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## Darja Reuschke & Donald Houston

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## The importance of housing and neighbourhood resources for urban microbusinesses

Darja Reuschke<sup>a</sup> o and Donald Houston<sup>b</sup>

<sup>a</sup>Department of Geography and Sustainable Development, University of St Andrews, St Andrews, UK; <sup>b</sup>Department of Urban Studies, University of Glasgow, Glasgow, UK

#### **ABSTRACT**

Economic research has rarely considered the significance of the home and neighbourhood context of where business owners live for their business. Conversely, urban and neighbourhood research has overlooked how housing and neighbourhood shape business and entrepreneurship outcomes. This paper investigates the importance of housing and neighbourhood resources for microbusinesses using a random sample of microbusinesses in Edinburgh (UK) including those that are informal and homebased, and various characteristics of the neighbourhood in which the business owner lives were attached to the survey records. The data capture whether business owners have business premises outside their homes, and have used neighbourhood contacts, housing equity or space in the house for their business. In short, housing and neighbourhood resources are used by a large majority (82%) of microbusinesses. The findings challenge a number of common assumptions on the separation of commercial and residential functions, how neighbourhoods feature in the evolution of businesses, the nested conceptualization of home within a neighbourhood and on the nature of home-based businesses. It is concluded that multi-use (rather than mixed-use) neighbourhood planning would help foster more flexible and dynamic use of neighbourhoods and urban districts, although recognizing that this is a political issue.

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#### **KEYWORDS**

Home-based businesses; informal businesses; microbusinesses; neighbourhoods; housing; home

### 1. Introduction

Economic research and urban planning tend to conceptualize commercial and residential functions as physically and semantically separate. Corporate and individual actors, and firms and households, are seen as distinct and responding to different motivations – commercial and personal, respectively. While these separations may have some validity in relation to large firms, they are difficult to justify in relation to microbusinesses (those employing less than 10 people). Many microbusinesses consist of only one person and are home-based so that the business may be more aligned with the personal and residential sphere of the owner than accessing workers, suppliers and customers. Although microbusinesses have been largely overlooked in existing studies of local economic development,

they represented 92.7% of all businesses in the EU28 non-financial business sector in 2014/2015 (European Commission, 2015, p. 8). Microbusinesses also account for a significant proportion of turnover and employment (e.g. one-fifth of turnover and one-third of employment in the UK in 2013 (UK Department for Business, Innovation and Skills, 2014)). Microbusinesses are growing rapidly in number in many developed economies, reflecting a set of interrelated processes, including: expansion of Information and Communication Technology (ICT) capacity and take-up; labour-market deregulation, outsourcing; and 'downshifting' and lifestyle changes (Mason, Reuschke, Syrett, & van Ham, 2015; Sayers, 2010).

This paper focusses on the interface of the residential sphere of business owners and their businesses in an urban economy. We hypothesize that housing and neighbourhood resources ('local residential resources') are relevant for the functioning of urban microbusinesses. By resources, we mean features of housing or neighbourhoods that provide benefits or assets (e.g. physical space, security for loans, or business networks and advice and role models from neighbours). This concept of resources is akin to the notion of 'capitals' (Curley 2009).

Microbusinesses are often overlooked in economic research and planning because their productivity is low and many have no aspirations to grow. However, our focus is not on conventional economic 'success', but on the use of local residential resources by businesses. This is important from an economic point of view because almost all businesses are micro. Most businesses will start as micros and may use different resources than when more established. These 'different' resources may include to a substantial extent local residential resources, for example neighbourhood networks, a garage to store goods or housing equity to secure external finance. Many businesses are run from the owner's home, and have been labelled in an emerging literature as home-based businesses (Mason, Carter, & Tagg, 2011).

Some existing research points at the relevance of residential neighbourhoods for businesses and entrepreneurs' networks. However, existing research has not directly measured the 'use' of neighbourhood networks. Studies have measured the proximity of nascent to established entrepreneurs' residences (Andersson & Larsson, 2014) and the social capital of business owners (Schutjens & Völker, 2010), but no study has measured the 'use' of neighbours or contacts.

This paper seeks to reveal, for the first time, how important housing and neighbourhood resources are for microbusinesses. It asks, first, what use microbusiness owners make of housing and neighbourhood resources for their businesses and why? Second, it seeks to establish whether the presence of neighbourhood resources is associated with their use. Third, we test whether businesses that use housing resources are more likely to also use neighbourhood resources. These questions are investigated using a primary survey of microbusinesses in the City of Edinburgh (UK) where we asked business owners whether they have business premises outside their homes, have used neighbourhood contacts, housing equity or space in the house for their business.

Small-scale survey data are limited compared to larger government surveys and administrative sources. However, in our case this methodology allows us to investigate an underresearched type of business in relation to an under-researched topic. Most microbusinesses are not captured in business registers as they have no employees or are below tax thresholds. Moreover, existing business surveys or population surveys do not capture whether the business is run from the home, the use of informal networks and their spatiality or how business owners have secured a business loan. We used a random sample to select all kinds of microbusinesses including those that are informal and home-based. We attach to the survey records information on various characteristics of the neighbourhood in which the business owner lives. This approach allows empirical underpinning of a new perspective on business which links the functioning of business with neighbourhood and housing resources.

