The struggle to belong
Dealing with diversity in 21st century urban settings.

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'Working in the neighbourhood. Shifting patterns of economic activities in residential neighbourhoods in five Dutch cities'

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1. Introduction

David Ley described a tendency in the 'glocalization' debate towards ontological dualism: 'At its simplest the global is regarded as the place of sameness, and the local with places of difference' (Ley, 2004:154). Economic and technological processes are more often assigned to the global sphere whereas culture, meaning and politics are ascribed to the local sphere. Ley argues that this divide is oversimplified and that the local and the global are much more intertwined than is usually asserted. This paper focuses on how developments that are usually conceptualised as taking place on a global level have effects on urban economies and the local level of the neighbourhood. How do processes such as economic restructuring, deindustrialization and globalization materialize on the micro-scale of the neighbourhood? We might think of a web designer working from a fancy studio in the city centre as exemplary for the so called 'post-fordist' economy. But does this also hold for the consultant or building contractor who operate from their terrace house in a suburban neighbourhood? How many of these businesses are there really and how are they geographically dispersed in the city?

This paper looks at local production patterns, thus investigating how economic activities are inserted in the local sphere. It does so by analysing firm location patterns in neighbourhoods in five Dutch cities and it particularly looks at concentrations and types of economic activity. The Dutch urban context offers an interesting backdrop against which to investigate economic development trajectories at the neighbourhood level. This is because the Netherlands is one of many European countries where the neighbourhood has been the spatial scale at which local governments try to tackle typical urban social and economic problems (Welter, Trettin, & Neumann, 2008). The OECD reports of many countries that are aiming to revive distressed urban districts by investing in local entrepreneurship and shops and the local business climate (OECD, 2003). However, a thorough analysis of divergence in economic development patterns on neighbourhood level has been lacking. Secondly, the five Dutch cities in this study have very divergent aggregate outcomes in terms of economic performance. It is interesting to see how this translates to the neighbourhood level: what neighbourhoods are doing well and which ones are performing poor economically? Moreover, we're looking for neighbourhood characteristics that could explain these divergent patterns. The main research questions of this paper are: What is the relationship between neighbourhood characteristics and amount, growth & type of entrepreneurial activity?

And a second and related question, what is the relationship between neighbourhood characteristics and self-employment? By taking this approach this paper also aims to contribute to the debate about the importance of local context for economic development trajectories, and tries to address this debate on the lower scale level of the neighbourhood. Also, the debates on the urban environment as a place of production and consumption have largely bypassed the local level of the neighbourhood. In this paper it is argued that the neighbourhood is a useful level of analysis, not in the last place because it is often addressed by policy makers as a coherent community. First, we look at what changes have been taking place in urban economies in the last two decades.

2. The city as a place of production

Observers who argue that the world is becoming increasingly 'flat' state that 'traditional local production and market factors' such as land, natural resources and access to local markets have become less important due to changes in communication technology, transportation costs and the virtual disappearance of infrastructural differences between localities (Feiock, Jae Moon, & Park, 2008). In other words, businesses can settle and survive pretty much anywhere. Proponents of the 'spiky' world on the other hand, argue that although processes of globalization and technological development have increased capital mobility and locational freedom of certain sectors, the relevance of place and locality has not been abated. Most notably, cities stay important as hubs of economic activity (Ibid.) Porter argues that the characteristics of the post-industrial economy such as just-in-time delivery, local partnerships and appeals to customer service have made location 'more critical than ever before' (1995:58) Countries, regions and cities experience different economic development trajectories, showing divergent 'outcomes' of so-called 'world-flattening' processes. It has been recognized that cities play a major role in the international division of labour and that they are the site of sustainable economic growth and innovation (Kloosterman, 2009). Although the viewpoint of the authors of this article is in line with the view of scholars that see cities as increasingly important places of production, (Kloosterman & Lambregts, 2001; Musterd, Bontje, & Ostendorf, 2006; Storper, 1997), it remains to be seen how social and economic processes on the macro-level affect economic geographies *within* cities.

The transformation to what by many has been called a post-Fordist or post-industrial economic system where flexible, small-scale and design-intensive production have largely replaced economies of scale and 'just in case' production is argued to have profound effects on the composition of urban economies (Lash & Urry, 1994; Scott, 2000). Processes of externalization of production and vertical disintegration have contributed to the viability and survival chances of small- and medium sized businesses on both the high-end and the low-end of the production and consumption market. With these fundamental changes in the capitalist production system production processes are becoming more fragmented and economies more 'open' (Gertler, 1997). Firms are more often vertically disintegrated and rely heavily on inputs by other (smaller) firms (Sassen, 2001). The 'open' character of much economic activity, the interdependence between input- and output suppliers and the heavy reliance on knowledge and information exchange leads to increased opportunities for small enterprises that offer business services. Where the urban environment is a locus of knowledge and information intensive production that offers job- and business opportunities to the highly educated, at the same time it offers job- and business opportunities at the other end of the market for those that cater to the needs of these workers (Kloosterman, 2010). This short discussion shows how production processes have changed and how urban economies are increasingly dominated by small firms, but the main focus of this paper is what spatial consequences this has within cities. In order to answer this question we have to delve deeper into literatures that inform localized economic development trajectories.

