

# Soft and Hard Conditions for the Urban Economy

## Amenities, Agglomeration Economies, and the Role of Size and Scale

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### **Abstract**

The qualities of the city are increasingly seen as important to the location decision of firms and employees, and thus to economic growth. Especially urban social atmospheres and social structures are supposed to play an important role, but there is no consensus in the literature to what extent these factors really are important. In this paper, in an effort to contribute to this debate, we critically evaluate theories regarding the location behaviour of firms, and analyse the detailed geographical patterns of a selection of specific creative and knowledge intensive industries in the Amsterdam metropolitan area, while breaking the firms down in three size categories. Special attention is paid to the potential impact of the social and ethnic composition, the physical dimension and the functional mix of urban areas. We found that urban economic performance is not so much a city or metropolitan phenomenon, but that characteristics of smaller spatial units – city districts – appear to be more important. We also found support for our hypothesis that there is much more differentiation than the theories want us to believe. The differences within the creative industries, also within size categories, turn out to be significant.

## **1 Introduction**

Almost all – managers of – urban regions are searching for economic growth and prosperity and as long as cities and urban governance exist there are discussions about the role they can play in attracting firms and employees to their jurisdiction. However, more recently the debate on what drives urban economic growth has received new attention and a greater emphasis seems to be put on the role of so-called soft conditions in attracting firms and employees than ever before. There actually were discussions on the importance of amenities way before the current debates (Clark et al. 2002; Hall 1998), but nowadays these discussions seem to have become particularly manifest. This has resulted in greater attention to the qualities of the city or urban region as a factor of importance for the attraction of firms and employment. Among these qualities especially social structures and the urban social atmospheres, but also physical, historical and functional dimensions receive ample attention and are increasingly seen as necessary conditions for the settlement of employees, and thus firms, in an urban region. It is this debate we would like to go into. The theories that stress the importance of these factors will be critically addressed, in general, but also more specifically while we refer to new research material regarding the Amsterdam metropolitan area. In concordance with the prevailing discourse, special attention will be paid to the potential impact of the social dimension, seen in its widest meaning, covering household types, ethnic diversity and socio-economic compositions. However, we will also pay attention to the physical dimension, as characterised by the housing conditions (tenure, value and age of the dwellings), and by the functional structure, particularly the functional mix of urban areas. The

focus in this contribution will be on the relationship between these sets of conditions and the geography of employment in a selection of creative and knowledge intensive industries. That selection is much driven by the fact that some say that economic success of these sectors in particular is increasingly dependent upon talented people and that these talents especially would be attracted by cities with a specific set of (soft) conditions. This brings us to the following general question to be answered:

To what extent are soft factors, such as the social context, the level of social mix and diversity in general, important for the location decisions of firms – and their employees – in various economic sectors?

Before we will try to give an answer to this question for the urban region of Greater Amsterdam, we will first elaborate on some opposite views with regard to which factors would be explaining urban economic developments (section 2); this will be followed by a more specific exposé on the relation between the spatial differentiation of a range of urban assets and economic activities (section 3). Specific attention will be given to the spatial scale in section 4. A section on data and methodology (section 5) will precede the empirical analyses with which we hope to be able to answer the questions raised (section 6). In section 7 some conclusions will be drawn.

## **2 Two strands of theory of urban economic development**

There is a well-established and not so new branch of economic geographic theory that, over the past few years, received more than the usual attention and actually became the ‘New Conventional Wisdom’ as Gordon & Turok (2005) called it; that wisdom, in its most simplified form, says that urban economic growth is dependent on the presence of ‘creative talent’ and that ‘talent’, or the ‘creative class’, as it is also labelled, will be attracted by a variety of urban amenities. Thus, cities with the right set of amenities will – according to that theory – attract the required talent and subsequently these cities will profit from their presence and be able to realise urban economic activities.

The new attention this theory received must mainly be ascribed to popular work of Richard Florida (2002), who not only pointed at these correlations or associations, but also suggested that cities that currently are unable to show the required set of amenities, can simply create them, and then become ‘cool’ and successful. It is this simple suggestion that was highly welcomed by local urban politicians, but at the same time was heavily disputed by many academics, who challenged the arguments and the assumptions behind them (see for example: Hall 2004; Glaeser 2004; Simmie 2005; Peck 2005; Storper & Manville 2006; Scott 2006).

For the purpose of this paper, especially the opinions of Storper & Manville (2006) are interesting. With respect to Florida’s ideas they noticed that it is not that simple to make a city ‘cool’ and that there is a “larger difficulty of developing its ‘amenities’. ‘Amenity’ can mean many things (...). One person’s amenity is often the next person’s inconvenience” (p. 1252). They then expressed their preference arguing that “the notion that skills have driven growth, and that skilled workers locate according to some set of exogenously determined preferences and therefore determine the growth’s geography, is less convincing than a theory that the preferences of firms – i.e. agglomeration economies – give rise to growth” (2006: 1254).

Thus, in this debate there are two positions: Florida and co. claim that talent is attracted to places with the right amenities and that firms are attracted by talent; Storper and co. claim that firms are attracted to places and that these firms attract talent.

For the moment we opt for a third position, because we believe that there is a mutual relationship between ‘man’ and ‘environment’. It can be imagined that individuals as representatives of households or of firms take decisions on the basis of a wide range of factors; this creates new urban, social, economic and functional structures in the form of residential environments, urban milieus and economic districts. These – on their turn – exert some influence on new decision-making processes of individuals, managers, etc. So, a circular and mutually reinforcing process of change may be driving urban change as well as individual behaviour. Whether the actors or the structures have more weight remains to be seen, but we can imagine that the impact of actors and structures varies in different situations.

For example, we may assume that small and starting firms, especially in some branches of creative industries, are actually very much related to the lives of individual residential households. Many businesses start from home, with only one person working ‘in the firm’. The location of such ‘firms’ or self-employed will be highly dependent on the location decisions the household has taken before. For small households without children the ‘place-to-be’ as a student, as a single, or as a couple may have played an important role. From other studies we know that these areas are typically those with the highest level of urbanity such as inner cities that are characterised by a large mix of functions, tolerance to alternative lifestyles, with a lot of cultural facilities, plenty of public meeting places with opportunities for face-to-face contacts, and by the presence of a large number of other urban oriented people. Thus, for these individuals and households personal residential histories as well as the presence of urban amenities and urban atmospheres of the kind we just mentioned may be crucial for the decision to establish their activities right there. However, if small firms and self employed are related to other types of households, for example family type households or those who anticipate family formation, then a spatial orientation that is less urban or even suburban may be prevailing. In both examples the personal household histories and the presence of certain – albeit different – amenities, including social atmospheres, will be important factors in explaining spatial differences between the settlement patterns.

For larger firms the supply of amenities of the types we just mentioned (the soft factors) may not be of similar importance. We expect that more ‘distant’ decisions will be taken to settle the firm at a location where the cost-benefit balance is most optimal when firms are getting larger. In other words, the private lives of employees and factors such as social atmospheres will not automatically take the lead in location decisions. However, it could be ‘rational’ for larger firms as well, to focus on areas with special social and cultural atmospheres and the areas to be considered may be similar to those that are considered by the self-employed.

Since a more distant attitude towards the location decision might be expected already when the firm just passes the state of self-employment, we expect spatial difference between self-employed and small firms in the same economic sector.

It is to be expected that in general for larger firms agglomeration economies play a bigger role; cluster theories and theories in which accessibility, tax incentives, available qualified labour, connections and forward and backward linkages with other firms are more important for their location decision than these factors are for self-employed and perhaps also for small firms. So, it is important to distinguish between self employed, small and large firms. We hypothesise that self-employed frequently operate from their household basis and thus follow the distribution of households; small firms are likely also paying some attention to agglomeration economies already; for larger firms the weight of agglomeration advantages and connections with wider territories will be even stronger.