## 2. Housing and neighbourhoods as resources in existing literatures

Housing and neighbourhoods are believed to provide a range of benefits (Forrest, 2012). Links between these benefits and resources entrepreneurs use, however, are rare. Most business research investigates (with exceptions) the location of the business and not where the business owner lives.

The small business literature highlights the importance of financial resources. Personal savings are usually used at start-up and it is not until later that external finance becomes important (Berger & Udell, 1998). This evolution is often explained by limited access to financial resources faced by new businesses (Schwienbacher, 2015). The majority of the small business literature is relatively aspatial in its approach, and so the influence of housing and neighbourhoods on access to finance has consequently been largely overlooked. However, an exception is Williams and Williams (2011) who argue that entrepreneurs in deprived neighbourhoods face stronger barriers to financial resources.

Homeownership can provide collateral for accessing finance, but has been largely ignored in both business/entrepreneurship research and housing research (cf. Reuschke & Maclennan, 2014). Little is known about the extent to which microbusinesses make use of homes as external collateral across the business cycle. One could assume that particularly new businesses with limited access to external (bank) funding may use housing equity.

In housing research, homes are not widely conceived as assets beyond the financial wealth that homeownership can bring (although housing has been strongly linked with both the macro economy and various aspects of social wellbeing). In geography and planning, housing has been conceived in rather narrow terms as a social resource to households, linked predominantly to domestic and family aspects of people's lives (Butler & Hamnett, 2012). Moreover, housing is understood as a local resource, nested in a spatial hierarchy of home, neighbourhood, city, region and nation (Hanson & Pratt, 1995).

Yet many businesses are run from business owners' homes, including in cities and suburbs (Jain & Courvisanos, 2013; Sayers, 2010). Home-based entrepreneurs may use their home as a workplace or a base for their business while working at customers' premises. Research on home-based businesses suggests that using the home as business premises provides a cost-efficient and convenient way to run a business (Mason et al., 2011). Particularly for women with children running a business from home allows aligning employment with family responsibility (Loscocco & Smith-Hunter, 2004; Walker, Wang, & Redmond, 2008). However, most studies have only looked at whether businesses are based in the owner's home at one point in time so that little is known about how the home-business relationship evolves from start-up.

It could be expected that entrepreneurs have greater choice over housing and neighbourhood than others by virtue of higher level of education and occupational status (Solari, 2012). On the one hand, business owners may choose neighbourhoods that provide the resources they require to support their business. On the other hand, business owners may choose housing and neighbourhoods for the same family, social and amenity reasons as the wider population. There is, therefore, an ambiguity in the direction of causality between housing and neighbourhood resources and entrepreneurial activity. However, no matter for what reasons a dwelling and neighbourhood are chosen, once they are chosen, they may confer a particular package of positive externalities or resources.

The neighbourhood, or vicinity in which a dwelling is located, provides proximity to neighbours with distinct demographic and socio-economic characteristics, and access to local amenities and services and connectivity to the wider city or region (Rosenbaum, 1995). Neighbourhood literatures suggest that the main outcomes affected by living in deprived neighbourhoods include: limited networks and social capital (Curley, 2009; Wilson, 1987); educational attainment (Ludwig, Ladd, & Duncan, 2001); drug crime (DeLuca, Duncan, Mendenhall, & Keels, 2010); employment (Andersson, Burgess, & Lane, 2014; Ioannides & Loury, 2004) and health (Sloggett & Joshi, 1998). Despite paying little attention to the place where entrepreneurs live or grow up, the small business literature also notes that deprived neighbourhoods may lack role models and therefore hinder entrepreneurial activity (Welter, Trettin, & Neumann, 2008).

However, neighbourhoods do not deterministically or inevitably affect outcomes: how the neighbourhood is used is likely to influence the effects it has on outcomes (Van Ham & Feijten, 2008). While there is empirical evidence that social networks significantly increase business success and continuity (Brüderl & Preisendörfer, 1998), little is known about the spatial aspects of entrepreneurial networks. No study to our knowledge has investigated the 'use' of 'local' contacts in supporting entrepreneurial activity.

Andersson and Larsson (2014) found a positive relationship in Swedish neighbourhoods between the probability of an individual entering self-employment and living close to other self-employed people. Similarly, Davidsson and Honig (2003) measured whether people have friends or neighbours who run a business and found that this is associated with nascent entrepreneurship and starting a business. Both these studies interpret their findings as spillover or peer effects.

However, co-location could arise because of shared trajectories leading people in the same place (selection effect) to become self-employed rather than the implied spillover effect by virtue of spatial clustering. There is also the general problem as to how to recognize or observe entrepreneurs (who can act as role models for other residents)? Homebased business entrepreneurs who work at or from home and do not have business premises, for example, are 'hidden' entrepreneurs. They also most often do not employ staff so their presence in the neighbourhood is likely not to be distributed through the word of mouth of employees. Some urban research also highlights that localized social contacts are not formed by chance on the street but are formed through participation in institutions (Syrett & Sepulveda, 2011).