3. Economic activity in the urban context

As was stated in the previous section, structural changes in the capitalist production system seem to have created a two-faced urban economy. On the one hand, there is a surge of economic activity that relies on technology- and information intensive modes of production and a high-skilled labour force. The outcome often being design-intensive and innovative products and services. On the other hand, economic activity that is mainly service oriented (with an emphasis on consumer services), relies on low-qualified workers and is mainly low in added value but labour -intensive. Although different in nature, the urban environment and the physical proximity to other businesses and markets it allows are essential for both kind of businesses.

It can be said that changes in the *mode of production* – from large-scale manufacturing and capital intensive production to flexible small scale production and services – have effects on the *factors of production*. Whereas starting a business in the mainly industrial economy meant that large investments had to be made in 'traditional' production factors such as raw materials, capital and labour, in the post-industrial economy many sectors have opened up to small ventures that do not possess large start-up capital and resources (Kloosterman, 2010). These developments are also connected to the increase in numbers of self-employed and home-based businesses. Although research on this phenomenon is still sparse, studies point towards rising numbers of these kinds of businesses in the Netherlands [1] and internationally (Mackloet, Schutjens, & Korteweg, 2006b). In the UK for instance, home based businesses account for 36% of all businesses (Mason, Carter, & Tagg, 2008).

The type of economic activity that is on the rise in urban environments thus seems to favour small- and medium sized businesses. At the same time, a shift might take place as to where these economic activities take place. Inner city districts have been re-gaining ground as places of production after a period of decline in which much economic activity relocated to office and business parks (Porter, 1995). Instead of locating in office and business parks or near highways entering the city, the small and medium sized enterprises are settling in the city districts, and increasingly in neighbourhoods that are largely residential (Musterd et al., 2006). The Dutch Chamber of Commerce data of the 5 Dutch cities in this study show that on average, 44% of business establishments is located in urban residential districts[2]. International studies also show a increased tendency of businesses to settle in residential and suburban environments (Fong, Luk, & Ooka, 2005) (Graham & Marvin, 2001).

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[1] The Dutch central bureau of statistics keeps track of the number of businesses with 1employee. This can serve as an approximation of the number of self-employed in the Netherlands. This number has been on the rise: from 355.575 in 2006 to 495.215 in 2010, an increase of almost 40% (source: CBS).

[2] This is an average calculated from the share of all business establishments in the city that is located in urban residential districts in 5 Dutch cities: Amsterdam 56%, Utrecht 53%, Zoetermeer 61%, Dordrecht 31% and Leiden 21%. Urban residential districts are defined as neighbourhoods that have more than 500 residential addresses and do not have a designated industrial estate within them nor are designated as 'city centre' (PBL 2010).

This economic 'resurgence'[3] of the city has gone hand in hand with renewed popularity of cities as a residential location and thereby reviving local demand. After a period of suburbanization starting from the 1960s into the 1980s (Ley, 1996), population groups that first flocked into the city were migrants, creating ethnically diverse neighbourhoods where they co-existed with stragglers who failed or refused to leave for the suburbs. From the 1980s onwards, the city has also increased in popularity for groups of affluent 'new city dwellers' (Reijndorp, 2004) with and without children. With the 'dirty' manufacturing industry removed from its districts and government investments in upgrading of deteriorated housing, the city became more attractive as a living environment for higher-income people (Storper & Manville, 2006). They have come to live in what are now mostly gentrified neighbourhoods, where housing prices are high and the offer of urban amenities is abundant. Rising population numbers and increasing diversity have aided the importance of the city as a local consumers' market, both for high-end and low-end goods and services as well as for products and services tailored for specific ethnic groups (Kloosterman & Rath, 2001a).

Overall, an interesting reconfiguration of urban economies is materializing: an ascendance of small and medium sized enterprises with an increasing share of self-employed and home-based business is settling in urban neighbourhoods, a large share of which is located in mainly residential neighbourhoods. These neighbourhoods have regained importance as local markets due to rising population numbers. Not much scientific attention has been given to economic activity on the micro-level of city neighbourhoods, although related subjects such as commercial gentrification and geographies of retailing are gaining in advertence (see for instance (Zukin, 2009aa), (Zukin, 2009bb), (Deener, 2007), (Bridge & Dowling, 2001)). There is a general neglect of the level of the neighbourhood in economic development research, which usually takes the nation-state or the region as its unit of analysis (Welter et al., 2008). Taking the nation-state or region as a level of analysis hampers our view of how macro-developments reverberate at the micro level. Inversely, insights on developments on the micro level could increase our understanding of macro-level developments. The nation-state has been criticized as the primary unit of analysis in geographic and economic

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[3] Storper argues that it is doubtful how much resurgence and decline cities have actually witnessed in the last few decades (Storper & Manville, 2006)

development research and sub-national scales as levels of analysis have been put on the research agenda (Sheppard, 2002). This criticism has been only partly effective, resulting in more attention for regions and metropolitan areas, but not so much for smaller scale levels such as the level of the neighbourhood.