However, not just size, but also the economic activity itself will be important in location decisions. It is not difficult to imagine that activities that require a lot of face-to-face contact will have different location needs compared to firms that do not have that requirement; also firms that require more space or which have many forward and backward linkages in places outside of the urban region will have other location requirements compared with firms with less of these characteristics. If we focus the attention to some economic activities that currently receive ample attention: creative industries and computer and ICT companies, we hypothesise that firms in creative industries will be more centrally urban oriented, because of the multiple varieties (socially, physically, functionally) and the higher concentration of cultural activities in centrally located city districts, which could provide more stimulating environments for creative industries; and firms in computer businesses and other technical spheres, such as ICT companies will be less urban oriented, but better connected with the highway system, because these firms have to serve a spatially wider distributed network of customers. If we follow the theory that says that talent comes before the firms, smaller firms in these sectors may also be found in more urban sections of the metropolitan area, where the young talented people are residing. Before we will test some of these hypotheses first some more reflection on the theories is required.

### **3 Urban social assets and economic activity**

While an urban region may experience economic growth and while ‘skilled talent’ may be successfully attracted to firms and/or to the area, there are potential contradictions in these processes. Not all of the skilled talent belong to just one category. Suppose, for a moment, that talent is attracted by urban amenities; then, on the one hand, there is skilled talent that – following Florida – may be attracted by the openness, tolerance, diversity, and social attractiveness of a city, that is, by cities that offer variety, that are not too polarised or segregated, not too unequal and not too much fragmented. This might especially be relevant for talent that is oriented upon creative industries. But on the other hand there is skilled talent that does not value these assets in the same way. Swanstrom (2007) argued that more homogeneous environments (instead of diverse ones) might be more helpful attracting new creative industries, since that attraction will to quite some extent build on trust relations. And these are easier to realise in a homogeneous environment. On the other hand, he noticed that diversity of social networks, which can be local as well, is important for creativity. Other types of talent, for example those who are not employed in creative industries, may also be attracted by more homogeneous – possibly family oriented – milieus, they might prefer communities of limited liability, perhaps in (semi) gated form; in fact, they might prefer some segregation and accept social polarisation and inequality at the level of the city.

In addition, there is another category of employees that impacts upon the social strata. High-skilled people, wherever they live, have to be ‘serviced’ by lower skilled and unskilled employees, who occupy the jobs in café’s, bars, restaurants, cleaning, gardening, health care, public services, and whatever. Many recent immigrants will find their first jobs in these spheres. As a result, differentiation, social inequality, polarisation and segregation may develop in various places (see Scott 2006). This kind of social development, however, may reduce the attractiveness of the city for some and ultimately lead to a reduction of talent that decides to settle there and thus will lead to a reduction of economic growth. Although this line of reasoning seems to underline Florida’s arguments and is in support of moderate social inequality as a condition to economic growth, Scott’s ideas contrast with what Swanstrom put forward, but also with another statement of the same Richard Florida (2005, p. 190) when he

undermined his own theory and showed that there is a positive relationship between the level of social inequality and the level of creativity.

However, Gordon and Buck (2005) supported Scott's view and argued that inequalities will undermine social cohesion, and lack of social cohesion will undermine economic competitiveness. Therefore, they say, cities that want to prosper will have to address social inequality. In fact, that is politically the most attractive thesis, since it fits another major urban policy discourse, which is the discourse aiming at residential mixing of social (and indirectly also of cultural) groups. There is a strong and widely shared view – especially in Western Europe – that social and cultural mix is good for society; that would keep people together, would stimulate integration, provide 'good' role models for the socially weak, etc. and finally that would result in a positive sum social outcome. Many local governments would be extremely happy with a strong theoretical relationship between economic development and moderate social inequality.

However, this short review showed us that there still is confusion about how to read concepts like 'diversity', 'tolerance' and 'openness' when we relate them to social inequality and social segregation. The dominant interpretation seems to be that moderate levels of social and spatial inequality are conditional to the attraction of at least a substantial segment of talented employees who are expected to give a boost to the local urban economy. The argument is that moderately segregated urban areas are more open and attractive and more diverse at the local level and thus more attractive to creative talent. If this would be true, segregated (not-diverse and not-open) cities would be unattractive to creative talent and would perform badly in economic terms; non-segregated cities would be attractive and perform better. A positive test of this theory would be great, since – as said – this would solve economic problems and social problems! What else do we want?

However, a first test in which the economic performances of cities with different levels of segregation were compared with each other showed that there was no clear relationship at the level of the city (Musterd 2006). On the one hand this is a sad finding: economic growth does not go hand in hand with low levels of social spatial inequality. That means that the economic political agenda does not run parallel to the social mix political agenda. On the other hand, neither we found a positive relation between the level of segregation and the level of economic performance. So, cities do not *have* to be segregated to be able to perform well. One might say that it is 'irrelevant' whether a city is segregated or not. This would offer opportunities for developing different social policies in cities, while aiming at similar economic objectives.

These preliminary research findings should be read as a signal that the story on urban economic performance is not so much a *city* story, but something else, perhaps a *city district* story.

#### **4 From city to city-district**

Neither firms, nor creative talent seem to be attracted to the city as a whole, but to specific 'milieus' with specific characteristics. So more specified questions could be formulated following the one already formulated in the introduction:

How spatially differentiated are patterns of employment in small and large firms of the creative and knowledge intensive industries sector?

How can these patterns be understood, and in particular, what is the role of soft conditions?

Here again it makes sense to make a distinction between larger and smaller firms and between different sectors of economic activity. For the larger firms the global and more classic considerations and cluster-theory related arguments might come first in the selection for a certain location. For smaller firms, especially those in creative industries, the micro-scale context may be relatively more important, compared with the larger firms. Factors such as those related with tax regimes and accessibility may be less important for these smaller firms. However, other 'place-specific' characteristics, such as the availability of affordable space, the presence of related firms and facilities, and the 'urban and social atmosphere' that fits the economic activity, might be more important. It is to be expected that place of residence and place of work will actually spatially overlap more often in the case of self-employed and small firms than when firms are larger. That implies that for the smaller firms, the preferences of the employees may carry a relatively higher weight, not necessarily at the city level, but at the local neighbourhood level. This is not to say that cluster theories are unimportant to small firms. It may also be beneficial to small firms to settle in a specific 'cluster' or designated district that is characterised by its own economic identity.

In an effort to contribute to this debate we will present some results of research in which we investigated the spatial differentiation of employment of various economic activities, in different firm-size categories, in a detailed way. We focus on the metropolitan area of Amsterdam, a region which is, according to various sources, performing rather well, in particular in the spheres of creative and knowledge intensive industries (see Kloosterman 2004; Bontje & Sleutjes 2007), but also in terms of the share of higher-educated people and the availability of jobs in the service sector (Marlet & Van Woerkens 2005).

