Location of Leisure: The New Economic Geography of Leisure Services

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Abstract

Understanding more about the geographic location of leisure services is an important quest for research. For a long time now in developed economies, almost all employment growth is occurring within the service sector. In this sector, leisure services are fast growers. This means that the location of these services is important for economic growth and for employment opportunities of local market areas. Regional policy makers time and again highlight these sectors as future engines of growth. This paper investigates the role of local demand in determining the availability and the scale of various types of leisure services. The analysis is motivated by observed regularities that indicate large and persistent interregional differences in the location and growth of leisure services. Based on a New Economic Geography (NEG) framework, we investigate the role of local and regional demand for the size of leisure services in geographically separate markets in Sweden. We use data for 290 Swedish municipalities for the period 2002-2013 and run year-municipality fixed-effects regressions. Our main findings suggest a strong dependency on local demand, and less on the demand originating from other regions.

Keywords: New Economic Geography, Market Potential, Leisure Services, Tourism, Hospitality.

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1. Introduction

Leisure services are important assets for the prosperity of cities and regions. The last decades have witnessed a debate on the importance of leisure and tourism services by both scholars and local and national policy-makers (Florida, 2002; Clark, 2004; Markusen and Schrock, 2006; Grodach, 2011; Ringer, 2013; Sharpley and Telfer, 2014). The influences of leisure and tourism services on the performance of a local economy are manifold. First, leisure and hospitality services often represent a significant share of the total economic activity in a region. This characteristic of leisure services makes them potentially important for employment and growth. Second, these services are recognized as essential for the attractiveness of a region. Leisure and tourism services can be thought of as regional amenities because they make available a range of possibilities for consumption, experiences, and recreational activities.

This paper is motivated by the empirical regularity that large and persistent interregional differences exist in the location and growth of leisure and tourism services. Explaining these variations in the location patterns of different industries are at the heart of the New Economic Geography (NEG) literature pioneered by Krugman (1990, 1991). The theoretical backbone of our study is based on the NEG framework. The purpose is to understand the regional variation in the size of available leisure services across local markets. Our focus is on the role of demand for the availability and scale of leisure services in local markets. Specifically, we ask which leisure services show signs of a home market effect in their location structure.

In the NEG framework, a home market effect is defined as the disproportionate clustering of a service in a local market in response to demand extending beyond the borders of the market where the service provider is located. In order to address the role of local demand for the scale of different types of leisure services, we use registry data for 290 Swedish municipalities for 2002-2013 and run year-municipality fixed-effects estimations. The empirical strategy allows us to mitigate the effect of the time-invariant characteristics of destinations (topography, climate, and historical amenities). We group the leisure services in eight categories and investigate them separately. Local employment in these services is grouped primarily with respect to the nature of the service providers, as in what kind of service they supply, as well as how they are provisioned. The eight groups of leisure services are accommodation, culinary, special events, arts, sports, well-being, public, and movie theatre. The novelty of the paper is that it offers a market potential measure for estimating the effect of local demand. The market potential measures we use account for spatial dependencies between different local markets, as well as the continuous nature of demand.

Our main findings suggest a strong dependency on local demand in the immediate market, compared to the demand originating from the other local markets in the same region and those that

are outside of the region. The only two categories, however, where the dependence on the local demand indicates a home-market effect are movie theatres and arts categories.

The paper continues with the related concepts and the motivation for the empirical investigation, followed by the theoretical framework and the empirical strategy. We conclude with a discussion about the results we obtain from our empirical investigation.

2. Background and Motivation

The demand for leisure services is probably one of the most addressed issues in the studies of leisure (e.g. Blaine and Mohammad 1991; Dardis et al. 1994; Cai et al. 1995; Crouch, 1995; Nelson, 2001; Vogel 2014; Andersson and Andersson 2006; Pawlowski and Breuer 2012). The demand and supply of recreational products, such as entertainment, arts, and other cultural goods, depend on the development of the total real disposable income of households, and on other macroeconomic conditions. Historical data shows that the share of total disposable income allocated to the arts, entertainment, and leisure consumption have experienced an increase in advanced economies over time (Andersson and Andersson, 2006).

Despite its long tradition, the literature on leisure started to pay attention to the significance of *space* much later. During the past two decades, urban and regional economics literature, for example, has increasingly addressed the questions related to the location of consumption, and what consumer services mean for urban and rural development. Glaeser et al. (2001) in "Consumer City" show that the cities with high levels of consumer amenities (urban amenities) exhibit faster growth than their amenity-poor counterparts. In amenity-rich places, housing prices are found to increase faster than the wage levels. They also observe the emergence of reverse commuting patterns, where people that work in the periphery increasingly prefer to live in the amenity-rich urban cores (Glaeser et al. 2001). Shapiro (2006) highlights that direct measures of quality of life are associated with these sorts of 'consumer city' amenities, such as bars and restaurants. The relevance of leisure services is not limited to urban space. In a study using data from Swedish municipalities, Mellander et al. (2011) find that creative and cultural sectors are positively associated with population growth in peripheral markets likewise.

In consumer behavior research, decision models are used extensively to determine the underlying mechanisms behind the choices individuals make between different stores, products, services, and destinations (Timmermans 1991). For example, in terms of shopping behavior, the decision models often confirm the repetitive nature of consumers. Due to lack of information on all possible service providers, consumers would be habitual, meaning their behavior would change very slowly (Golledge and Stimson 1997). Regarding consumer behavior in space, Dicken and Lloyd (1990) argue that the distance traveled to acquire goods is directly related to the "order" of the goods.

According to central place systems and urban hierarchy, stores selling low-order goods should be widely distributed across space and available at a larger number of centers, whereas stores selling high-order goods should be more clustered and present in fewer centers. Some of the branches of the leisure industry, for example, artistic and cultural service providers (e.g. theaters, galleries, etc.), movie theaters, and big sports venues have very high fixed costs, and relatively low marginal costs of production (Vogel 2014; Andersson and Andersson 2006). Empirical evidence, supports a similar idea that tourism and leisure services are unevenly distributed across space (Oppermann 1994).