The neighbourhood has received more attention from a policy perspective, as policy makers see neighbourhoods and city districts as an appropriate level to tackle social and economic problems (Welter et al., 2008). This has also been the case in the Netherlands, where deprived neighbourhoods are being upgraded by investments in the physical, the social and the economic sphere of the neighbourhood[4]. Investing in the physical environment of the neighbourhood is not a new phenomenon; the Dutch government has been restructuring its city districts from the 1970s onwards through urban renewal programs. For a short period of time during the second half of the 1980s there was some policy attention for reviving economic functions in city districts (van den Berg, Bregman, & Chao-Duivis, 2007). Nevertheless, the integral approach that combines physical, social and economic policy interventions on the neighbourhood level is relatively new. With the economic policies in this integral approach local governments try to improve the business climates in neighbourhoods and ideally, transform them into economic incubators. They do so for instance by investing in business accommodation, public space and organising courses for (starting) entrepreneurs. A popular approach for attracting starting entrepreneurs is to provide low-cost business space in former school or other public buildings or housing designated for renovation or demolition. Investments are also made in forging local business networks by creating meeting places and establishing business advisory services (Welter et al., 2008). However, a thorough analysis of economic development patterns on the neighbourhood level has been lacking. Does it make sense to invest heavily in the business climate of these areas and not in others? Are deprived urban areas also deprived of economic activity[5]? The counterfactual could also be thought of: these neighbourhoods might prove adequate sites for starting entrepreneurs because they might offer low-cost accommodation close

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[4] The 'three pillars' of the *'Actieplan Krachtwijken'* (powerful districts policy) implemented by the Dutch Ministry of Housing, Neighbourhoods and Integration from 2007 onwards. In 2010 the policy was transferred to the Ministry of Domestic Affairs.

[5] That is, viable and legal economic activity.

to the city centre. As was observed by Kloosterman: 'businesses are not started in a socio-economic vacuum but in concrete, time and place specific contexts' (Kloosterman, 2010:26). The next paragraph examines what some of the existing literature tells us about where businesses get started and how (local) context may play a role in this process.

4. Theories of entrepreneurship

In empirical research and in theoretical approaches to entrepreneurship the majority of the studies focus on the supply-side of entrepreneurship; on the perspective of the entrepreneur or the firm (Kloosterman & Rath, 2001a). Divergent spatial patterns of entrepreneurship are explained by investigating factors that influence the likelihood of starting a business. In this view, particular personal characteristics and localities are seen as more beneficial to entrepreneurial activity than others. Within this line of research we can distinguish on the one hand studies that focus on the individual level of the entrepreneur and on the other hand studies that focus on more structural elements that influence entrepreneurship. Studies of the former kind have found for instance that work experience and educational attainment are positively related to entrepreneurship (Evans & Leighton, 1989). Other studies have investigated the relationship between personality or ethnic origin and entrepreneurship (Wang & Li, 2007). Arguments of the structural kind emphasize contextual factors and constraints that influence (nascent) entrepreneurs and make certain localities more attractive than others to start a business. These studies emphasize for instance the institutional arrangements and regulatory environment (Hindle, 2010) while others highlight the importance of transportation costs, industrial intensity and levels of immigration (Lee, Florida, & Acs, 2004). The study by Lee, Florida and Acs finds that the level of creativity and diversity that characterise a region are positively related to entrepreneurship. Creativity is measured in the Florida-tradition by the number of 'artistically creative people' in a region while diversity is measured by the 'Melting-pot index' and the 'Gay-index'. Other variables that they include are industrial intensity and establishment size, the latter is found to be negatively related to entrepreneurial activity because entry barriers will be higher if average firm size is large (Lee et al., 2004).

All these studies examine push- and pull factors that drive or attract people into self-employment or entrepreneurial activity. Some of these factors play out on the individual level and some are of a structural nature. One factor that is often discussed in this respect is human capital. For immigrant entrepreneurs, a lack of human capital is often seen as a push factor into entrepreneurship and fits into the 'disadvantage theory'. This theory explains the prevalence of entrepreneurship among immigrants as an alternative path to an excluding labour-market (Hackler, D. and M. Mayer, 2008). For non-immigrant groups human capital is thought to be a pull-factor towards self-employment and entrepreneurship, as in the study by Evans and Leighton (1989).