## **5 Data and methodology**

We built up a dataset for 'metropolitan Amsterdam', including Aalsmeer, Almere, Amstelveen, Amsterdam, Beemster, Diemen, Edam-Volendam, Graft- de Rijk, Haarlem, Haarlemmerliede en Spaarnwoude, Haarlemmermeer, Landsmeer, Muiden, Oostzaan, Ouder-Amstel, Uithoorn, Waterland, Weesp, Wormerland, Zaanstad and Zeevang. In this area, with a population of over 1.6 million we distinguished 7535 grid cells of 200 x 200 meter which at least had one employee (Figures 1 and 2). Together these cells showed almost 800,000 workplaces. Detailed data were available not just in spatial terms but also in terms of the economic sectors. We had access to economic data from the ARRA business register (Registration of Activity in the Amsterdam Region). This involves data on firms and employment per economic activity, again available in great detail (five and six digit SBI codes). Data on the physical, social and functional structure of small areas were available from the Amsterdam Region Monitor that we developed together with municipalities in the region. These data are at a very detailed spatial level as well. On the basis of these data – all measured for the year 2005 – we constructed a dataset in which information was organised per grid cell. We experimented with different sizes of the cells as spatial units, including a 50m<sup>2</sup> grid, but concluded that the 200m<sup>2</sup> grid cells represented the most meaningful environments. All information was brought to this level with help of GIS.

We intended to focus on activities where 'talented' people would be required. We therefore focused on creative industries and knowledge intensive industries. Among the creative industries we selected the arts sector (e.g. visual and performing arts, galleries, museums), architecture, media and entertainment (including the production of radio/TV

programmes, film and video production, publishing companies, as examples), and creative business services (such as advertising, design and consultancy). In the knowledge intensive industries we selected in the ICT sector the computer firms (see Table 1 for some basic information). For each of these activities we performed separate analyses for three distinct size categories: the self-employed without other employees; small firms; and larger firms. In the multivariate analyses we just included grids where at least 10 employees (in all sectors) could be found and where at least one employee in the sector under consideration was included. The focus is on employees and where they are employed.

We investigated the relative differences in concentration of economic activities as a function of a set of independent variables. We used as the dependent variable the percentage of employed people in a sector relative to the total number of employees in a grid cell; for self-employed people, for whom place of residence seems more important, we used the number of inhabitants as the denominator. Ordinary Least Squares linear regression models were applied. We deliberately constructed models with independent variables that were especially fit for theories in which soft conditions were predominant. If model outcomes would show low levels of explanation and/or few relevant significant relationships between the dependent and independent variables, this would indicate that the soft conditions theory does not receive support. The independent variables can be organised in a few blocks, representing the dimensions we referred to in the theoretical discussion, where among other things we referred to: amenities, social structure, diversity, functional mix, affordability, residential space, clustering, and centrality. The blocks include:

- Indicators representing the physical structure: real estate values (four classes), tenure (share of owner occupied housing, private rent, and social rent) as well as information on the age of the housing stock (in six classes); and the level of mix in terms of real estate values, age and tenure (applying entropy measures)
- Indicators representing the social structure: age (five categories), household type (five categories), immigrant status (non-Western, Western, Dutch), share on social benefits (less than three years, three years or more, total), unemployment and income; for the various forms of diversity we constructed three mix variables (all with entropy measures): age mix, immigrant mix, and income mix
- An indicator representing the functional mix: number of different SBI5-codes per postcode area as basis
- A specific indicator for the overall presence of creative industries excluding the sector under consideration
- An indicator for centrality: distance to the Dam (most central point in Amsterdam).

## **6 Understanding the geography of creative industries and computer firms**

On the basis of the theoretical discussion we expect employees in smaller businesses and in creative industries to be located more centrally, more in relatively socially, functionally and physically mixed diverse areas, and usually in areas with affordable accommodation; locations of employees in larger firms and in ICT related activities will more often associate with less centrality, more homogeneity, less mix, and more expensive areas. In other words, soft conditions at micro-level may be more important for small firms and for creative industries; and classic and cluster theory related factors may be more important for larger firms and ICT related activity. In this section we will evaluate these hypotheses.

The geography of employment in the economic sectors we distinguished provides an interesting picture. We constructed a series of maps while taking the distributions of the

population and of employment in general into account. In other words, we just wanted to know whether there was an overrepresentation of certain sector-employment in some parts of the metropolitan region relative to the overall distribution of employment; for self-employed people we searched for over or under representation relative to the number of inhabitants per grid. For reasons of space we confine the illustrations to the arts and architecture sectors (Figures 3 and 4).

We will start with the self-employed. Would we just look at the maps with concentrations of self employed, the most central part of the region, in fact mainly Amsterdam, would come out most clearly; however, if we relate these figures to the number of inhabitants per grid cell, the patterns of concentration are less clear. Self-employed in the arts sector (Figure 3a) tend to be concentrated almost throughout the metropolitan area, but interestingly somewhat larger concentrations can be found more peripherally. Self-employment initiatives are taken at many places. There was hardly any difference between the other sectors we distinguished: self-employed in architecture (Figure 4a), in creative business services, in media and entertainment, and in computer businesses, can be found across the region and is – at first glance – reflecting the distribution of the population.

Employment in small and large firms has been presented relative to the total number of employees in the grid cells in the metropolitan region. What we found is that employment in small firms, when controlled for the distribution of employment in general, is less frequently located in central parts of the region than expected on the basis of the literature. This holds most for employees in small architecture firms (Figure 4b), in small creative business services, and in small computer firms, which appear to be relatively over-represented in non-central locations. For computer firms this is according to our expectations, but not for the other two. Employees in small arts firms (Figure 3b) and in small media and entertainment firms are somewhat over represented in the most central parts of the metropolitan region, perhaps reflecting the creative core best.

The location patterns of employees in larger firms in architecture do not resemble those of employees in smaller firms (Figure 4c); the Spearman correlation coefficient (for ordinal variables) for the share of employees in large architecture firm versus those in small architecture firms was:  $-.48$ . Contrary to the smaller firms, overrepresentations and large concentrations of employees in larger architecture firms can be found in the central city of the region, but a higher than expected share of employees in this sector can also be found in business parks and in the vicinity of highways, on various locations in the region. Over representations of employees in larger creative business services firms and in the media and entertainment sector can be found both in central and non-central locations; for the latter sector, the largest concentrations can be found in particular in the more peripheral parts of the metropolitan area; probably their space and accessibility requirements are more powerful than the need for highly mixed or diverse creative milieus; for the media and entertainment sector this seems to indicate that there is a separation between smaller, centrally located creative parts of the sector in the most diversified districts of the region, versus the larger, production oriented parts of the sector in more peripheral locations at the well-connected fringes of the region. As expected employees in larger computer firms tend to concentrate more peripheral along highways. Larger arts firms, however, are typically centrally located (Figure 3c). Here, also the larger firms are embedded in the milieus that are regarded to be most creative open and diverse; so, in this sector, apart from the self-employed, employees in small and large firms tend to settle in the core of the region. Table 2 summarises the patterns we found.



### **Understanding the spatial orientation**

The question now is whether the preliminary interpretations of the spatial patterns will be supported by detailed multivariate models in which the share of employment in a sector is regressed against a range of factors we referred to as being relevant for understanding the differences? How important are soft factors for the explanation of the (relative) presence of specific types of employees who are employed in specific types of firms? Tables 3-5 show us the regression parameters for the three firms types and five sectors.

Various broad conclusions can be drawn. First, it is striking that the  $R^2$  values are rather high for the analyses with self-employed and also clearly higher for models explaining the relative share of employees in a specific sector in small firms, compared to larger firms. This implies that the selection of variables, which is deliberately biased toward soft conditions, is more fit for the location patterns of self-employed and smaller firms than for larger firms. Secondly, there is a wide variety in terms of significance of parameters between the economic sectors within a firm's size category. This indicates that specific economic sectors tend to settle in specific milieus. Thirdly, a comparison between size categories within an economic sector reveals that spatial orientations of different size categories require different explanations as well.