As a significant part of leisure, research on tourism have also experienced a rapid expansion over the past decades. Demand for tourism services, once again, has been addressed extensively[1]. Crouch (2011) considers the biggest difference in competitiveness between a commodity in a market and a tourist destination, lies in the fact that the product of the tourism sector needs to be delivered by various leisure and hospitality service firms together (such as hotels, restaurants, arts, entertainment and recreation-related services), rather than by a single firm. A similar line of arguments can also be found in the retail literature, which states that people have a taste for variety, triggered by multi-purpose shopping behavior. In order to reduce the cost (e.g. time, search, and travel costs) consumers tend to patronize retail markets that offer them a greater variety of establishments that can satisfy their desire to buy a bundle of goods instead of one item at a time (Ingene and Ghosh 1990; Ghosh and McLafferty 1984; Arentze and Oppewal 2005; Öner and Larsson 2014). Also, one of the cornerstones of The New Economic Geography (NEG) is the "love-of-variety" effect (Krugman 1991; Fujita et al 1999a; Fujita and Thisse 2002). Love-of-variety suggests that the demand side expresses a preference for variety in consumption, and the supply side gains efficiency from increased diversity in intermediate goods.

3. Theoretical Framework

New economic geography (NEG) offers a microeconomic theoretical underpinning for the concept of market potential. The idea is used to work out the market demand over distances. This line of theorizing is especially suitable for modeling demand directed to service providers. This is because the sale of services is especially distance sensitive. Naturally this is true for leisure services where customers need to travel to take part in the consumption of them. In this section, we outline a market potential model that derives from New Economic Geography. The derivations build on the work by Fujita, Krugman and Venables (1999), Brakman, Garretsen and van Marrewijk (2009), and Combes, Mayer and Thisse (2008). A related derivation is presented in Klaesson, et. al. (2015). Toward the end

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[1] Concerning demand for tourism services, see: Crouch, 1994; Li et al., 2005; Lim, 1997a, 1997b; Witt and Witt, 1995. For more recent research, see: Pickering 2011; Fretchling 2012; Schubert et al. 2011; Song et al. 2010)

of this section we introduce empirical measures of the theoretically derived measure of market potential.

Assume that individuals obtain utility from two goods. The first is a homogenous traditional good (F) produced under constant returns and perfect competition. The second is a leisure service good (S) consisting of a large number of differentiated varieties produced under increasing returns and imperfect competition. The individuals', located in region j, preferences are represented by a Cobb-Douglas utility function and is given by:

$$U_j = S_j^{\delta} F_j^{1-\delta}, 0 < \delta < 1$$

δ denotes the share of the budget spent on leisure services. S_j represents an aggregate of n_i varieties of leisure services available on the market. The standard Dixit-Stiglitz approach uses the constant elasticity of substitution (CES) function to represent this aggregate measure of leisure services:

$$S_j = \sum_{i=1}^{R} \left(n_i c_{ij}^{(\varepsilon-1)/\varepsilon} \right)^{\varepsilon/(\varepsilon-1)}, \varepsilon > 1$$

c_{ij} denotes consumption in region j for a leisure service variety produced in region i. ε is the elasticity of substitution between varieties. Let Y_j denote total income (and expenditure) of region j and p_{ij} denote the price of a variety produced in region i and sold in region j. The standard two-step utility maximization yields the following demand in region j for products produced in region i:

$$c_{ij} = \delta Y_j I_j^{\varepsilon-1} p_{ij}^{-\varepsilon}$$

I_j is the so-called price index in region j, defined as:

$$I_j = \left(\sum_{i=1}^{R} n_i p_{ij}^{1-\varepsilon} \right)^{1/(1-\varepsilon)}$$

Next we introduce the analytically straightforward transport cost technology known as iceberg transport costs. $T_{ij} > 1$, is the cost of transport between region i and j. This means that the demand in region j for products produced in region i must be rewritten as:

$$c_{ij} = \delta Y_j I_j^{\varepsilon-1} \left(p_i T_{ij} \right)^{-\varepsilon}$$

In the context of leisure services, we assume that, for consuming services in the other region, individuals must travel there in order to do so. Travel is costly, and in the expression above this is modelled as if the consumers of leisure services need to pay a premium on the price. This means that transport cost makes leisure services in the other region more expensive. The total sales of a firm in

region i, c_i, is obtained by summing sales over all regions taking into account that the quantity shipped times T_{ij} corresponds to the quantity consumed:

$$c_i = \delta \sum_{j=1}^{R} T_{ij} Y_j I_j^{\varepsilon-1} \left(p_i T_{ij}\right)^{-\varepsilon}$$

The traditional market potential function states that the market potential of region i is large when firms in this region face a large demand from surrounding regions j. Thus, the size of a regions' market potential depends positively on demand coming from other regions and negatively on the distance to these regions. Now we define the market potential MP_i as:

$$MP_i = \sum_{j=1}^{R} T_{ij}^{1-\varepsilon} Y_j I_j^{\varepsilon-1}$$

In the above expression, the market potential depends negatively on transport cost ($T_{ij} \approx$ distance). It depends positively on the demands coming from other regions (Y_j). The third effect is not present in the traditional measure of market potential. This is the effect of competition, as measured by the price index I_j. Now we can write the total sales of a firm in region i as:

$$c_i = \delta p_i^{-\varepsilon} MP_i$$

Sales depend positively on the share of income spent on leisure services, and negatively on the price of them. More importantly in the present context the derived equation tells us that sales of a leisure service provider are a function of market potential. So firms that are located in places with high market potential should expect to sell a larger amount of leisure services. Demand is higher in regions with high market potential because there are relatively many customers in close by regions willing to travel there.