These studies are very interesting and have contributed greatly to gaining insight into what kindles entrepreneurship. However, most of these studies tend to neglect the demand-side of entrepreneurship and firm establishment. They fail to study the markets and local demands that these entrepreneurs and firms are aiming to serve. To overcome this incompleteness Rath and Kloosterman have introduced the mixed embeddedness approach (Kloosterman & Rath, 2001bA) (Kloosterman & Rath, 2001aB) (Kloosterman, 2010). This approach forges a link between arguments on the supply-side of entrepreneurship and characteristics of local markets. Rath and Kloosterman define a market as 'a concrete economic locus where entrepreneurs, combining different resources in a specific way (adding value) , have to sell their products to clients' (p.192) Markets form the main ingredient of a local opportunity structure, that harnesses the viability of new business or firm growth. Rath and Kloosterman apply their theory of mixed embeddedness predominantly to immigrant entrepreneurs, but the main arguments can also be applied to entrepreneurs in the urban environment in general. Kloosterman (2010) identifies human capital as an important factor that shapes the accessibility of markets. In relation to the two-faced urban economy that was described in the previous section, the human capital threshold to start a business in the information and technology-intensive sectors is high, while it is low in most consumer services and retail businesses. Kloosterman argues that high-skilled entrepreneurs therefore will have access to the expanding markets that are so characteristic of the post-industrial (urban) economy, and consequently, that many new businesses will be started in these sectors. Low-skilled entrepreneurs will have access to two kinds of markets: a market that is characterised by 'vacancy-chain' businesses, where established entrepreneurs leave highly competitive and stagnant sectors such as small-scale

retailing and cheap restaurants. On the other hand, a market for personal services that is still growing and often innovative, catering to the (changing) needs of urban households. Kloosterman also discusses other factors that influence accessibility of markets such as social capital and the local regulatory environment. However, we'll leave these behind for now and draw two major lessons from the mixed embeddedness approach: to look at local markets and to account for human capital as an important factor determining the accessibility to these markets. In effect, human capital (or educational attainment) is conceptualised as a factor that operates on the supply-side of entrepreneurship. At the same time, the opposite can be considered: human capital can also be conceptualised as a characteristic of the local market, indicating a specific kind of demand for products and services.

In this paper I look at how individual as well as structural characteristics play a role in local economic activity. The neighbourhood is conceptualised as the 'locus' of economic activity as it was described by Rath and Kloosterman; a place of production as well as consumption. Thereby accounting for both the supply- and the demand side of entrepreneurship. Various social and economic characteristics of neighbourhoods are considered and how these relate to the amount and type of economic activity that is present in a neighbourhood. In terms of consumption, these characteristics influence the consumer purchasing power in a neighbourhood and typify groups of clients of local business. However, a part of the business population in a neighbourhood will not cater to local markets, and produces for a national or international market instead. The products and services of these businesses are not (only) sold to local markets but have a wider scope due to their specificity or unique nature. Business services for instance can also be thought of as not catering (exclusively) to a local market. However, neighbourhood characteristics might still influence the presence of these kinds of businesses for several reasons: first, prices of office and business accommodation are related to the social-economic characteristics of neighbourhoods. Second, the image of a neighbourhood might matter more to entrepreneurs in these businesses since status and appearance may be of importance. Thirdly, for the category of the self-employed it can be argued that they start a business from home. If the location of the home becomes the business location, neighbourhood characteristics can be thought to influence the type of business found in a neighbourhood. If it is the case that neighbourhood characteristics are related to the amount and type of businesses we find in a specific

locality, this might offer a useful starting point for policy makers and researchers in thinking about and trying to shape neighbourhood economies.

5. Method and data

In this study the definition of the neighbourhood as it was postulated by Galster (2001) will be used: 'Neighbourhood is the bundle of spatially based attributes associated with clusters of residences, sometimes in conjunction with other land uses' ((Galster, 2001:2112). These spatially based attributes can be thought of as structural, infrastructural, demographic, economic, environmental, political, sentimental and social-interactive in nature. This is a holistic conceptualization of the neighbourhood, arguing that all these attributes matter and that they together constitute a neighbourhood because they are 'spatially based' in a particular location (ibid: 2113). Ideally, one would take up all these spatially based attributes in an analysis of the neighbourhood, because only then a complete picture of a neighbourhood can be drawn. However, this would be a greatly complex and entangled picture of the neighbourhood where every attribute is heavily influenced by all the others. While acknowledging the complexity of spatially bounding the entity of the neighbourhood, this paper does make use of the level of analysis of the neighbourhood by selecting some of its spatially based attributes and see how they relate to the economic activity in that neighbourhood. Since previous empirical research is sparse, this effort can be considered exploratory, trying to build a model that explains how attributes of a neighbourhood influence the economic activity that is present there. Multiple OLS regression is used to estimate the effects of neighbourhood attributes on the amount and type of businesses in the neighbourhood.