More detailed conclusions can be drawn if we focus on the respective size categories. First of all we see that self-employed in the arts sector as expected correlate positively and significantly with a more peripheral location (distance to the Dam). The media and entertainment sector can also be found across the region, but here a more central orientation can also be discovered (Table 3). The other sectors do not show a significant spatial orientation. Another interesting finding is that as far as there are significant relations between the level of demographic and socio-economic mix in an area, these appear to be negative for all sectors. That implies these self-employed activities correlate with relatively more homogeneous milieus. An interesting difference between sectors can be shown where we find a significant positive correlation between the level of ethnic mix in an area and the share of self-employed in the arts sector and in computer businesses; in the sectors of media and entertainment and in the creative business services sector this relation is significant as well, but negative. This points at the existence of different micro-spaces for these sectors. Further analysis shows that there is a highly significant and negative relation between on the one hand the share of self-employed in media and entertainment and in creative business services, and on the other hand the share of ethnic Dutch and the share of non-Western immigrants. That implies that self-employed in these sectors can mainly be found where the share of Western migrants is high.

A summarised picture for each of the sectors reveals that self-employed in the arts sector can be found in more peripheral and relatively homogeneous areas in terms of households and age composition, but not in terms of ethnicity; these areas tend to be inhabited by middle-aged households, and neither by single person households nor by families with children; there are relatively many people who are on social benefits for a long period of time, yet these areas are not the poorest. They are characterised by rented dwellings.

Self-employed in architecture associate with areas with high incomes, but also with areas with low income; these areas are, however, 'white' and neither coloured, nor ethnically mixed; even though a lot of low income households are living in the areas where these architects have their job, the real estate value is generally high. The areas we described typically appear to have gentrification potential.

The self-employed in the media and entertainment sector are positively related to the share of Western migrants and negatively with higher incomes, but again positively with a high real estate value. This too points at spaces that may undergo upgrading processes.

Creative businesses also associate with the presence of Western migrants. There also is a significant positive relation with the level of functional mix, but a significant negative relation with the level of social, ethnic or demographic mix. These self-employed show associations with households with middle incomes, and with the middle value type of neighbourhoods.

Self-employed in computer businesses can be found in functionally mixed areas and areas where there is a mix of age of dwellings; the neighbourhoods they are in are typically 'ethnic Dutch', and characterised by households who earn higher incomes, and are living in dwellings with middle-to-high values.

A similar analysis for small firms (excluding self-employed) reflects the more central orientation of the arts sector and the media and entertainment sector (Table 4). In the arts sector the share of employed in small firms correlates significantly and positively with the level of mix in terms of household types; this contrasts with the negative relation with household type mix we found for the self-employed; employees in the small arts sector show a negative relation with low and high incomes and with income mix. Neighbourhoods where small arts firms settle seem to associate with middle incomes and with owner occupied housing.

Those who have a job in the small media and entertainment sector are also centrally oriented. However, their locations are not specifically neighbourhoods with a mix of household types, as we saw in the arts sector, but they are positively and significantly related to areas with higher levels of functional mix. We should bear in mind that for this sector the explanatory power of the model we used is not very high.

Employees in small architecture firms tend to be peripherally located. In contrast to the locations of self-employed architects, these locations associate with areas where the share of low-income households is relatively high and where there are few dwellings with high real estate values. There is a significant positive relation with the share of other creative industry firms in the direct environment, which points at some clustering with related firms.

The connection with related firms is also important for creative business services, which also tend to settle more in the periphery. These firms, however, can especially be found in areas with a mixture of real estate values. The positive association with the short-term unemployed and the negative association with the long-term unemployed may reflect their presence in typical dynamic starter milieus, where people try; some fail, and some succeed.

The peripheral orientation of employees in small computer firms is reflected in the association with owner occupied housing and relatively recently built (suburban) housing, although there also is a positive relation with the level of functional mix (which normally is expected to associate with centrally located neighbourhoods).

The models for larger firms are generally weak in terms of explanatory power, which indicates, in the first place, that the selected set of soft conditions play a moderate role for larger firms. In fact, it just makes sense to look at the arts sector and to the architects in greater detail, since for them the factors we used, seem to have at least some meaning.

It is interesting to see that the factors that are important in the explanation of the settlement pattern of self-employed (Table 3) differ from the factors that are relevant to employees in small firms (Table 4), and that these again differ from the factors that are important for larger firms (Table 5).

In the arts sector, the self-employed are associated with periphery, homogeneity, and 'average' areas; smaller firms can be found in more central areas with high levels of

household mix and more owner occupied housing, but not in association with areas with a high real estate value; the share of employees in larger firms, however, correlates with areas that are characterised by a large share of short-term unemployed, which we interpreted as dynamic areas, and with a high real estate value. Large arts firms (galleries etc) are typically associated with the highly dynamic and expensive sections of the core city of the urban region.

In some respects the employees in larger architectural firms seem to be found in really contrasting milieus. As opposed to the self-employed and small firms the larger firms can be found in areas that correlate negatively with high and low incomes, and positively (and significantly) with the share of non-Western migrants. Remember that self-employed architects can especially be found in 'white' neighbourhoods. Concentrations of employees in large architectural firms appear to be characterised by a mix of housing in terms of age of the dwellings that are there. What is similar to the self-employed, but contrasts with architects in smaller firms, is that the areas larger firms are located in are characterised by a high real estate value. Whereas the share of other creative industries in the environment of the firm is important for small architectural firms, it is insignificant for larger firms.

## **7 Conclusions**

In an effort to get a better understanding of the geography of creative and knowledge intensive industries we critically evaluated two strands of theories regarding the location behaviour of firms, and analysed the geographical patterns of various economic sectors in these spheres, while breaking the firms down in three size categories. We were particularly interested to see to what extent soft factors play a key role in the settlement patterns of various types of firms and their employees. These factors receive ample attention in public discourses and seem to have become the New Conventional Wisdom in urban policies, as Gordon and Turok (2005) argue; however, there clearly is no consensus in the literature to what extent these factors really play a major role. So there is a need to further investigate whether soft factors, which would help attracting 'talent', are crucial or that firms do not associate with these soft factors, but with agglomeration advantages and factors derived from cluster theories.

We decided to construct models in which particularly soft factors would be well represented and included territorial qualities such as the social structures, household compositions, ethnic diversity, and socio-economic positions, but also looked at the impact of the physical dimension, with housing conditions, tenure structure, the value of real estate and the age of dwellings as crucial factors. Moreover, we looked at the levels of functional mix, and the presence of related firms.

We also paid ample attention to the spatial scale of the issue; many debates refer to 'cities' or to 'metropolitan areas'; we argue that if specific soft milieus would be important for the settlement of employees and firms, these milieus would probably be sub-districts of the wider metropolitan area. Therefore, we carried out our analyses at a detailed spatial level. In this section we will present the major conclusions.

We found support for our hypothesis that there is much more differentiation than the New Conventional Wisdom wants us to believe. For some economic activities soft conditions seem important and in those contexts, mainly situations of self-employment, these conditions may play a major role in attracting or keeping the talent attached to a certain location, after which the economic activity may start growing. However, as soon as firms start to grow, these soft conditions turn out to loose their impact; for these firms other factors appear to become more

important, including the clustering together with related firms and likely also other agglomeration advantages.