There is discussion in the entrepreneurship literature whether strong ties (family, friends and relatives) are more important as resources for entrepreneurs than weak ties to business partners, customers, suppliers, acquaintances, former employers and former co-workers. It is argued that spatial proximity is of greater importance for the maintenance of weak ties than for strong ties (Rutten, Westlund, & Boekema, 2010). The timing of networking is also relevant for businesses. Greve and Salaff (2003) found that entrepreneurs talk most with people about their business in the planning phase.

There is an assumption that women entrepreneurs rely more on local networks and that peers and role models close-by have a greater effect on women becoming entrepreneurs than men (Ekinsmyth, 2013; Hanson & Blake, 2009). However, no study to our knowledge measures spatial networks for men and women separately and how this impacts on businesses (cf. Hanson & Blake, 2009).

Diverse neighbourhoods are thought to help create atmosphere or 'buzz' that fosters creative entrepreneurs (Ho, 2009; Indergaard, 2009) and dense neighbourhoods promote inter-firm learning important in knowledge-intensive sectors (Spencer, 2015). In the creative and knowledge-intensive industries, entrepreneurs often do not need commercial premises for their business as services can be provided from home via the internet or at the customers' premises. Thus, creative workers may not only look for neighbourhoods with 'buzz' as a business location but also as a place to live. For them, the residential neighbourhood may be an important place to meet other 'knowledge' workers.

In summary, in relation to our first research question about who uses housing and neighbourhood resources and why, we expect that time is relevant in that local residential resources are more important at an early stage of the business evolution where businesses have a high demand for advice and limited access to external finance. Both housing and neighbourhood resources seem to be more important for women business owners than men due to family responsibilities. Neighbourhood resources are also likely to be more relevant for creative and knowledge-intensive entrepreneurs than in other industries due to the importance of tacit knowledge in these sectors.

In relation to our second research question about the presence of neighbourhood resources and their actual use we expect that living close to 'peers' (self-employed workers and professionals) will increase local interaction. Ambiguous findings and assumptions exist in the literature about the effects of disadvantaged neighbourhoods on entrepreneurship. On the one hand, deprived neighbourhoods have bonding social capital which could mean that entrepreneurs who live in deprived neighbourhoods are more likely to use neighbourhood resources. On the other hand, deprived neighbourhoods are seen as lacking social role models for would-be entrepreneurs. We empirically investigate the link between use of local neighbourhood contact for business purposes and the level of socio-economic deprivation.

The nested conceptualization of homes within neighbourhoods suggests that there is a positive association between housing resources and neighbourhood resources. Thus we expect in relation to our third research question that those who have used housing resources for their business are also more likely to have used neighbourhood resources. In particular, home-based businesses will use neighbourhood resources as they are most likely to have exposure to neighbourhood networks.

#### 3. Methods and data

## 3.1. Sample

We conducted a primary survey of microbusinesses using a standardized questionnaire. We selected the City of Edinburgh in the UK because it has a vibrant microbusiness sector. In order to select a random sample of microbusinesses in Edinburgh, business data were purchased from the commercial firm database ORBIS of the Bureau Van Dijk. ORBIS collects firm data in the UK from different sources. The advantage of the ORBIS database is that unregistered firms are included which form the majority of microbusinesses in the UK (UK Department for Business, Innovation and Skills, 2014). Purchased firm records included the postal address as well as information on the legal status of the firm, whether the firm is registered or not and number of employees, allowing us to identify microbusinesses.

The UK Department for Business, Innovation and Skills (2014) estimated that at the start of 2013 56% of private firms in the UK were unregistered. The sample was therefore stratified by firms' registration status to overcome the under-representation of unregistered businesses. Microbusinesses were defined for this research by the number of employees ranging from zero to nine.

The survey ran from December 2013 to February 2014. The questionnaire was sent by post to the business address to be completed by the owner, director or any partner of the business, Businesses could fill in the paper questionnaire or an online version. A total of 185 completed questionnaires were returned which corresponds to a response rate of 10%. Generally, response rates in business surveys are lower than in population surveys because of low survival rates, particularly of small businesses. Similar response rates were reported in studies that also included home-based businesses, that is businesses that often operate 'under the radar' and thus may be reluctant to participate in surveys (Mason et al., 2011). Of the returned questionnaires 165 businesses could be classified as microbusinesses.

#### 3.2. Measurements

For measuring housing resources we asked a series of questions including retrospective questions to capture change over time. First is the type of business premises, both currently and when the business was started. The response items included: business premises, desk space only, your home, home is/was base but work (worked) mainly at customers' premises, business partner's home, no fixed premises (e.g. e-business), and in addition respondents could specify any other type of premises. Second, we asked if space was used in the home, even if the business was in commercial premises. Third we asked whether respondents have ever used their personal housing equity for funding/securing finance for this business. If so, we asked for the type of funding: additional mortgage/ re-mortgage, house sale, business loan/overdraft secured on home and other to be specified. In addition, we captured information about the housing situation (housing tenure and house type) both when the business was founded and currently.

For measuring neighbourhood resources we asked whether practical help/advice for their business had ever been received from neighbours, adding that this could include family members and former colleagues. We provided three response items: yes; no, never and cannot recall. We did not define what 'neighbourhood' means so that the interpretation could vary across respondents. However, 'neighbourhood' is a term widely used in the UK population meaning the estate or part of town one lives in. We piloted this questionnaire with microbusiness owners and found in feedback that 'immediate neighbourhood' was understood.