For the analysis detailed information on 50 neighbourhoods dispersed over 5 Dutch cities is used. Only urban neighbourhoods that can be characterized as 'purely residential'[6] are taken up in the analysis, because inner city districts and neighbourhoods with a designated industrial estate are assumed to have specific business dynamics of their own. The 5 cities are Amsterdam, Dordrecht, Leiden, Utrecht

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[6] The selection of neighbourhoods is made on the basis of postal code areas. First, only areas with more than 500 residential addresses are selected. This group is divided into 3 categories: neighbourhoods with a city centre function, neighbourhoods that have an industrial site within them and the residue is categorized as 'purely' residential neighbourhoods ((PBL, 2010))

and Zoetermeer. The cities of Zoetermeer, Dordrecht and Leiden are medium sized with around 120.000 inhabitants whilst Amsterdam and Utrecht are larger with respectively 767.000 and 306.000 inhabitants in 2010. All cities belong to the Randstad region, the conurbation in the West of the Netherlands, which is often considered to function as one regional economy. These cities offer an interesting array of Dutch urban environments differing in size, physical structure, age, economic background and growth rates. Zoetermeer can be characterised as a new-town and as a planned centre of urban growth while Amsterdam, Utrecht, Dordrecht and Leiden have a longer history strongly defined by trade and handicraft. Moreover, Dordrecht and Zoetermeer have no universities, while the other cities in the selection are educational nodes of the Randstad. Data about the businesses in the neighbourhood consist of Chamber of Commerce data (LISA), listing all business establishments in these five cities for the period 1999-2008. The calculation excludes schools, hospitals and some public sectors that do not produce for a 'market'.

Since the analysis is looking at residential neighbourhoods, the model will mainly include those spatial attributes that typify the resident population of these neighbourhoods. The average income in a neighbourhood is used as an indicator of local consumer purchasing power. When we take average income as an indicator of local consumer purchasing power, one would expect that more businesses can survive in neighbourhoods that have a high average income. Moreover, in neighbourhoods with high average income one could expect a local demand for upscale, high-end products. On the other hand, a high average income of the neighbourhood could also be an indication of a one-sided economy and high accommodation costs, where only particular kinds of businesses can thrive and growth is therefore limited. In line with a commercial-gentrification view it could also be argued that innovative and creative firms are not located in the richest neighbourhoods, but in upcoming neighbourhoods. In addition, the average growth in real estate value (1999-2008) is used as an indicator of a more long-term development of the neighbourhood. Exorbitant growth in real-estate prices indicates increased popularity of a neighbourhood and signals an upgrading of the social-economic status of its inhabitants. This in turn might have an effect on the amount and types of business located there. The inclusion of the percentage of highly educated and the percentage of non-western immigrants in the neighbourhood is derived from the literature discussed in section 4. As discussed there, according to some studies non-

western immigrants are 'pushed' into starting a business due to an excluding labour market. Two assumptions are being made here: immigrants will either start a business in their own neighbourhood of residence, or they will start a business in a neighbourhood with a large share of immigrants due to the market they aim to serve, namely a market that for a large part consists of immigrants. According to the study done by Evans (1989) the highly educated will also be more likely to operate businesses, and according to Kloosterman (2010) they are likely to operate specific types of businesses. As an indicator of a local consumer market, educational attainment is comparable to average income, signaling a market for upscale, high-end products. Table 1 provides descriptive statistics for the variables used.

Table 1: Descriptive Statistics					
Variable name	N	Minimum	Maximum	Mean	St. Deviation
Average income	50	13,80	38,80	20,09	5,330
Growth real estate value (%) 99-08	50	92,00	494,00	187,02	83,934
Growth in average income (%) 99-08	50	9,00	90,00	27,54	15,721
% non-western immigrants	50	2,00	65,00	17,60	14,311
% highly educated	50	21,00	70,90	39,15	16,014
FI_08 (firms to inhabitants index)	50	,00	22,24	4,70	4,590
Growth FI_99_08	48	-2,19	4,69	1,13	1,191
% high value-added firms as share of total firms	49	15,48	84,73	46,29	17,906
% innovative firms as share of total firms	49	,00	31,82	14,10	6,658
% creative firms as share of total firms	49	,00	32,43	7,42	6,502
% self employed as share of total firms	49	26,30	88,00	67,24	13,223
Valid N (listwise)	47				

Various dependent variables have been used to model different dimensions of the neighbourhood economy. A main outcome of interest is the number of businesses in a neighbourhood corrected for the number of inhabitants (FI_08: number of firms per 100 inhabitants in 2008). The development of this index over the past decade is also taken into account (Growth FI 1999-2008) to see to what extent the neighbourhood economy has experienced growth or decline. In addition, high value-added, innovative and creative firms as a share of the total number of firms in a neighbourhood are examined.