It turned out to be important to break down the analyses for self employed, small firms and larger firms, in each of the sectors we distinguished. It also appeared to be very important to consider relative figures, since there still is an explicit spatial pattern in the metropolitan region we studied, with population and employment concentrations in various locations, including the centre of the central city. We were also able to show that if we relate the self-employed to the number of inhabitants per grid, the specific geography of these employed almost disappeared, except for the arts sector, where concentrations of self-employed were found especially in the periphery of the metropolitan area. In general one could say that self-employment initiatives are taken at many places; they reflect the population distribution, although different factors appear to explain the more precise micro patterns for different sectors! What is striking, is that soft conditions appear to be very important for the self-employed in each economic sector we looked at. The relative concentrations of self-employed could be statistically explained rather well with the soft factor dominated models we developed, yet the patterns and explanations did not uniquely associate with multifunctional, socially and physically mixed inner city areas with – in the words of Jane Jacobs (1961) – a lot of ‘hustle and bustle’. Some were obviously searching for fairly homogeneous and not so urban environments. However, very specific climates could be related to some of the self-employed in the creative sector. For example, those who are self-employed and active in media and entertainment and in creative business services tend to settle in areas where the share of Western migrants is high. Self-employed in architecture and in the media and entertainment sector appeared to be located in districts with gentrification potential.

Another interesting finding regards our hypothesis that small firms in creative industries are expected to be over-concentrated in central parts of the metropolitan area. In contrast to the hypothesis, we found that notably in architecture but also in creative business services, some of the small firms appeared to be found in the periphery instead, again not following the theories that claim that these activities flourish where there is diversity, a mixed community and functional mix (Florida 2001). The peripheral concentration of small computer firms and for that matter also larger firms was as expected. The central city orientation of small firms in the arts and in the media and entertainment sector was according to our expectations. These activities, when becoming serious endeavours in economic terms, represent the so-called ‘creative core’ best. Mixed areas in terms of household types (for the arts sector) and in terms of functional structure (for media and entertainment) correlated with the spatial patterns of these firms. Small firms in architecture and in creative business services with an orientation towards the geographical periphery turned out to search places where also other creative industries could be found. Cluster theories may apply to these activities.

Large firms in the arts sector were also centrally located, most likely (measured through high real estate values) in expensive parts of town. That pattern has some resemblance to that of the large firms in architecture. In general we found that size is an important factor in the location decision just as much for the creative industries as for other economic activities. For most of the creative industries too (except arts and part of the architecture), the periphery becomes more important if the size got bigger. Likely, when the size is increasing space and accessibility are becoming more powerful than the need for highly mixed or diverse creative milieus.

As was already stated, the differences within the creative industries turned out to be rather important, also within a certain size category. This became most evident when we analysed the multivariate models and were able to show that frequently different parameters were driving the relative concentration patterns. The empirical analyses showed us that Florida's argument that creative people would only go to attractive urban places with a lot of diversity, tolerance, openness and variety, places that typically associate with central cities, could not be supported. Soft conditions are important to self-employed, but even then, the places and characteristics differ per sub sector within creative and knowledge intensive industries. When firms get bigger, other factors become more important, but again we could point at various factors that appeared to be important for location behaviour of these firms, factors that again differ per sector.

The findings of this research have a serious policy implication. The promotion of policies that are aimed at social mix, diversity, and anti-segregation may be good for its own sake and for moral and political reasons, but not generally for economic reasons.

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Table 1 Number of employees and number of firms in self-employment, small firms and large firms per selected economic sector

	Self- employment		Small firms (excl: self-employed) 1)		Large Firms	
	employees	firms	employees	firms	employees	firms
Architecture	1174	1174	1012	398	10138	373
Arts	1892	1892	1437	581	5912	222
Media & Entertainment	2264	2264	1734	534	12011	139
Creative Business Services	2803	2803	2285	934	10999	557
ICT	2309	2309	3272	939	16197	298

1) for creative industries small is defined as < 5 employees; for ICT: < 10 employees

Table 2 Spatial orientations of firms by sector and size

	Self-employment	Small firms (excl: self-employed)	Large Firms
Architecture	Reflecting household's distribution; few special patterns	Peripheral	Central and in business parks
Arts		Central	Central
Media & Entertainment		Central	Central and peripheral
Creative Business Services		Peripheral	Central and peripheral
ICT		Peripheral	Peripheral

Table 3 Regression coefficients for self-employed

OLS self-employed	Arts	Architects	Media & entertainment	Creative business services	Computer firms
Functional mix (entropy)	0,034	-0,058	0,031	0,097 ***	0,081 *
Real estate value mix (entropy)	-0,046	-0,007	-0,032	-0,033	-0,142 **
Building year mix (entropy)	0,054	-0,021	0,086	0,004	0,186 ***
Housing tenure mix (entropy)	0,065	-0,026	-0,029	-0,028	-0,067
Age of inhabitants mix (entropy)	-0,212 **	-0,355 ***	-0,166	0,075	-0,303 ***
Household types mix (entropy)	-0,447 ***	-0,070	-0,227 ***	-0,214 ***	0,039
Immigrant mix (entropy)	0,217 ***	0,002	-0,157 *	-0,775 ***	0,207 **
Income mix (entropy)	-0,044	-0,187 **	-0,168 *	-0,175 ***	-0,143 *
Creative firms (excl. own sector)	-0,031	0,007	0,043	-0,054 *	-0,052
Distance to the Dam	0,204 ***	-0,101	-0,124 *	-0,073	0,092
Dutch inhabitants (%)	0,138	-0,149	-0,690 ***	-1,575 ***	0,345 **
Non-western immigrants (%)	-0,126	-0,323 **	-0,739 ***	-1,129 ***	0,193
High income (%)	-0,029	0,281 *	-0,352 ***	-0,208 **	0,250 *
Low income (%)	0,134	0,392 ***	-0,096	-0,200 ***	0,087
Unemployed < 2 years (%)	0,047	0,163	0,113	0,023	-0,148
Unemployed > 2 years (%)	0,011	-0,219 **	-0,084	-0,034	0,051
Social benefit < 3 years (%)	-0,228 ***	-0,032	-0,057	0,050	0,008
Social benefit > 3 years (%)	0,293 ***	0,131	-0,153 *	-0,059	0,034
18-24 years old inhabitants (%)	0,016	0,104	-0,150 ***	-0,030	0,182 *
25-54 years old inhabitants (%)	0,246 ***	-0,401 ***	-0,134	0,015	0,066
Couples without children (%)	0,040	-0,204 *	-0,503 ***	-0,037	0,171 **
Couples with children (%)	-0,395 **	-0,169	-0,256 **	-0,036	-0,037
1 person household (%)	-0,857 ***	-0,369 *	-0,399 ***	-0,005	-0,264 *
Low real estate value (%)	-0,135 **	0,021	0,010	-0,110 **	-0,163 **
Middle low real estate value (%)	-0,292 ***	0,097	0,028	0,027	-0,288 ***
High real estate value (%)	0,025	0,271 ***	0,248 ***	-0,250 ***	-0,043
Building year before 1919 (%)	-0,330 ***	-0,104	-0,084	0,124 *	-0,016
Building year 1920-1944 (%)	-0,240 **	0,182 *	0,068	0,022	0,078
Building year 1960-1974 (%)	0,044	0,059	0,005	-0,001	0,192 **
Building year 1975-1989 (%)	-0,101 *	0,077	0,001	-0,021	-0,022
Building year after 1990 (%)	-0,318 ***	0,160	0,034	0,191 ***	-0,081
Owner occupied (%)	-0,299 ***	0,032	0,012	-0,066	-0,196 **
R2	.659	.391	.451	.729	.325