Related to the market potential above, it is possible within the framework presented to derive the so-called home-market effect. To do this requires the introduction of the production side of the economy, so we abstain from this here. This derived effect suggests that if one region is larger in terms of population or demand, this region attracts a more than proportional share of firms. So increases in expenditure lead to a more than proportionate increase in production. In this sense it can be labelled a magnifying effect, increasing regional differences. It derives from the interaction between economies of scale at the level of the firm, the location of demand, and transport costs.

In order to investigate the relationship between the size of leisure and hospitality services, in terms of employment and market size in an empirical setting, we need an appropriate measure for the latter that builds on the theoretical foundation presented above. We choose to use an *accessibility* approach that allows us to break down the potential demand for leisure services into three components based on the distance decay differences at varying distances. In the construction of this measure we

follow Johansson et al. (2002, 2003). The measure used is a variation of the one introduced by Harris (1954) and an overview of this kind of analyses can be found in Klaesson et.al. (2015).

The accessibility to the sum of all wages earned in a municipality represents the market potential in that municipality. The sum of all wages earned in a place is a reasonable measure of the amount of economic activity that is taking place there. The amount of economic activity is also assumed to be proportional to demand. By calculating the accessibility to wage sums, we account for wage sums in neighboring places and recognize the fact that spillover effects almost certainly exist across regional borders. Let W_i denote the sum of all wages in region i and t_{im} denote the distance measured in travel time by car between region i and region m. Also, let λ be a distance-decay parameter. Then the accessibility to wage sums in region i can be calculated as:

$$A_i = \sum_m W_m e^{-\lambda t_{im}}$$

A_i is the accessibility to wages measure for region i, summing over all regions in the country. The size of every other region's contribution to region i's accessibility will depend positively on the size of the wage sum, but also negatively on its distance to region r. The further away (larger t_{im}), the smaller the contribution, the speed of the attenuation depending on λ. As in Johansson et al (2002), we recognize that the influence of accessibility may differ between different categories of regions. Typically a functional economic region (FER) is a group of regions (municipalities) between which there are frequent cross-border interactions. Taking this spatial structure into account, this leads us to the following division of A_i into three parts:

(1) $A_{ii} = W_i e^{-\lambda t_{ii}}$; (2) $A_R = \sum_{s \in R} W_s e^{-\lambda t_{is}}$, (3) $A_{exR} = \sum_{s \notin R} W_s e^{-\lambda t_{is}}$

In equations (1), (2) and (3) A_{ii} is the part of the market potential in region i coming from the region itself, A_R is the part coming from the FER to which i belong and A_{exR} coming from the rest of the country. When calculating the three sub-sums, we use the result in Johansson et al (2002) and acknowledge that the λ:s are not the same but particular for each part of A_i. For the municipal part it is 0.02, for the regional 0.1, and for the extra-regional 0.05. In the empirical analysis this partition allows us to distinguish between leisure consumption (estimated to depend on market potentials) by inhabitants from the municipality, non-local people living in the same region and people from other regions.

Figure 1 shows three maps, representing the three measures defined in equations (1) to (3). The first map shows the variations of the municipal market potential; the second one shows the regional and the last one the extra-regional market potential in Swedish municipalities. The municipal market potential is relatively scattered all over Sweden. The regional market potential is more focused towards the south, especially around the three metropolitan regions, Stockholm, Malmö and Gothenburg. The

last map, representing the extra-regional market potential is showing a pattern for the municipalities that are located in the south, where the interaction between many large municipalities is clearly visible.
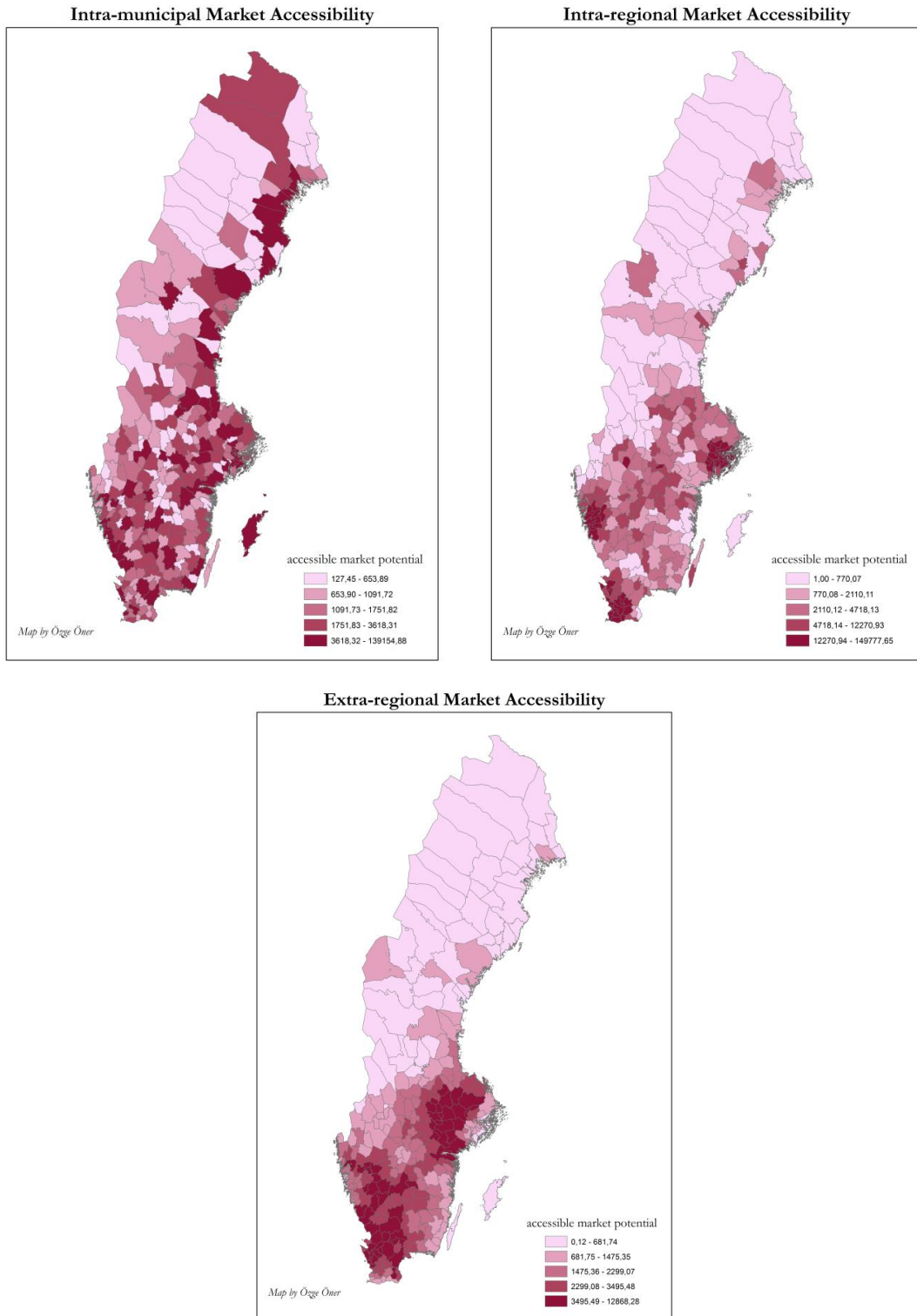
Figure 1. Intra-municipal, Intra-regional and Extra-regional market accessibilities in Sweden