The last variable measures the self-employed as a share of the total number of businesses in a neighbourhood. All the dependent variables are measured for the year 2008 except for the FI-growth variable that measures the change between 1999 and 2008. See appendix A for a detailed overview of the categorization of businesses used for these variables[7]. From table 1 we can learn that there is a lot of variation in the number of firms in a neighbourhood. In some neighbourhoods there is a complete lack of a local economy: none or hardly any businesses can be found there. Growth figures also vary greatly with large growth numbers in some neighbourhoods to decline in others[8]. We can also see that the share of high value-added firms varies more over neighbourhoods than the share of innovative or creative firms.

6. Results

Before we turn to the models, let's have a look at the distribution of the different types of firms in the 5 cities. Figure 1 shows us the share of firms active in service sectors, high-value added sectors, innovative sectors and creative sectors. We immediately see that the share of service firms (firms operating in personal and business services sectors) is much larger in the bigger cities.

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[7] All categorizations are made with the 'standard business index' of 2008 (based on the UN international standard industrial classification of all economic activities, ISIC)

[8] Arguably, a growing or declining population within a neighbourhood also influences the F:I growth rates. Still, we believe that a declining population would lead to a smaller market, and more importantly, less potential for home based firms and entrepreneurs within the neighbourhood. This in turn should imply a decrease in the number of firms. If this is not the case, we assume that a higher F:I rate caused by decline in numbers of inhabitants generally reflects strong local economic activity.

Figure 1: Distribution of different types of firms across 5 cities in 2008 (source: LISA)
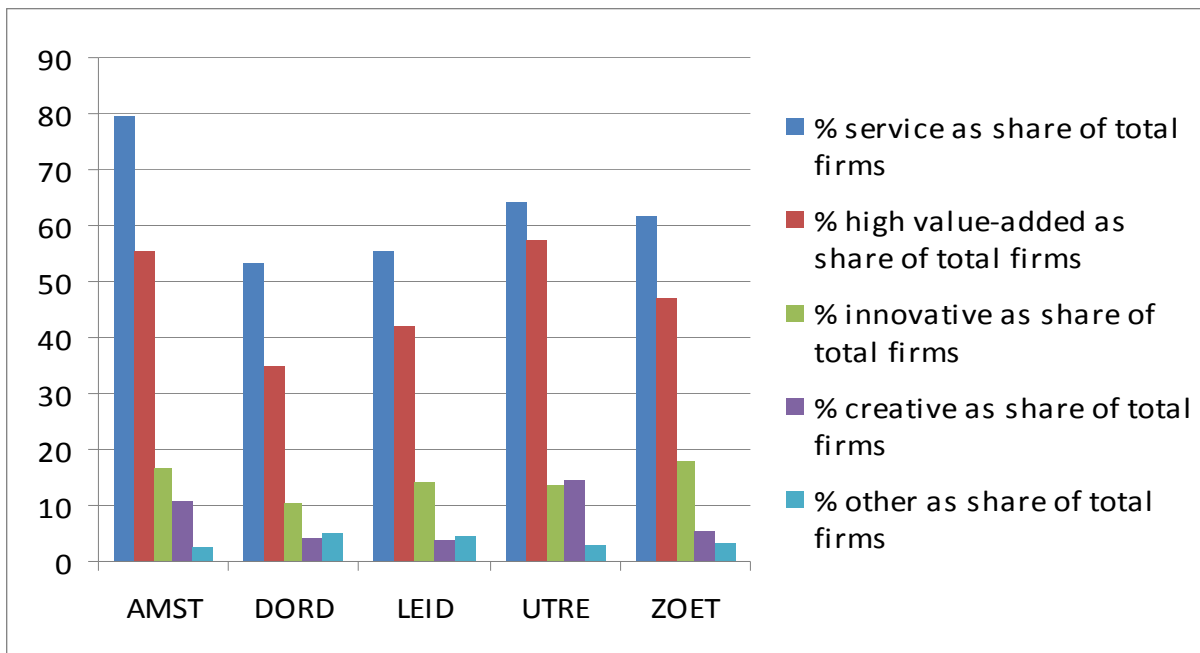
The share of high-value added firms is large in all cities, but from table 1 it can be observed that this share varies greatly across neighbourhoods. Remarkably, the share of innovative firms in the new-town Zoetermeer is slightly larger (18,12 %) than in capital city Amsterdam (16,86 %). The bigger cities Amsterdam and Utrecht clearly attract more firms operating in the creative sector. The share of 'other' mainly represents industrial and manufacturing sectors, and we see that in all cities, this share is now very small. This distribution of economic activity across the various highlighted sectors is illustrative of the shift to (in search of a better term) the 'post-fordist' economy. High shares of firms operating in personal and business services, with especially in the bigger cities a large share firms that can be categorizes as being high-value added. Dordrecht (DORD) and Leiden (LEID) have an economy that seems to be shaped somewhat differently compared to the other cities. A smaller share of service and high-value added firms, and also the creative sector is quite small there. Leiden is performing well in its share of innovative firms compared to Dordrecht.