significance: \* p<.10; \*\* p<0.05; \*\*\* p<0.01



Table 4 Regression coefficients for employees in small firms

OLS small firms (excl self-empl)	Arts	Architects	Media & entertainment	Creative business services	Computer firms
Functional mix (entropy)	0,034	-0,104	0,136 **	0,002	0,128 **
Real estate value mix (entropy)	0,092	-0,150 **	-0,086	0,134 **	-0,028
Building year mix (entropy)	-0,023	-0,061	-0,118	-0,088	-0,087
Housing tenure mix (entropy)	-0,047	0,145 *	0,012	0,063	-0,031
Age of inhabitants mix (entropy)	-0,160	-0,111	0,146	-0,081	0,017
Household types mix (entropy)	0,223 *	0,085	-0,032	0,091	0,029
Immigrant mix (entropy)	0,132	-0,177 *	-0,008	-0,010	-0,123
Income mix (entropy)	-0,185 *	0,042	0,004	-0,149	-0,015
Creative firms (excl. own sector)	-0,020	0,302 ***	0,010	0,214 ***	0,009
Distance to the Dam	0,044	0,009	-0,049	-0,014	-0,123
Dutch inhabitants (%)	-0,084	0,052	0,188	-0,113	-0,139
Non-western immigrants (%)	-0,248	0,154	0,138	-0,294 *	-0,222
High income (%)	-0,400 **	0,205	-0,150	0,061	-0,108
Low income (%)	-0,304 *	0,292 **	0,030	0,061	-0,072
Unemployed < 2 years (%)	0,115	0,192 *	-0,109	0,253 ***	-0,022
Unemployed > 2 years (%)	-0,188	-0,224 **	0,115	-0,245 ***	-0,081
Social benefit < 3 years (%)	-0,055	-0,057	-0,110	-0,021	-0,017
Social benefit > 3 years (%)	0,092	0,193 **	0,080	0,264 ***	0,102
18-24 years old inhabitants (%)	0,011	-0,034	-0,053	-0,009	-0,006
25-54 years old inhabitants (%)	0,138	-0,235 **	0,189	-0,081	0,028
Couples without children (%)	-0,131	0,018	0,118	-0,093	-0,045
Couples with children (%)	0,067	0,108	0,285 *	0,014	-0,038
1 person household (%)	-0,071	0,048	0,149	-0,150	-0,148
Low real estate value (%)	-0,074	-0,142	0,000	0,005	0,148
Middle low real estate value (%)	-0,116	-0,150	-0,195 *	-0,117	0,034
High real estate value (%)	-0,092	-0,269 **	-0,076	-0,162 *	-0,115
Building year before 1919 (%)	-0,170	0,121	-0,046	-0,052	0,108
Building year 1920-1944 (%)	-0,256	0,077	-0,221 *	0,010	-0,071
Building year 1960-1974 (%)	-0,147	0,146	-0,121	0,233 ***	0,005
Building year 1975-1989 (%)	0,017	0,041	-0,002	-0,016	0,172 **
Building year after 1990 (%)	-0,275 *	0,149	-0,198	0,118	0,101
Owner occupied (%)	0,260 **	0,055	0,025	0,072	0,267 ***
R2	.164	.232	.128	.194	.170

significance: \* p<.10; \*\* p<0.05; \*\*\* p<0.01

Table 5 Regression coefficients for employees in large firms

OLS large firms	Arts	Architects	Media & entertainment	Creative business services	Computer firms
Functional mix (entropy)	0,080	-0,128 **	0,044	-0,024	-0,120 **
Real estate value mix (entropy)	-0,060	-0,147 *	0,050	-0,051	-0,014
Building year mix (entropy)	0,083	0,118 *	0,130 *	-0,017	0,025
Housing tenure mix (entropy)	0,030	0,005	-0,030	-0,076	-0,144 **
Age of inhabitants mix (entropy)	-0,030	0,184	-0,101	-0,063	-0,013
Household types mix (entropy)	-0,156	-0,198	-0,072	0,077	0,003
Immigrant mix (entropy)	-0,023	-0,279 ***	-0,151	-0,158 *	-0,086
Income mix (entropy)	-0,073	0,013	0,061	0,068	0,076
Creative firms (excl. own sector)	-0,050	0,065	0,003	0,116 **	-0,008
Distance to the Dam	-0,047	-0,028	-0,059	-0,195 **	-0,049
Dutch inhabitants (%)	0,203	0,224	0,095	0,239	0,193
Non-western immigrants (%)	0,312	0,298 *	0,295	0,197	0,237
High income (%)	0,129	-0,301 *	0,017	0,101	0,122
Low income (%)	-0,099	-0,239 *	-0,005	0,096	0,112
Unemployed < 2 years (%)	0,266 *	-0,151	0,011	-0,093	-0,036
Unemployed > 2 years (%)	-0,203	0,090	-0,034	0,102	-0,035
Social benefit < 3 years (%)	-0,113	-0,039	-0,076	0,000	0,031
Social benefit > 3 years (%)	-0,005	-0,074	-0,017	-0,094	-0,164
18-24 years old inhabitants (%)	-0,028	-0,052	0,077	0,025	-0,066
25-54 years old inhabitants (%)	-0,024	0,113	-0,103	0,041	0,056
Couples without children (%)	-0,062	-0,117	0,053	-0,070	-0,036
Couples with children (%)	-0,121	-0,357	0,029	-0,139	-0,146
1 person household (%)	-0,147	-0,223	0,117	-0,012	0,136
Low real estate value (%)	-0,092	0,050	-0,093	-0,053	-0,033
Middle low real estate value (%)	-0,028	0,035	-0,028	0,008	0,101
High real estate value (%)	0,207 *	0,286 ***	0,145	-0,025	0,222 **
Building year before 1919 (%)	0,050	0,118	0,001	-0,055	-0,058
Building year 1920-1944 (%)	-0,046	0,042	-0,030	-0,039	0,021
Building year 1960-1974 (%)	-0,021	-0,008	0,081	0,020	0,041
Building year 1975-1989 (%)	-0,017	-0,033	0,007	-0,019	0,026
Building year after 1990 (%)	-0,090	0,071	0,058	-0,012	0,048
Owner occupied (%)	-0,165	0,077	-0,103	0,043	-0,025
R2	.159	.200	.099	.086	.107