The two goals stated in the paper are to determine the importance of local demand for different types of leisure services, and to further investigate whether these dependence indicates a home-market effect as discussed above. The intuition behind the *home-market effect* is that larger markets would have the tendency to be the exporter of a service or good, *ceteris paribus*, on the basis that larger markets would also attract the suppliers more than their smaller counterparts. In other words, markets with a sufficient scale ought to host economic activity more than proportionate to size of demand.

As discussed briefly above, establishments and operations of certain types of leisure services (galleries, movie theatres, big sports venues, amusement parks, etc.) entail high fixed-costs and a niche demand that can only be found in urbanized environments. That is why we should see this kind of services to be located in larger markets that can attract demand from outside of their local market, thus, be represented in a disproportionate way, signaling a home-market effect.

When estimated in terms of elasticities, we should then see a coefficient larger than one for local demand, which is measured in terms of intra-municipal market accessibility. This measure, once again, indicates the relevance of demand in the immediate market. If the elasticity is above one, it means that when we double the local demand in a market, we would observe the scale of that leisure service to increase more than double. Whether we should expect this result for all services or not is further explained in the following section.

4. Leisure service categories

Central to the purpose of the paper, we present eight leisure service categories. The goal is, once again, (i) to investigate the variation across these services, in terms of their dependence on the local demand, (ii) and determine whether this dependence resembles a home-market effect. The sectors, which are presented in table 1, are based on the standard industrial classification (SIC) at the finest 5-digit level. A total of 32 different 5-digit level service industries related to leisure and tourism are then grouped into eight categories. The categorization is fundamentally based on (i) the higher aggregation of industrial categorization, (ii) as well as the similarities in the nature of the services provided at the 5-digit level. A categorization very similar to ours is also offered by Tribe (2015), where recreational activities are recorded under three main headings: home-based recreation, recreation away from home, and travel and tourism. In Tribe's categorization, recreation away from home lists activities such as sports participation, watching entertainment, visiting attractions, eating and drinking, and betting and gaming. Travel and tourism, on the other hand, lists travelling to a destination, accommodation at destination, and recreation at destination. Once can see the strong link between these activities and respective leisure services we present in our empirical framework.

The first category, *Accommodation*, consists of service establishments such as hotels, motels, hostels, and camping sites. The second category, *Culinary*, consists of restaurants, bars, canteens, and catering services. The *Movie* category consists of establishments serving for motion picture projection, in other words movie theatres. The *Special Events* category lists exhibition, trade fair, congress, and day conference, as well as fair and amusement activities. The events that take place as part of these services often require the consumers to travel, and are thus directly related to tourism. The *Arts* category consists of service establishments that are engaged in artistic and literary creation and interpretation activities and other types of arts facilities. This category is mostly dominated by art galleries and physical establishments that are used to display fine arts and performing arts. We grouped the services that are almost exclusively publicly funded in Sweden, such as libraries, museums, historical sites and buildings, and botanical and zoological gardens under the *Public* category. The reason why this category is relevant to our research purpose is that the location decision does not depend on the traditional valuation of market conditions, when it is the local and national government that is determining the need of investment. At the descriptive level, we see a rather different spatial distribution of the services, which implies that their dependence on the local demand should be considerably different than the rest of the categories. The *Sports* category consists of activities that are directly or indirectly related to sports activities, including sports clubs, and even gambling and betting, which are exclusively related to horse racing since physical casinos and alike establishments are outlawed in Sweden. *Well-being* is the final category, and it consists of services such as hairdressing, local gyms, beauty treatment and spa establishments.