The results of the regression analysis are shown in table 2. Seven different models have been constructed with seven different dependent variables all listed in table 1.

Table 2: Results of regression analysis for first six dependent variables

	Model	1	2	3	4	5	6
			FI_growth 1999-2008	*FI_growth 1999-2008 Model 2*	*% High value added*		
		FI_08				*% Innovative*	*% Creative*
Bèta-coefficients	Constant	-8.28	-1.15	-1.58	-8.32	-4.71	3.29
	Average Income	.398**	.183		.623***	.761***	-.218
	Growth real estate value (%) 99-08	.334**	.104	.21	-.036	-.152	.133
	% highly educated	.181	.382*	.137	.314**	.020	.525**
	% non-Western Immigrants	.117	.079	.172	-.012	.176	-.102
	Growth in average income (%) 99-08			-.271			
	% high value added			.683***			
	R^2	.45	.28	.49	.68	.46	.27
	Adjusted R^2	.40	.21	.44	.65	.41	.20
	N	50	47	47	49	49	49

*** $p < .001$ **$p < .01$ *$p < .05$

Model 1 shows that a large share of the variation (45%) in the number of firms in a neighbourhood can be explained by the average income in a neighbourhood and the growth of real estate values over the past decade. This indicates that local markets are of great importance, as I expected them to be. On the other hand, educational attainment and the share of non-western immigrants do not significantly affect the number of firms in a neighbourhood. When the same variables are applied for predicting the growth in FI_index over the period 1999-2008 it turns out to be considerably less useful and the bèta-coefficients seem to be unable to predict growth in the number of firms (with an explained variance of 28%). The only significant indicator seems to be the % of highly educated in a neighbourhood. This can provide some support for the proposition that the highly educated are more likely to start a business and hence fuel growth of firms in these neighbourhoods. We'll have to see how this parameter behaves in the other models to draw more informed conclusions. When the % of high-value added firms is added as a predictor to the model[9], we see that this variable has a significant effect on the outcome of the growth in the FI_index. It turns out that in neighbourhoods with a large share of high value-added businesses, the number of firms has increased more

[9] The average income-predictor is replaced in this model by average income growth to give a more dynamic view of how income has developed in the same period.

dramatically over the last decade. Also, looking at the growth in average income in the same period this model shows that the growth in firms has not necessarily taken place in neighbourhoods where income has increased the most over the past decade. Although not significant, the coefficient for the average income growth rather shows a negative effect. So although higher amounts of firms are found in richer neighbourhoods (Model 1), these are not necessarily the neighbourhoods where the most growth in businesses has taken place over the last ten years. The explanatory power of the original model considerably increases when it is applied to the share of high-value added firms in a neighbourhood. Average income and education level are important predictors of the amount of high-value added firms in the neighbourhood. This can signal several things: When the neighbourhood is considered a site of consumption it is an indication that neighbourhoods with a high average income and high average education levels provide fertile markets for firms operating in high-end sectors. However, as was said earlier, it cannot be assumed that all firms produce for a local market. High average incomes are probably also an indication of high prices for business accommodation and therefore these neighbourhoods will show a less diverse neighbourhood economy, lopsided to the high-end of the market.

When we look at the neighbourhood from a supply-side perspective the model can also signal that people with high educational attainment are more likely to start a business in high-end sectors. This would correspond with the statement made by Kloosterman (2010) that certain markets are more easily accessible for entrepreneurs with high levels of human capital[10]. In any case, these two variables (average income and educational attainment) together explain 68% of the variation in the share of high value-added firms in the neighbourhood. For the share of creative firms in a neighbourhood, more creative firms are located in neighbourhoods with high shares of highly educated residents. In this case, there must be much more going on than this model can account for, since this model only explains 27% of the variation in shares of creative firms. As for innovative firms, we see that average income is again very important in explaining the share of innovative firms in a neighbourhood. Let's now turn to the final model and look at the share of self-employed in the neighbourhood.

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[10] In this case, one would have to make the assumption that businesses are started from the home or close to the home in the own neighbourhood. Based on earlier research (Mackloet, Schutjens, & Korteweg, 2006a) this assumption is not very hard to make.