In the interest of length and clarity we did not ask about the specific timing of the use of neighbourhood contacts or housing equity for the business. Time effects can be

investigated to some extent using the age of the business. Further, our survey does not contain information about other pecuniary or non-pecuniary resources the business has used. Instead we compare against the Small- and Medium-Sized Enterprise Finance Monitor (UKSMEFM) 2013 which captures other sources of finance. Moreover, we derive estimates on how many UK microbusinesses seek advice and information from the UK Small Businesses Survey (SBS) 2014.2 These surveys allow us to compare the use of housing and neighbourhood resources captured in our survey with other pecuniary and non-pecuniary resources to microbusinesses.

Using the postcode of the business owner's current home address, neighbourhood characteristics were linked to the survey records at the level of Data Zones, typically capturing between 500 and 1000 household residents.<sup>3</sup> Area characteristics include: deprivation (Scottish Index of Multiple Deprivation<sup>4</sup>), population density, housing tenure composition and self-employed workers, professionals and people with degree (each is expressed in absolute number and as a percentage share of the population). For deprivation 2012 data were available, while all other data are from the Population Census 2011. We were thus able to examine whether microbusiness owners who live in more deprived areas are more likely to use local networks. However, it could be that business owners started in a deprived neighbourhood and due to wealth accumulation moved to a more affluent neighbourhood later on which we cannot investigate with the data. Thus there may be neighbourhood effects which we cannot capture with our data (which is a general problem in neighbourhood effects research). The density of population and self-employed workers measures the opportunity to interact with people and peers for gathering information and advice and receiving motivations in the local area. The presence of people with a degree and professionals in the same neighbourhood are proxies for local human capital and local social capital (cf. Schutjens & Völker, 2010). The local housing tenure composition tests whether the use of contacts in the neighbourhood is associated with having neighbours who are tenants or owners. This is associated with deprivation (social housing in particular) but it may be that beyond an income effect homeowners are more likely to be a resource for business advice and information as they are more active in local institutions and more likely to have experience of running a business.

The questionnaire captured standard information about the business (legal status, year when business was founded, number of employees when started and currently, principal activity of the business), the value attached to certain aspects of location, some key personal information about the owner (age, gender, household composition) as well as personal reasons for starting or joining the business.

## 4. Empirical findings

## 4.1. Ouantitative relevance of local residential resources

Adding up all three measures of housing resources used in the survey - premises/base, complementary space to external premises, equity as business funds - then almost three-quarters of microbusinesses (73%) used housing resources for their business. Of those who do not currently use their home as premises or base for their business, still more than half (54%) had used housing resources either in the form of premises in the past, means for business finance or study/spare room for business purposes.

Almost one-third (32%) of microbusinesses had used business advice from a neighbour. Overall, 82% of the whole sample had made use of what we call local residential resources for their business.

The majority of microbusinesses (54%) had been run from the owner's home, either when founded or now. Of those in commercial premises or with no fixed premises at the time of the survey, over one quarter (26%) used additional space in their home for business purposes.

Moreover, 23% of microbusinesses had used housing equity for funding their business. They mainly used the house to secure a loan or an additional mortgage for business purposes. Cash from a house sale was seldom used. The UKSMEFM 2013 indicates that 60% of UK microbusinesses used external finance for their business.<sup>5</sup> It is not captured whether businesses secured loans against the owner's house or whether housing equity was used in some other form. Of the 40% that do not use any external finance for their business, almost all (96%) had never used external finance in the past five years. Thus our derived figure of 23% using housing equity for business purposes over the life of the business appears to be significant in that it represents more than half of these businesses in the UKSMEFM apparently not using any external finance.

Further, in the UKSMEFM, businesses that were still micro (less than 10 employees) up to 24 months after having started trading have rarely used finance for starting their business beyond own personal savings and financial support from kin and family (97%). For business start-ups, the UKSMEFM also captures finance through (re-)mortgage on the home. This applies to only 1% of the micro start-ups. The take-up of venture capital, finance from business angel or other investors is zero. This suggests that the home as financial resource is rather used beyond the start-up phase (but has been missed by the design of the UKSMEFM). We can further investigate this with our data (Section 4.3).

To provide context for the use of practical advice or help from people in the neighbourhood by 32% of microbusinesses in the sample, we use data from the UK SBS 2014 (see Section 3.2). Here businesses were asked whether they have sought external advice or information on matters affecting their business in the last 12 months. According to the SBS this is true for 32% of microbusinesses in the UK. Thus even though we did not limit our question to a certain time period, the proportion of those who received advice and information from people in their neighbourhood appears to be high.

Businesses in the SBS were further asked whether the assistance or support was for 'information relating to the day to day running of your business' or 'strategic advice to help introduce a stepped change to grow your business in terms of profitability or number of employees', or both of these or neither of these. For the largest proportion of microbusinesses, day to day information is the most important reason for seeking advice (33%) and not a strategic approach to growth (24%) (for 15% both apply and for 20% neither of these apply). We can assume that 'strategic advice' captures more formal support channels like business associations and financial institutions whereas 'day to day' information and support is provided through informal channels, including local networks.