Table 1. Leisure service categories

ACCOMMODATION
• Hotels with restaurant, except conference centers
• Lodging activities of conference centers
• Hotels and motels without restaurant
• Youth hostels and mountain refuges
• Camping sites, including caravan sites
• Other provision of lodgings n.e.c.
CULINARY
• Restaurants
• Bars
• Canteens
• Other Catering
MOVIE
• Motion picture projection
SPECIAL EVENTS
• Exhibition, trade fair, congress and day conference activities
• Fair and amusement park activities
ARTS
• Artistic and literary creation and interpretation
• Operation of arts facilities
PUBLIC

• Public Library Activities
• Museum activities and preservation of historical sites and buildings
• Botanical and zoological gardens and nature reserves activities
SPORTS
• Operation of ski facilities
• Operation of golf courses
• Operation of motor racing tracks
• Operation of horse race tracks
• Operation of arenas, stadiums and other sports facilities
• Sportsmen's and sports clubs activities
• Horse racing activities
• Sporting activities
• Organization of sport events
• Gambling and Betting
• Operation of riding schools and stable activities
WELL-BEING
• Hairdressing
• Beauty treatment
• Physical well-being activities

We present two maps in figure 2, displaying the market potential (the total of the three market potential components presented above) and the scale of two representative categories for descriptive purposes: *Culinary* and *Special Event*. The employment in these leisure services is represented with proportionate-size symbols to show the variation across different local markets. The same local markets are shaded with respect to their total market potential.
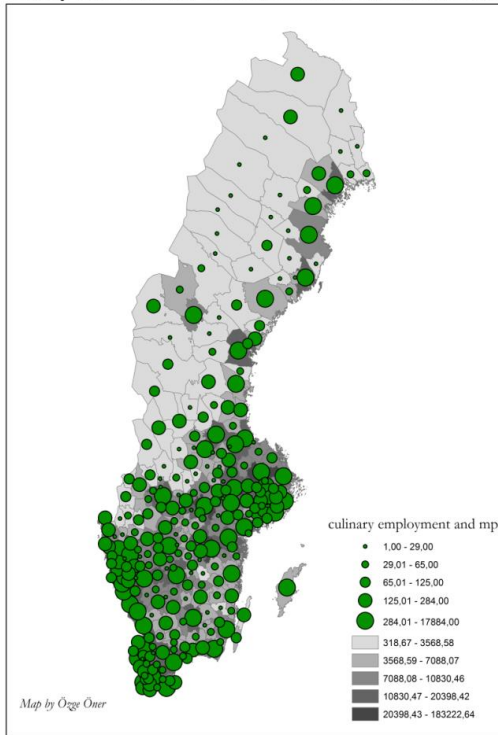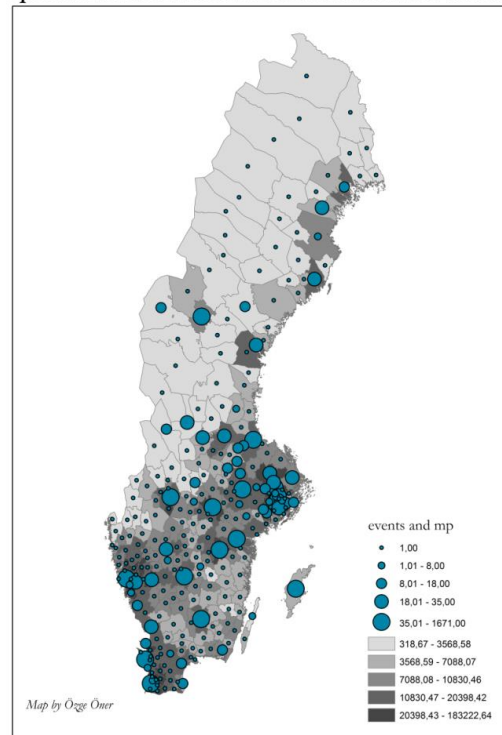
Figure 2. The location of Culinary and Special Event categories related to the market potential

The maps signal a relationship between the market potential and the size of leisure and hospitality sectors for the two leisure services with variations. There is a clear clustering of culinary services in and around the three metropolitan markets, namely Stockholm and Malmö, as well as in all major cities characterized by large market accessibility.

In the analysis, the degree of leisure service size is measured as the employment in the respective category in a municipality. Looking at the descriptive statistics in table 2, the size and change in employment in the categories differ. The share of employment in the investigated services as a whole with respect to overall employment was approximately 4.6% in 2002 and increased up to 6.6% in 2013. When we look at the categories separately, we see a tremendous increase in movie theatres with a 128 percent increase, followed by the arts and special events categories. An interesting gap reveals itself when we compare the two fundamental categories of the hospitality sector: *accommodation* and *culinary*. While culinary services grew 66 percent over the period in terms of employment, accommodation grew about 30 percent. This signals that culinary services are increasingly dominated by non-touristic customers. The public category exhibits virtually no growth between 2002 and 2013, with a 0.4 percent growth in employment.

Table 2. Employment in leisure and tourism sectors

Categories	2002	2013	Change	Percentage Change
Accommodation	30302	39571	9269	30.6
Culinary	70615	117455	46840	66.3
Motion Picture	3486	7935	4449	127.6
Special Events	2802	4877	2075	74.1
Arts	14411	26944	12533	87.0
Public	14893	14952	59	0.4
Sports	31200	46758	15558	49.9
Well-being	21000	45764	24764	117.9
Sum	188709	304256	115547	61.2
Total Employment in Sweden	4147174	4619070	471896	11.4
Share of leisure and tourism (%)	4.6	6.6		

What to expect?

The variation in the nature of leisure services is central to our investigation. The theoretical background suggests that, as a local market grows, we should see an even greater growth in its leisure services because the market would attract demand from elsewhere. Do we expect this to hold for all leisure services? The answer to this question is undoubtedly no. Some leisure services require large establishments, which consequently imply that large fixed-costs are covered by a greater demand. Consumers are more likely to patronize other markets for these kinds of services, which are also consumed less frequently. These services in our categorization can be found under the *Special Events, Movie,* and *Arts* categories. Whereas, other services are easier to establish and do not require a niche demand, which makes them more spread out geographically. In the nature of things, these are also the kinds of services that are patronized by consumers more frequently. More frequent purchases of a service reduce consumers' willingness to travel further distances to patronize suppliers elsewhere. These services are listed under *Culinary*, *Sports* and *Well-being* categories. Accommodation, on the other hand, can be abundant in large places as well as in small places that are specialized in tourism. A large market should indicate a large accommodation service landscape, but not necessarily a home-market effect.