Table 3: Regression results for model 7

	Model	7
		self-employed as % of total firms
Bèta-coefficients	Constant	58,56
	% non-western immigrants	-.191
	% highly educated	-.326*
	% high value added	.240
	% Creative	.498**
	R^2	.34
	Adjusted R^2	.28
	N	49

**$p < .01$ *$p < .10$

In accordance with the literature (push and pull factors) model 7 investigates whether non-western immigrants are more likely to be self-employed. Again, the proposition can also be made that more businesses in a neighbourhood with a large share of immigrants are started due to a market these businesses aim to serve, namely a market that for a large part consists of immigrants. However, the parameter is negative (although not significantly so), and seems to indicate the opposite. So in neighbourhoods with large shares of non-western immigrants, self-employed businesses are underrepresented. Moreover, these findings suggest that education level is not positively related to the amount of self-employed in a neighbourhood. This supplies contradictory evidence to the statement that education attainment is an explanatory factor on the supply side of entrepreneurship. It seems to indicate that the level of education is more of a consumption-side indicator (local market) rather than a production-side indicator. However, the type of businesses can explain the phenomenon of the self-employed somewhat better. Especially in neighbourhoods with a high share of creative firms, there are more self-employed present. It is plausible that this strong relationship is partly due to creative occupations being more suitable to be performed on a self-employed basis.

7. Conclusion and discussion

From the foregoing we can conclude that the conceptualization of the neighbourhood as a local market is useful, although it brings some notable difficulties with it. The neighbourhood is at the same time a place of production and consumption. This can be taken literally, because neighbourhood residents can be local producers and consumers. A neighbourhood also possesses certain attributes that can make it more or less suitable to operate a business. Neighbourhoods that are providing fruitful grounds for (small)

businesses can attract more (starting) businesses than other neighbourhoods. In search of what attributes can constitute the 'locus' of economic activity, our theoretical guidance comes from previous research. Empirical research on neighbourhood economies is sparse, so the main leads on what variables to include come from entrepreneurship research. It turns out that the average income in a neighbourhood is a good predictor of the amount and type of businesses you can find there. Although I want to be as careful as one needs to be with interpreting causal relations, it is likely that 'richer' neighbourhoods have a local market with high consumer purchasing power, making it easier to reach a 'critical threshold' for entrepreneurs. High value-added businesses and innovative business operate on the high-end side of the market. These businesses are located in 'richer' neighbourhoods and this means that either they cater to a local market, or that they attach (symbolic) value to operating from these kinds of neighbourhoods, or both. Growth in the number of businesses however, does not necessarily take place in these richer neighbourhoods. The composition of neighbourhood economy seems more important in this respect, with higher growth numbers in neighbourhoods with large shares of high value-added businesses. The role of educational attainment of neighbourhood residents is ambivalent and additional research is needed to unravel its role in the neighbourhood economy. It was expected that educational attainment was a predictor of self-employment in the neighbourhood, but this turns out not to be the case. Educational attainment could prove to have a different relationship to self-employment, or self-employment could be less 'local' than assumed. In concordance, we need to find out if most businesses get started close to home, so whether the neighbourhood works as a supplier of local entrepreneurship. In the light of these findings, policies allocating local resources to stimulate entrepreneurship in disadvantaged neighbourhoods seem justifiable. However, if a local market is not capable of absorbing these businesses in terms of consumer power, these efforts might seem fruitless in the long term. This paper has tried to make a contribution to identify neighbourhood attributes that can explain viability and make-up of neighbourhood economies. It has succeeded in some respects, but it has also showed that much of the dynamics of local economies cannot be brought to light with these models and that we need more in-depth research about what moves the neighbourhood economy and local entrepreneurs.

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Appendix A

Category *'other'* (figure 1) consists of:
- Extraction of natural gas, minerals and oil, sand, gravel and clay.
- Industry: production of foodstuffs and food, tobacco, clothes, wood and paper
- Industry: manufacturing of chemicals, synthetic fibers, metals and electronics
- Industry: manufacturing of cars and furniture
-

High value-added sectors are high value added in terms of human capital. Distributed in the following sub-sectors:

Construction:
- real estate development / project planning

Retail:
- pharmacies

Information and communication:
- Telecommunication
- Services related to information technology

Financial services

Consultancy, research and specialist business services

Other business service

Education (for-profit)

Health services (for-profit)

Innovative sectors are selected sub-sectors of the high-value added sectors:
- publishing houses
- development of software , information technology consultancy
- specialist services related to accountancy and finance
- technical design, architecture and consultancy
- research & development
- Industrial design

Creative sectors are selected sub-sectors of the high-value added sectors (except for fabrication of jewelry)
- processing of precious stones and fabrication of jewelry
- production of film and television programs
- advertising agencies
- Arts and education in arts

(Innovative and creative are mutually exclusive categories)

Service sectors are basically all business and personal services (excluded are: logistics, transport, construction, retail & wholesale)