## 4.2. The use of housing as premises or base for the business

The home is a significant place where microbusinesses are located as was expected from the home-based business literature. A temporal perspective, however, reveals a complex picture of the use of the home as business premises over the life of the business (Table 1). The proportion of businesses that were founded in the owner's home is almost as high as businesses that were founded elsewhere (48% vs. 52%), underlying the role of home space for business start-ups. Some businesses had moved out of the home as could be expected. However, our results reveal that relocation also takes place in the opposite direction into the home. Together, only a minority of businesses (40%) have been in commercial premises since they were founded.

We further investigate characteristics of businesses that have used the home as business premises or base according to when they were located in the home over the life of the business: remained in the home, moved into the home and moved out of home. In Table 2 regression results are reported for businesses that remained in the home compared to those that remained in commercial premises (Model 1). In addition, those that remained in the home are also compared to all other businesses in the sample (Model 2)

Table 1. Start-up motivation and relocation motivation by type of home-business evolution.

	Current premises			
Premises when founded  Commercial Start-up motivation	Commercial	Home		
	Remained in commercial premises (40%)	Moved into home (6%)		
	<ul> <li>To be my own boss (61%)</li> <li>Take advantage of business opportunity (47%)</li> <li>To pursue a passion/hobby (23%)</li> </ul>	Take advantage of business opportunity		
Relocation motivation	(not applicable)	<ul> <li>To be closer to home</li> <li>Wanted premises/area with better appearance/image</li> <li>Rent too high</li> <li>Cost reduction/restructuring</li> <li>Lease expired</li> <li>Lack of parking</li> </ul>		
Home Start-up motivation	Moved out of home (12%)	Remained in the home (36%)		
	<ul> <li>To be my own boss (80%)</li> <li>Take advantage of business opportunity (55%)</li> <li>To pursue a passion/hobby (45%)</li> <li>To work from home (15%)</li> </ul>	<ul> <li>To be my own boss (54%)</li> <li>Take advantage of business opportunity (53%)</li> <li>To work flexible hours (32%)</li> <li>To pursue a passion/hobby (31%)</li> <li>To work from home (25%)</li> </ul>		
Relocation motivation	<ul> <li>Needed more space (90%)</li> <li>Wanted premises with better appearance/ image (55%)</li> <li>To be closer to customer</li> </ul>	(not applicable)		

Notes: N = 165 microbusinesses. No percentage share is reported if the cell count is low. Another 6% of businesses have no fixed premises and have neither at the start nor currently been based in the home. Source: own survey.



Table 2. The use of the home as premises or base for the business, odds ratios

Independent variables	Model 1: Remained home-based vs. remained in commercial premises		Model 2: Remained home-based vs. all other microbusinesses		Model 3: Currently home-based vs. currently non-home- based	
Characteristics of the business						
Current number of staff (ref.: none)						
1–3	1.158	0.761	0.768	0.374	0.675	0.322
4–9	0.129**	0.108	0.122***	0.089	0.187***	0.120
Duration of running business (sqrt)	0.497***	0.117	0.533***	0.102	0.594***	0.104
Knowledge-intensive activity (yes)	(#)		2.950**	1.391	3.570***	1.560
Legal status (ref.: sole proprietorship)						
Limited company	1.212	0.933	1.143	0.707	1.342	0.786
Partnership	2.859	2.827	(#)		2.652	2.163
Characteristics of the owner						
Gender (Women)	1.038	0.688	1.376	0.722	1.096	0.559
Household with dep. child (yes)	1.980	1.176	2.358*	1.142	0.923	0.425
Age of owner (ref.: <40 years)						
40–49	3.009	2.707	1.710	1.125	1.709	1.098
50–59	1.335	1.184	1.492	0.995	1.393	0.888
60+	(#)		3.360	2.870	3.104	2.448
Current house type (ref.: detached/sem	i-detached)					
Terraced/town house	0.292	0.270	0.314	0.229	0.520	0.345
Flat	0.216**	0.162	0.318**	0.175	0.259***	0.136
Motivation for starting the business <sup>a</sup>						
Flexible work	(#)		1.628	0.813	1.786	0.894
n observations	111		144		155	
Log Likelihood	-45.728		-68.983		-74.149	
LR Chi <sup>2</sup> (14)	62.41***		54.49***		51.16***	
Pseudo R <sup>2</sup>	0.406		0.283		0.257	

Notes: # not displayed due to large standard errors.

Source: own survey.

as some results cannot be displayed for Model 1 due to few cell counts. In Model 3 businesses that are currently home-based are investigated using those that are currently not home-based as a comparison group. Comparing results for this latter model with Models 1 and 2 for businesses that remained in the home shows how important differences in the home evolution are in understanding microbusiness.

All models include as independent variables characteristics of the business, characteristics of the owner and 'flexible work' as motivation for starting or joining the business. The latter is not displayed in Model 1 (due to a lesser cell count) but descriptive statistics are reported below. Industry sectors are not incorporated as cell counts are too small for most industries. Instead we derived a measure for the knowledge-intensity of the business activity using the Eurostat Knowledge Intensive Activities by Statistical classification of economic activities in the European Community (NACE) Rev. 2 classification.<sup>6</sup> The explanatory power of these three models is relatively high, ranging between 26% and 41%. The numbers of businesses that moved out of the home or moved into the home are too small for a multivariate group analysis. For these therefore descriptive results are reported.