significance: \* p<.10; \*\* p<0.05; \*\*\* p<0.01

Figure 1 Population distribution in the metropolitan area of Amsterdam, 2005

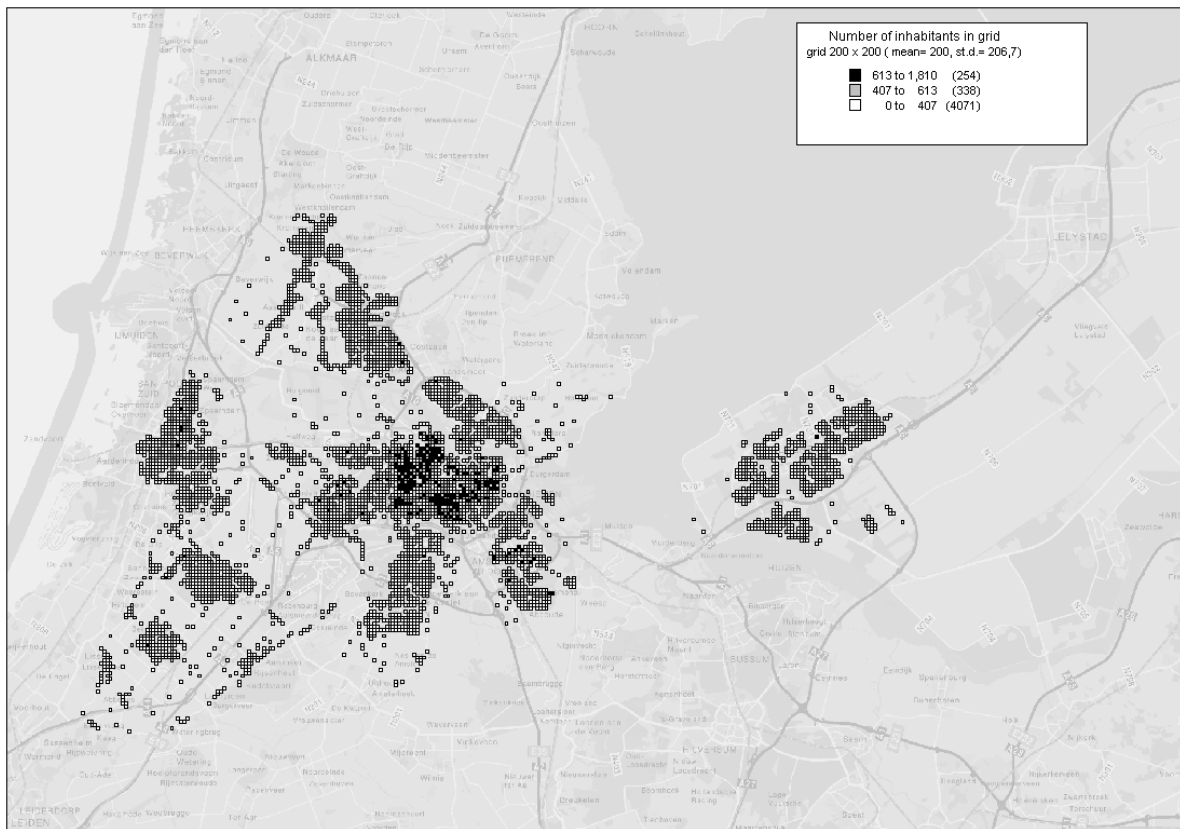


Figure 2 Employment distribution in the metropolitan area of Amsterdam, 2005

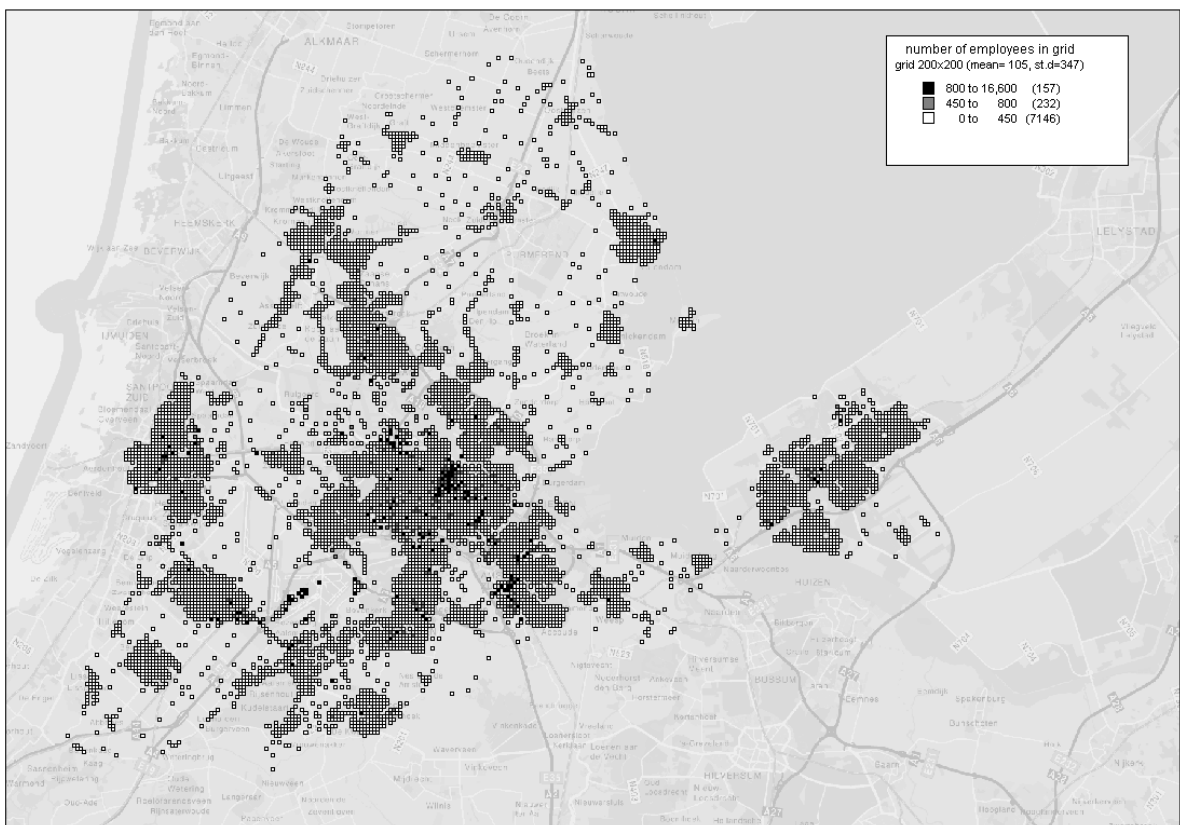
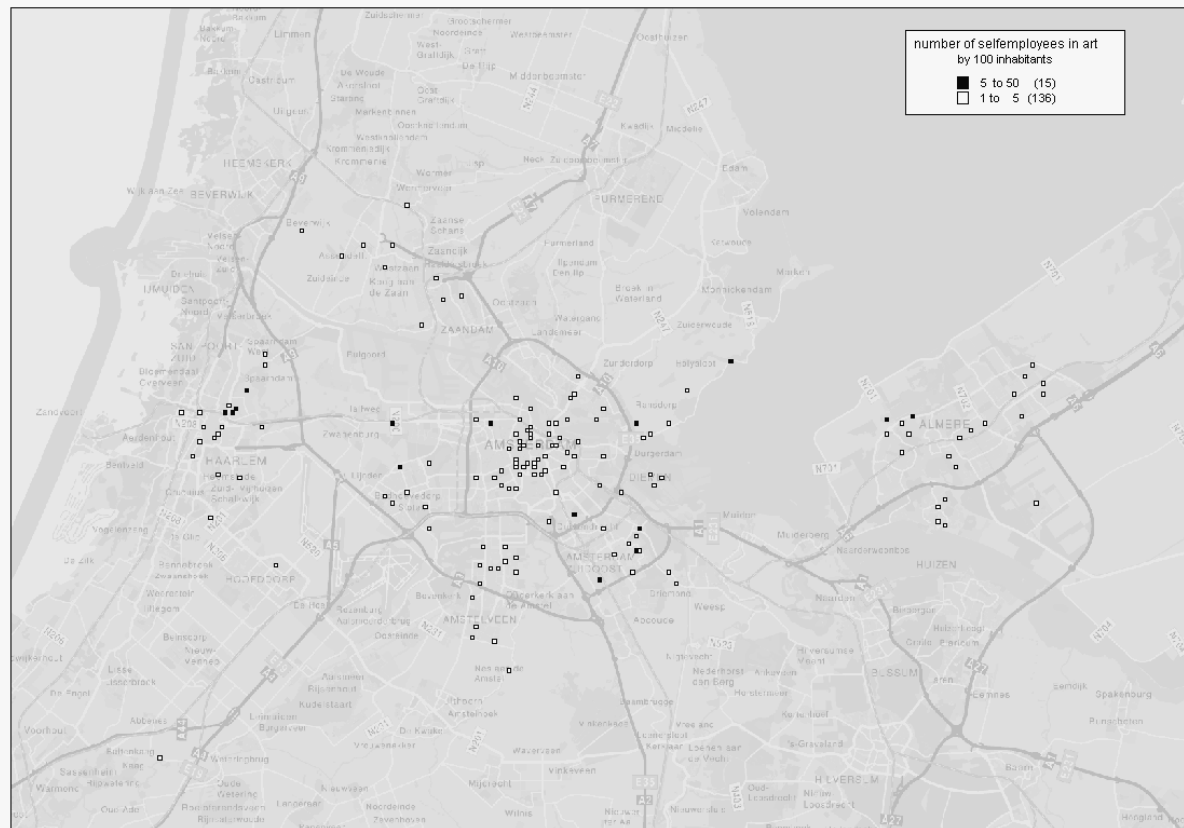


