ridderkerk, Rotterdam, Schiedam, Spijkernisse, Utrecht, Vlaardingen, Westland, Woerden, Zaanstad, Zeist en Zoetermeer.

diagram.¹⁰ The network diagram consists of nodes (vertices) and linkages (edges). The nodes in the network represent the different municipalities, where the size of the nodes represents the position of a city in the corporate inter-city network of advanced producer services based on the total number of linkages a city has. This position can range from primary municipalities (Amsterdam, Rotterdam, Den Haag, and Utrecht) to secondary (e.g., Delft, Haarlem, Leiden) and tertiary centres of municipalities that have relatively few linkages with other municipalities. As indicated earlier, lower order centres (villages, hamlets) are excluded from this analysis. The colour of the node represent the region in which the city is situated (Amsterdam (light grey), Den Haag (black), Rotterdam (white), or Utrecht (dark grey)).

The linkages between the cities in the network diagram represent the nature of urban relationships, where the thickness of the linkages represent the intensity of competition between the different cities. If there is no linkage drawn between two cities, the competition coefficient is lower than 50 %. Both cities are then (relatively) linked to different cities in the Randstad trade network. A thin inter-city linkage indicates that the competition coefficient ranges between 50 % and 65 % (intermediate market overlap). Finally, a thick (black) inter-city linkage indicates that the degree of geographical market overlap between two cities is over 65 % (strong overlap), meaning that both cities are to a large extent linked to similar cities. For this reason, the intensity of market overlap between these cities is fiercest.

Looking at the overall pattern of competitive relations, a number of observations can be made. First, competition between cities has a strong geographical dimension. The intensity of competition between cities that are geographically proximate is stronger than competition between cities that are geographically distant. The intensity of competition between cities situated in different urban regions is low. Moreover, if there is a strong intensity of competition between cities situated in different regions, it concerns mostly competition between higher-order centres. In fact, the degree of market overlap between Amsterdam, Den Haag, Rotterdam and Utrecht is among the highest in the Randstad network. This is not surprising since these higher-order centres serve a more diverse geographical market with a larger geographical scope than the lower order centres (Berry et al. 1988).

In contrast, smaller centres face relatively little economic competition from the other centres in the Randstad. This can be explained by the fact that the trade relations of these lower-order centres have a primarily local scope. Applying a hierarchical cluster analysis on the competition coefficients (Johnson 1967) identifies that four major (local) clusters of competing cities can be identified (see Fig. 16.5), namely (1) the Amsterdam region, (2) the Utrecht region, (3) The The-Hague-Rotterdam region and the area surrounding the city of Rotterdam. These results confirm the

¹⁰ The graphical representation was made using the UCINET software (Borgatti et al. 2002). This representation is not completely comparable to the geographical maps presented in Figs. 16.2 and 16.3, as the best UCINET network visualisation does not stick to geographical location.

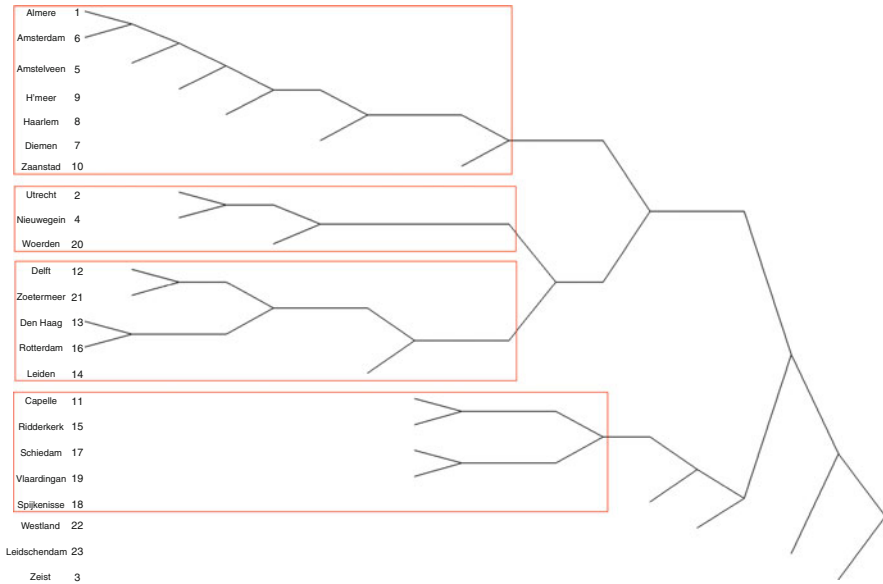


Fig. 16.5 Hierarchical cluster analysis of urban market overlap in the Dutch Randstad

rather local orientation of most cities within the Dutch Randstad. The market overlap between cities of different order that are geographically proximate, is very limited.

5 Discussion

In order to maintain their position within the urban system, cities have to work on their competitiveness, or their ability to successfully compete with other cities. As a result, local authorities put ever more effort into enabling and maintaining their cities as attractive locations of residence. In contrast with this, regional and national Dutch policymakers advocate the Randstad region as a single urban region in which economic complementarities are supposed to be numerous. The main policy conclusion of our research is that urban competition is more the rule than the much-anticipated urban complementarities, as urban functional influences spatially overlap. This is especially the case for the four largest cities (Amsterdam, Rotterdam, The Hague and Utrecht), which have the highest degree of market overlap in the Randstad network. The competitive climate between cities, leading to redundant supply of business estates, inefficient land-use patterns, rent losses and superfluous costs of acquisition, is usually seen as a negative thing (Farell 1996). But the competitive urban climate in the Randstad region coincides with particularly strong economic growth values in terms of employment and productivity growth (OECD 2007; Van Oort et al. 2010) – suggesting that competition might

as well function as catalyst for vital urban development (compare similar arguments by Glaeser 2001 and Porter 1995).¹¹

We introduced a measure for this, applied from comparative research in ecological statistics. Naturally, this is only a small amount of the competition that the cities in this network receive from all other cities: preferably the intensity of competition between cities should be measured across a full and more detailed spectrum of urban functions. Nonetheless, when urban niches are fully specified in terms of geography and functions, the resulting niche overlap measure can indicate the amount of market overlap a city has with other cities in the urban network. Further research should concentrate on relating aggregated competition coefficients in a regression framework to link market overlaps to urban performance. Accordingly, the focus then shifts from urban competition as an independent variable (“causes of urban competition”) to urban competition as a dependent variable (“consequence of urban competition”).

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¹¹ For an overview of arguments in favor and against competitiveness of cities, see the papers collected in Boston and Ross (2002).

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