<sup>&</sup>lt;sup>a</sup>Respondents could tick as many motivations that apply. Here 'work from/near home' and 'flexible working hours' are collapsed and compared with all other categories altogether.

<sup>\*</sup>p < .1.

<sup>\*\*</sup>p < .05.

<sup>\*\*\*</sup>p < .01.

The home provides opportunities for business activity particularly for very small, young and knowledge-intensive businesses. The home can be used as premises or base even when the business has employees. We cannot detect a higher chance of being located in the home for businesses with zero to three employees but above this threshold microbusinesses are more likely to be non-home-based businesses (Model 3). In all models the duration of running the business is significantly lower than in the comparison group. Correspondingly, start-up businesses (defined as businesses that are younger than 24 months) are more likely to fall into the respective home-based groups (not shown). We cannot find evidence that the home is more likely to be used as premises or base when the business is run by a sole proprietor, suggesting that microbusinesses run as companies, that is 'formal' businesses, are equally likely to use the home as premises or base.

Being located in the home is highly associated with knowledge-intensive activities (Model 3). Having a fast broadband and internet connection is therefore highly relevant for businesses that have been located in the home, either only at the start or continuously (not shown). The knowledge-intensive business activity enables businesses to move into the home, for example, when the business has to adapt to restructuring and downsizing. Almost all businesses that moved into the home classify as knowledge intensive. Also the vast majority of those businesses that remained in the home or moved out of the home are knowledge intensive (74% and 70% resp.). In stark contrast, only 37% of microbusinesses that remained in commercial premises classify as knowledge-intensive activity, being more likely to be in wholesale and retail and accommodation and food services.

The home is often an enabler of temporal and spatial flexibility. Business owners who remained in the home have more often than other business owners started the business for being able to work from home or near home (25% vs. 12% in the sample); and one-third sought to work flexible hours (32% vs. 21% in the sample). Taken together, this spatiotemporal flexibility was a reason to start the business for 41% businesses that remained in the home compared to only 9% that remained in commercial premises. The flexibility that the home offers is important for those with dependent children (Model 2). This household composition effect is not shown in the model when current home-based businesses are compared with currently non-home-based businesses (Model 3) because those who moved into the home did not do so because of the presence of dependent children (even though being closer to the home was for some the main reason to move the business into the home). This flexibility aspect of the home for sustaining a homebased business applies to men and women alike; no gender difference can be revealed in this respect (an interaction term of women and dependent children is not significant and not displayed).

Generally, we cannot find evidence that women are more likely than men to use their home as premises or base for their business. This is surprising because existing homebased business literature stresses the suitability of home-based businesses for women (with children). Furthermore, we cannot find age differences between home-based business owners and those who are non-home-based.

Starting the business in the home is associated with the motivation to pursue a passion/ hobby (Table 1). In this regard the home can be conceived as space for self-fulfilling work. This does not mean that home-based businesses are 'hobby' businesses as some of these businesses had grown out of the home and others move into the home for a series of other reasons (Table 1).

Almost all microbusiness owners who moved out of the home did so because they needed more space for the businesses (Table 1). Looking at the motivation for having started the business, these home out-movers more often than other businesses started the business to be their own boss (80% vs. 57% in the sample) and to pursue a passion/ hobby (45% vs. 30% in the sample). To work from home or near home was a motivation for the business only in a minority of cases. Hence for them the home was a nurturing ground and apparently by most used as a springboard for business growth (63% grew in terms of employment).

Businesses that moved into the home did so because of various reasons (Table 1). Crucially, for them the home can provide a better fit with their personal/family life, inexpensive business space including a 'refuge' (when the lease for commercial premises expired) and quality features related to the built environment.

We cannot investigate with the data whether a large house (as compared to a flat) 'causes' people to run a business. However, the data reveal that running a business from home (including using the home as base) is significantly less often associated with living in a flat (Table 2). The majority of those who remained in the home and those who moved the business into the home live in detached or semi-detached houses (63% and 67% resp.) and this proportion is much lower for those who remained in business premises or moved out of the home (47% and 45% resp.). The proportion of those living in flats is highest amongst business owners who moved the business out of the home. For them, the relocation was in all cases due to the lack of space, usually associated with employment growth. Thus we can assume that a detached or semi-detached house helps people in sustaining a home-based business or move the business into the home.

## 4.3. The use of housing as a financial resource

The vast majority of microbusinesses (91%) are homeowners in which case the use of the home as a financial resource for the business may be an option either through an additional mortgage or securing a business loan on the house. Of the homeowners, 25% had used housing equity to fund their business, or 23% of all business owners including renters. Only two of the surveyed microbusiness owners are social housing tenants. So, the surveyed microbusiness owners appear to be distinct from the Edinburgh population in which 24% of the households were social renters and 62% homeowners.

We test associations between the use of housing equity with characteristics of both the business owners and their businesses in a multivariate regression similar to models used in Table 2. Findings are displayed in Table 3. Age is a control as the level of housing equity generally rises with the age of the owner. We add to this model a variable indicating whether the business has been relocated in the past as relocation can cause an immediate demand in finance. The model explains a quarter of variation in the use of housing equity.