5. Data, variables and the empirical design

5.1. Data

The data used in the empirical study is obtained from Statistics Sweden. It is aggregated from employer-employee registry data, covering the entire economy. For our empirical analysis, the years 2002-2013 are used. All municipalities are tracked for this period of time, which allows us to exploit the panel structure. The start of the period is dictated by the changes in the industrial classification in 2002. 2013 is the latest year we have access to the data. The number of years is sufficient to observe

changes in the industry by the way of fixed-effects estimations, without having inconsistencies associated with structural changes since we rely on fine industrial categorization.

5.2. Variables

Dependent Variables

Sector size is measured as total employment in municipalities for the eight sectors. These eight measures are introduced as separate dependent variables in the regression analyses intended to investigate the determinants of the location of these services in Sweden. The variables are denoted as: *Accommodation, Culinary, Movie, Special Events, Arts, Public, Sports, Well-being.*

Independent Variables

Market potential: This is the principal independent variable. The three components of the market potential, as explained in the theory section, are introduced as explanatory variables in the regression analyses (The notation for the empirical model is given by *Aii, AR* and AexR for municipal, regional and extra-regional market potential).

Intensity of In-Commuting: This variable measures the impact of commuting flows between municipalities. It is measured as commuting flows into a municipality divided by the sum of in and out commuting flows to and from the municipality. It also, to a certain extent, captures the regions place in the hierarchy of regions. Central municipalities are expected to have higher in-commuting intensity than the non-central ones, due to that people commute to central markets for work while residing elsewhere. (This variable is denoted by *ICi* for the in-commuting intensity into region *i* in the empirical model below).

Entry Rate: This variable is used to control for the impact from the new businesses. It gives some indication of growth prospects and possible future demand. The number of new establishments is divided by the population in working age. Rather than dividing the new firms by the total number of firms in a market, using the population with entrepreneurial capacity as a denominator is argued to be a more valid approach to detect the entrepreneurial milieu in a region (Audretsch 1994). The variable is represented by *ERi* for the entry rate in region *i*.

Share Employed: The employment share is measuring the share of individuals in working age that are actually employed. This measures the functioning of the labor market. (It is denoted by *Empi* for the employment share in region *i* in the empirical model.)

Employment share in Manufacturing: This variable is introduced as a control variable for detecting a significant relationship between the scale of leisure and hospitality services in a given municipality and the employment in the manufacturing industries. As discussed previously, employment in

manufacturing is expected to be negatively related to employment in leisure and hospitality services. (This variable is denoted by *Mani* for the share of the employed that work in manufacturing.)

House Prices: House prices are treated as one of the indicators of a region's attractiveness. They also imply a land cost for the leisure services in question. High amenity regions are known to attract residents, which are reflected in the house prices (Roback, 1982). (The house prices in a region *i* are denoted by *HPi*.)

A descriptive table for all the variables, as well as their log transformations is available in the appendix together with bivariate correlations.

5.3. Empirical strategy

The empirical model presented in the equation below is based on the theoretical logic presented above. The empirical setup is a rather straight representation of the NEG model outlined above, where sales (demand) are a function of market potential. Market potential is then represented empirically as explained in detail above. One challenge with setting up the right estimation strategy is the unobservable and omitted determinants of leisure service location. Many characteristics of the local areas are of time-invariant nature and exogenously determined. These characteristics include, but are not limited to, climate, historical assets, coastal border, and distance to bordering countries, topography, and foremost historical path dependency. One way to eliminate the possible effects that may arise from time-invariant (intrinsic) characteristics is by employing a fixed-effects framework.

A fixed effects model represents the observables on the right hand side of an empirical model, where these observables are understood to be non-random. A fixed-effects estimator (within estimator) is made up of the coefficients obtained in the regression. Since we have not only municipality fixed effects (represented by u_i), but also time fixed effects (represented by μ_t), our estimation strategy can be referred to as a two-way fixed effects estimation.

$$\ln Emp_{i,r} = \beta_0 + \beta_1 \ln A_{ii} + \beta_2 \ln A_R + \beta_3 \ln A_{exR} + \beta_4 IC_i + \beta_5 \ln ER_i + \beta_6 \ln Emp_i + \beta_7 \ln Man_i + \beta_8 \ln HP_i + u_i + \mu_t + \varepsilon_{i,t}$$

A logarithmic transformation is used for all scale variables. The explanation and interpretation of each variable is given in the above section.

6. Results: Location of Leisure

The fixed-effects estimates are displayed in Table 3. Local market potential, measured as access to wage sums in the municipality, has a significantly positive and rather large effect on the scale of all leisure services taken together. For the separate estimations the only two categories for which this effect indicates a home-market effect are *Movie* and *Arts*. For both an elasticity close to 1.5 is obtained. This means that, keeping everything else unchanged, increasing the local market potential by one percent is associated with 1.5 percent more employment in these two categories. This is the magnifying effect referred to in the theory section. The theoretical framework tells us that this means that customers of these two services do not only originate locally but are also attracted from elsewhere. This suggest a case of "recreation away from home" as described by Tribe (2015). For the *well-being* sector this elasticity is close to one, meaning a one-to-one relationship between local market potential and sector employment. Two of the major sectors, *Accommodation* and *Culinary*, have very similar coefficients indicating a high dependence on local demand too. However, a home market effect is not present since the elasticity is smaller than one. For the *Culinary* category, it is not surprising that the scale of the restaurant sector varies first and foremost by the local size, in most places restaurants guests are relatively local. Concerning *Accommodation*, we hypothesized that it can be abundant in large urban milieu as well as in small places that are specialized in tourism, therefore it is not straightforward to expect a home market effect. We still observe a relatively large coefficient which is consistent with this observation since the fixed effects estimator controls for those mostly time invariant factors that make some places more attractive to tourists in the first place. *Special Events* and *Sports* are less dependent on local demand. We expected to find a home-market effect for *Special Events* since it consists of services consumed less frequently than many others, and requires large establishments. A reason for this result may be that trade fairs and similar activities often are large-scale and planned events that do not necessarily correlate with changes in local size. The *Public* category has a relatively weaker dependence on changes in local demand. This result, once again, is in line with expectations. The location of public investment for the type of services recorded in this category is not market driven in the same way as the other categories.