Figure 3 Concentrations of self-employed (a), employees in small firms (b) and employees in large firms (c) in the arts sector

(a)



(b)

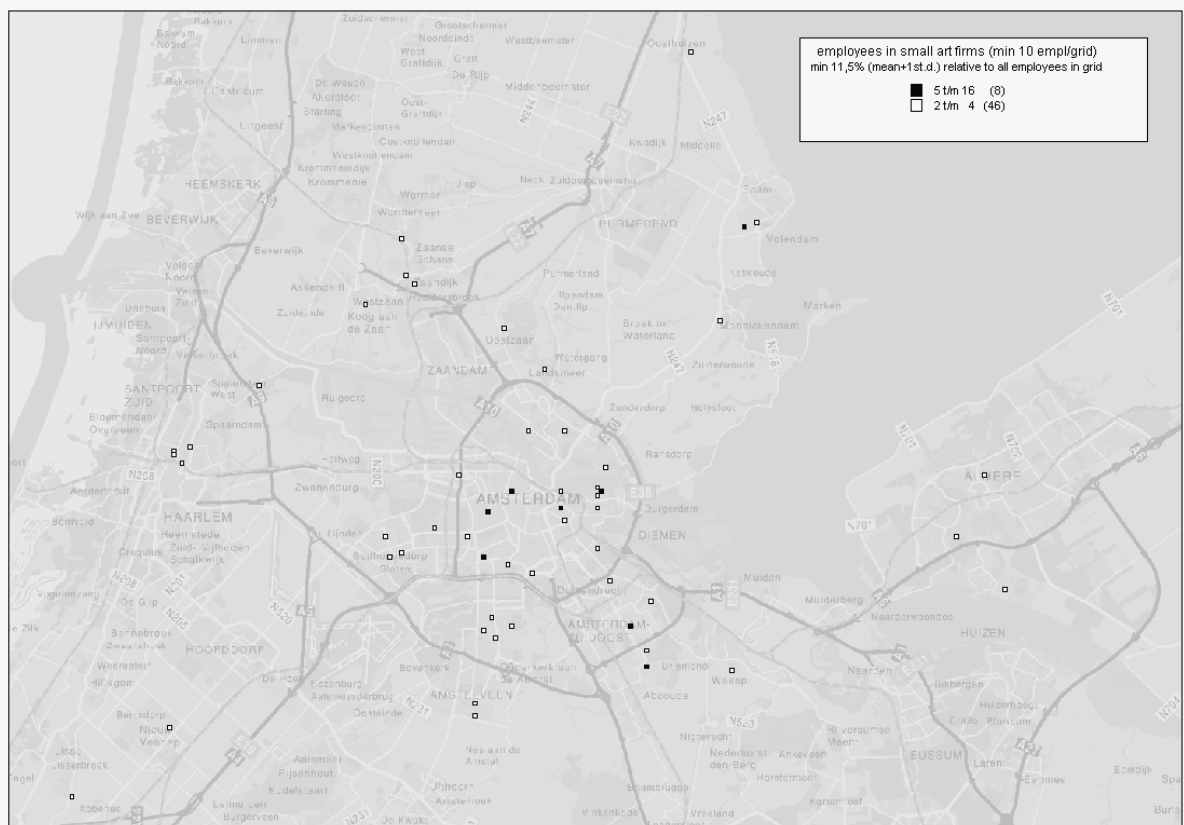


Figure 3 Concentrations of self-employed (a), employees in small firms (b) and employees in large firms (c) in the arts sector (continued)  
(c)

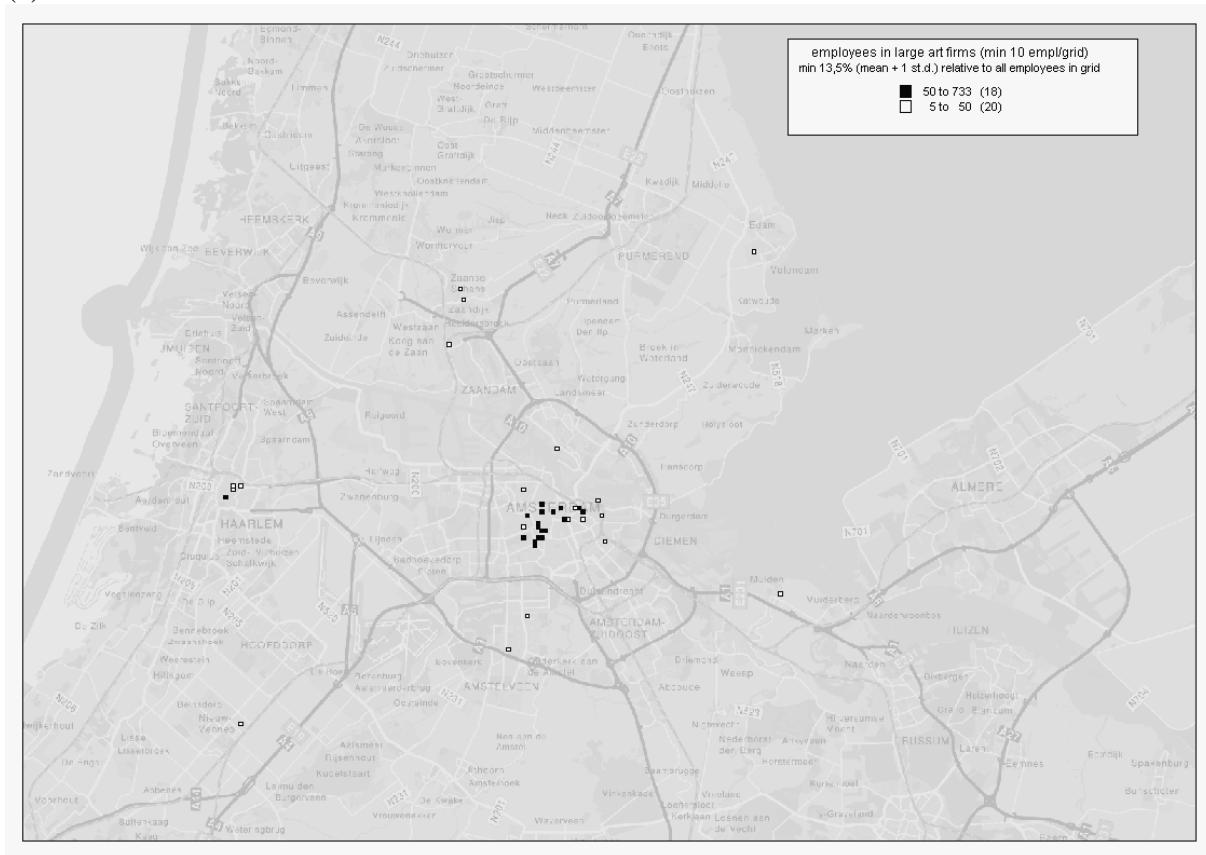


Figure 4 Concentrations of self-employed (a), employees in small firms (b) and employees in large firms (c) in architecture

(a)



(b)



Figure 4 Concentrations of self-employed (a), employees in small firms (b) and employees in large firms (c) in architecture (continued)  
(c)