The findings suggest it is not the age of the business or whether it is a start-up, as was expected, but relocation that is associated with the use of housing equity. Those who have moved the business in the past are more likely to have used their housing equity for the business. This applies to moves between commercial premises and between the home and external premises, in both directions. In numerical terms, 41% of owners who remained in commercial premises after a move, 32% of those who moved out of the



**Table 3.** Housing equity used for business purposes (Group 1) versus no use of housing equity (Group 0), odds ratios.

Independent variables	OR	SE	
Characteristics of the business			
Number of staff when founded (sqrt)	2.336***	0.768	
Employment growth since start (yes)	2.025	1.108	
Duration of running business (sqrt)	1.024	0.216	
Sole proprietor (yes)	0.854	0.554	
Knowledge-intensive activity (yes)	0.583	0.313	
Business founded in the home (yes)	0.704	0.402	
Relocation (yes)	4.630***	2.709	
Characteristics of the owner			
Gender (Women)	0.506	0.397	
Couple household with and without child (yes)	1.775	1.215	
Age of owner (ref.: <40 years) <sup>a</sup>			
40–49	0.900	0.836	
50–59	1.905	1.716	
n observations	140		
Log Likelihood	-54.022		
LR Chi <sup>2</sup> (13)	34.80***		
Pseudo R <sup>2</sup>	0.244		

Source: own survey.

home and 44% of those who moved into the home have used residential mortgage finance for their business.

Home in-movers are likely to have used housing equity for creating office space in their house rather than for expanding the business or improving the premises/area as with moves into commercial premises. All home in-movers who used housing equity have dedicated office space in their home. To contrast, businesses that remained in the home have rarely ever used their home as a financial resource (12%). This is an important finding for explaining the high proportion of microbusinesses that do not use external finance (Section 4.1).

Controlling for relocation, business owners are more likely to have used personal housing equity for their business the more staff they had at the start-up phase which is likely to be linked with higher start-up costs than those businesses with no employees.

## 4.4. The use of neighbourhood resources for the business

We test associations between the use of neighbourhood resources and business characteristics, neighbourhood characteristics of where the owner lives and personal characteristics of the owner in multivariate regressions. Findings are presented in Table 4 in two models. Model 1 tests whether living in a neighbourhood that contains many self-employed entrepreneurs and professionals encourages social interaction with them. We also tested the effect of people with a degree but the effect was not significant (not shown). Model 2 tests whether living close to homeowners has an effect on the use of local contacts for the business. Because of the spatial correlation of homeownership with self-employed and professionals, separate models are used. In these models the current premises types of the business (commercial premises, home as premises and home as base) are incorporated as independent variables. For the business-home evolution types (which include some

<sup>&</sup>lt;sup>a</sup>Not all categories displayed due to small cell count/large standard error.

<sup>\*\*\*</sup>p < .01.



Table 4. The use of neighbourhood resources (Group 1) versus no use of neighbourhood resources (Group 0), odds ratios.

	Model	1	Model 2		
Independent variables	OR	SE	OR	SE	
Business characteristics					
Current premises (ref.: commercial premise	s) <sup>a</sup>				
Home as premises	0.226***	0.131	0.227***	0.130	
Home as base	0.030***	0.036	0.034***	0.037	
Number of staff at start (sqrt)	0.524**	0.166	0.520**	0.167	
Employment increase (yes)	1.059	0.574	1.088	0.581	
Duration of running business (sqrt)	0.850	0.153	0.860	0.155	
Sole proprietor (yes)	0.377	0.260	0.378	0.260	
Knowledge-intensive activity	0.637	0.327	0.645	0.329	
Neighbourhood characteristics <sup>b</sup>					
Area deprivation (SIMD, sqrt) <sup>c</sup>	0.999	0.002	0.999	0.003	
Self-employed workers (number)	1.002	0.015	=	_	
Professionals (numbers)	0.998	0.006	_	_	
Population Density (sqrt)	0.798	0.181	0.812	0.206	
% Homeowners in population	_	_	1.396	2.363	
Motivation of starting the business <sup>d</sup>					
Necessity/could not find job	3.693**	2.450	3.468**	2.237	
Take advantage of bus. opportunity	1.075	0.542	1.066	0.540	
Be own boss	2.357	1.336	2.251	1.267	
Pursue passion/hobby	0.623	0.353	0.593	0.330	
To work from home/near home	1.322	1.083	1.358	1.103	
Work flexible hours	1.621	1.113	1.589	1.086	
Owner characteristics					
Gender (Women)	0.672	0.400	0.704	0.408	
Household with dep. child (yes)	0.940	0.480	0.954	0.486	
Age of owner (ref.: <40 years)					
40–49	0.319	0.242	0.314	0.233	
50–59	0.799	0.575	0.807	0.569	
60+	0.304	0.282	0.307	0.284	
n observations	130		130		
Log Likelihood	-66.652		-66.729		
LR Chi <sup>2</sup> (24)	34.40*		34.25*		
Pseudo $R^2$	0.205		0.204		

Source: own survey.

small groups) descriptive results are reported instead. The models explain 20% of the variation in the use of neighbourhood contacts for business purposes.