The coefficients from the intra-regional market accessibility allows us to observe whether there is a competition effect arising from proximity to other local markets in the same region. As discussed previously, the theory and previous research suggests that for certain types of services, local markets within the same regional market area will be in direct competition against each other. Such competition effects we observe for some of the categories, i.e. the *accommodation* and *special event* categories. The demand that originates from other markets in the same region indicates a negative effect. This indicates that for these particular services, customers are drawn to a proximate growing market. This mechanism is to some extent the opposite of the home market effect. It means that a relatively proximate region is competing and draws customers away. The *culinary* category does not seem to be subject to any

significant effect. This indicates that consumers have the tendency to patronize restaurants in larger regions and are not influenced by neighboring competing regions. This result, once again, is in line with that culinary establishments depend on proximate demand. On the other hand, when we look at the results of the *Movie, Sports* and *Well-being* categories, we observe a positive effect from the intra-regional market size. The effect is fairly strong for the *well-being* category. This means that there is an amplifying effect from the region level to the local. The only two categories where external demand has a positive effect on the scale of the services in their local market are *arts* and *well-being*. The interpretation is similar to the ones above albeit in relation to the rest of the country.

We will very briefly also comment on the independent variables mainly entered as controls. That is, they are entered to control for other factors believed to be important when considering leisure service employment (reducing possible omitted variable bias) though are not in focus of the analysis. *Entry rate*, representing the entrepreneurial milieu in a municipality, has a positive effect only on the size of the *accommodation* category in a local market, but the effect seems to be small. The result is intuitive given that this category is somewhat dominated by small and independent establishments. The effect of entry rate is negative, but small, on the scale of *movie* and *sports* categories. For all other categories, the effect is not different from zero. High house prices are associated with a bigger scale of *culinary, arts* and *well-being* categories, and a smaller scale for the sports category. High house prices indicate that a place is in demand and positively sorts niche demand. Rising house prices are also found in amenity rich areas. The intensity of commuting has a negative association –when not insignificant- with the leisure categories, indicating that places that are central in a local labor market are not necessarily attractors for leisure services. The rate of employment has a negative association with the size of many leisure services. We also mostly find negative coefficients for the share of employment in manufacturing, something very much expected.

Table 3. Fixed-effects estimations, 2002-2013

	ALL	Accommodation	Culinary	Movie	Special Events	Arts	Public	Sports	Well−being
Intra−municipal	**0.759***	**0.875***	**0.827***	**1.498***	**0.674***	**1.512***	**0.481***	**0.636***	**1.063***
	[9.513]	[5.136]	[6.462]	[11.79]	[5.223]	[8.296]	[3.057]	[4.206]	[10.55]
Intra−regional	**0.322***	**0.285***	0.140	**0.544***	**−0.632***	0.0676	**0.798***	**0.581***	**0.695***
	[4.072]	[−1.685]	[1.103]	[4.325]	[−4.946]	[0.375]	[5.129]	[3.892]	[6.954]
Extra−regional	**−0.329**	**−0.370**	**−0.387**	0.245	**−0.662**	**0.807**	**−0.533***	0.0901	**0.500**
	[−2.008]	[−1.056]	[−1.477]	[0.941]	[−2.499]	[2.157]	[−1.652]	[0.291]	[2.420]
Entry rate	−0.00911	0.0788*	−0.00309	−0.0565*	−0.00851	−0.0509	−0.0134	−0.0947**	−0.00129
	[−0.440]	[1.782]	[−0.0930]	[−1.715]	[−0.254]	[−1.073]	[−0.328]	[−2.419]	[−0.0494]
House prices	0.0406	0.0832	0.157***	−0.0542	0.0676	0.437***	−0.0117	−0.0955*	0.0964**
	[1.347]	[1.292]	[3.242]	[−1.128]	[1.385]	[6.348]	[−0.197]	[−1.674]	[2.530]
Commuting	0.135	0.102	0.108	−3.134***	−0.925***	−2.353***	−0.685	−0.811*	−1.868***
	[0.612]	[0.217]	[0.306]	[−8.942]	[−2.596]	[−4.667]	[−1.578]	[−1.949]	[−6.706]
Employment	−0.631***	−1.072**	0.476	−1.247***	−0.576	−0.344	−1.608***	0.0813	−1.405***
	[−2.687]	[−2.139]	[1.264]	[−3.338]	[−1.517]	[−0.641]	[−3.474]	[0.183]	[−4.711]
Manufacturing	−0.640***	−0.382	−0.960***	−0.556***	−0.227	0.709**	−0.658**	−0.267	−0.115
	[−4.864]	[−1.361]	[−4.553]	[−2.659]	[−1.069]	[2.359]	[−2.532]	[−1.074]	[−0.693]
Constant	−0.753	1.952	−1.954	−15.47***	8.011***	−20.19***	−1.820	−6.495**	−15.19***
	[−0.552]	[0.670]	[−0.894]	[−7.128]	[3.626]	[−6.467]	[−0.677]	[−2.515]	[−8.811]
Observations	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480
R−squared	0.604	0.680	0.538	0.846	0.881	0.844	0.755	0.651	0.752
No of municipalities	290	290	290	290	290	290	290	290	290

t−statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Municipality and year fixed effects, all scale variables are logged transformed

7. Concluding remarks

Grounded in a New Economic Geography (NEG) framework, we investigate the role of local and regional demand for the size of the leisure service sectors in geographically separate markets. Despite the fact that previous research on leisure services recognizes the importance of local market conditions for the availability and the scale of these services, the location and reach of demand for them is not adequately analyzed. NEG provides a strong theoretical base to contribute to the literature by introducing the possibility of a "home market effect" of leisure services. By observing the existence of a home market effect, we are able to elaborate on the relevance of size of local demand for determining the volume of these services in local markets. Central to our investigation is a categorization of leisure services in a systematic manner. We group the services in eight categories: *Accommodation, Culinary, Movie, Special Events, Arts, Public, Sports, Well-being.* Since this categorization derives from an industrial classification that is compatible across many countries, it can also provide a basis for future comparative studies. It is argued that in order to appreciate the importance of demand for the presence of leisure services in a local market, it is crucial to take the spatial continuum of demand into account. Enabling us to do so is an accessibility approach that doesn't only measure the importance of demand originating from close proximity, but also from the region and outside of the region.

The results show that the scale of all leisure services depend on local demand albeit to varying degrees. We observe that services that are characterized by large fixed costs and consumed more infrequently reveal a home-market effect, indicating an over-proportionate representation of them in response to local demand. These are movie theatres and arts services. As regards regional demand, which originates from the region where the local market is situated, we get mixed results. There is a competition effect for *accommodation* and *special events*, both related to the tourism sector. Beyond this, the regional market seems to have either a positive association or no relevance for the other categories.

The variability in dependence on the different types of market potentials between the service categories is an important finding not only for further research, but also for owners and managers of firms in this sector and regional policy makers. The almost universal, but not random, flux of population and economic activities among growing and declining localities and regions influence services that are dependent on close by customers. In this ever-changing landscape of demand some region's gain and some loose, with great significance following for the leisure service sector.

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Appendix 1

Table A-1. Descriptive statistics

	Obs.	Minimum	Maximum	Mean	Std. Deviation
Total	3480	0	62830	821.12	3121.06
Accommodation	3480	0	6735	117.59	379.44
Culinary	3480	0	25323	313.15	1248.27
Movie	3480	0	4701	19.64	204.66
Special Events	3480	0	1786	12.84	95.88
Arts	3480	0	8513	68.25	430.46
Public	3480	0	3405	49.58	193.78
Sports	3480	0	5015	130.49	306.85
Well-being	3480	0	7369	109.57	325.27
Accommodation (ln)	3480	0	11.05	5.71	1.24
Culinary (ln)	3480	0	8.82	3.66	1.62
Movie (ln)	3480	0	10.14	4.58	1.38
Special Events (ln)	3480	0	8.46	0.87	1.44
Arts (ln)	3480	0	7.49	0.72	1.36
Public (ln)	3480	0	9.05	2.31	1.78
Sports (ln)	3480	0	8.13	2.77	1.46
Well-being (ln)	3480	0	8.52	3.96	1.4
Accommodation (ln)	3480	0	8.91	3.82	1.26
Intra_municipal (ln)	3480	6.54	13	8.77	1
Intra_regional (ln)	3480	0	13.08	8.78	3.08
Extra_regional (ln)	3480	0.34	10.71	8.65	1.1
Entry (ln)	3480	1.79	3.74	2.74	0.29
House prices (ln)	3480	5.33	8.94	6.83	0.66
Commuting	3480	0.03	0.87	0.27	0.14
Share of employment	3480	0.54	0.88	0.78	0.04
Share of manufacturing employment	3480	0.01	0.64	0.21	0.11

Table A-2. Bivariate correlations

	Accommodation (ln)	Culinary (ln)	Movie (ln)	Special Events (ln)	Arts (ln)	Public (ln)	Sports (ln)	Well-being (ln)	Accommodation (ln)	Intra municipal (ln)	Intra regional (ln)	Entry (ln)	House prices (ln)	Commuting	Employment	Manufacture
Accommodation (ln)	0															
Culinary (ln)	0.669**	0														
Movie (ln)	0.518**	0.722**	0													
Special Events (ln)	0.506**	0.608**	0.620**	0												
Arts (ln)	0.606**	0.795**	0.713**	0.583**	0											
Public (ln)	0.574**	0.749**	0.600**	0.509**	0.661**	0										
Sports (ln)	0.618**	0.843**	0.648**	0.553**	0.730**	0.708**	0									
Well-being (ln)	0.592**	0.902**	0.719**	0.581**	0.784**	0.742**	0.835**	0								
Accommodation (ln)	0.652**	0.922**	0.746**	0.633**	0.781**	0.795**	0.859**	0.926**	0							
Intra_municipal (ln)	-0.106**	0.179**	0.281**	0.145**	0.181**	0.095**	0.103**	0.280**	0.200**	0						
Intra_regional (ln)	-0.079**	0.121**	0.045**	0.041*	0.048**	0.102**	0.061**	0.216**	0.191**	0.448**	0					
Entry (ln)	0.083**	-0.119**	-0.057**	-0.033	0.062**	-0.164**	-0.113**	-0.166**	-0.242**	-0.292**	-0.325**	0				
House prices (ln)	0.402**	0.674**	0.641**	0.455**	0.657**	0.500**	0.603**	0.683**	0.600**	0.524**	0.230**	-0.02	0			
Commuting	-0.058**	0.224**	0.327**	0.196**	0.210**	0.098**	0.186**	0.241**	0.209**	0.654**	0.320**	-0.128**	0.626**	0		
Employment	-0.110**	-0.131**	-0.103**	-0.144**	-0.072**	-0.135**	-0.073**	-0.050**	-0.137**	0.213**	0.047**	0.097**	0.185**	0.112**	0	
Manufacture	-0.318**	-0.332**	-0.395**	-0.318**	-0.456**	-0.255**	-0.347**	-0.307**	-0.223**	0.028	0.300**	-0.383**	-0.421**	-0.092**	0.017	0