It was expected that home-based businesses are more likely to use neighbourhood resources as they are based in the owner's residential neighbourhood and so may be more likely to speak with neighbours about their business. Our findings reveal the opposite. The type of premises the business is in shows a strong association with the use of neighbourhood resources. However, it is negligible for businesses that use their home as the base for their business and is also insignificant for businesses with the home as premises. Instead it is businesses in commercial premises that use neighbourhood resources. Further broken down, 40% of businesses that remained in commercial premises and 50% of those who moved out of the home have made use of advice and help from people who

<sup>&</sup>lt;sup>a</sup>Remaining group 'others' not displayed.

<sup>&</sup>lt;sup>b</sup>All neighbourhood characteristics measured at Data Zone level.

<sup>&</sup>lt;sup>c</sup>Scottish Index of Multiple Deprivation, ranks to vigintiles.

dRespondents could tick as many motivations that apply. Category 'other' not shown.

<sup>\*</sup>*p* < .1.

<sup>\*\*</sup>p < .05.

<sup>\*\*\*</sup>p < .01.

live in their neighbourhood. This means that housing resources and neighbourhood resources are not used in complementary ways as we expected from the literature but rather as substitutes. Therefore compared to the very high aggregate use of local residential resources (Section 4.1), only 23% of microbusiness owners have used both housing and neighbourhood resources for their business.

We use again the SBS (see Section 3.2) for a robustness check as it is likely that microbusiness owners who use their home as a base or premises have less often used local contacts for their business because they generally require less information and advice than businesses in commercial premises. However, in the SBS 2014 sample, there is no statistically significant difference between the probability of a home-based and non-home-based business having used information and advice in the previous 12 months (62.2% of homebased vs. 57.8% non-home-based businesses did 'not' use information and advice in the past 12 months, not significantly different after controlling for employment size and whether the business is in an urban versus rural area).

Another aspect of the business that shows an association with the use of neighbourhood resources is the number of staff at the start of the business. The fewer the number of staff, particularly those who started with no employees, the more likely is the use of neighbourhood resources. However, it is not sole proprietors or informal businesses who are more likely to have used neighbourhood resources.

We find no support for the assumption that creative or knowledge-intensive microbusinesses are more likely to use neighbourhood resources than microbusinesses in other industries. In our sample only five microbusinesses are in the arts, entertainment and recreation sector. None of these have ever used neighbourhood resources for their business. The effect of a knowledge-intensive business activity is not significant (Table 4).

We did not ask when in the evolution of the business neighbourhood resources were used. However, we tested effects of the age of the business and a start-up on the use of neighbourhood resources. Both effects are not significant (only business duration is shown in Table 4).

We could not find evidence that neighbourhood characteristics influence the use of local contacts for business purposes. However, the surveyed business owners live overwhelmingly in the most affluent areas of Edinburgh. This is an important finding in itself, but means our sample cannot reveal what may be occurring in more deprived neighbourhoods.

The existing literature suggests that urban density of people and businesses creates opportunities for knowledge spillovers, and Andersson and Larsson (2014) conclude that the clustering of entrepreneurs, which they found at neighbourhood level in Sweden, is linked to social interaction effects. Our results, however, show that density of people, self-employed workers and highly skilled people do not necessarily mean that local social networks are used by business owners. We cannot find a positive effect of population density, number of self-employed workers, numbers of professionals and numbers of people with a degree on the use of neighbourhood contacts as a resource for the business. We also tested effects of these variables as a percentage share in the population but these are also not significant (not shown). Living in a neighbourhood with a high proportion of homeowners has also no effect on the use of neighbourhood contacts (Model 2 in Table 4).

The use of neighbourhood resources, however, is related to the motivation of having started the business. Those who started the business as a matter of necessity (because they could not find an adequate job or were made redundant) are more likely to have used neighbourhood contacts for their business. Thus contacts with colleagues who are identified in the literature as relevant sources for entrepreneurs (Huber, 2012) may have not been available which is why neighbours were used instead. In addition, unemployed people may spend more time in the neighbourhood and so have more contact with neighbours.

Other socio-demographic characteristics (gender, age, household composition) are not significantly different between those who have and have not used neighbourhood resources. Although not significant the coefficient for women (and also for the interaction effect with dependent children) is negative, so we can reject the often posited, but untested, hypothesis that women, particularly if they have children, more often use local contacts for starting or running a business.

#### 5. Conclusions

This study stresses that the prevalent planning and economic concepts that isolate commercial and residential functions do not reflect how microbusinesses function in urban economies. Local residential resources, especially housing resources, are used by a large majority of microbusinesses (82% in our sample). This is not limited to microbusinesses run from the owner's home, but extends to businesses in commercial premises using space in the owner's home and to the use of housing equity to fund business operation and expansion. Physical space in the home and/or attached premises is an important factor in facilitating the use of housing space for business use, with flats being less likely to be used. Advice from neighbours is important for business owners who started their business out of necessity or could not find a job. In short, local residential resources are important for microbusinesses.

Housing resources are important at different times in the evolution of a business, with many businesses starting in the owner's home and moving out as the business grows, and others moving into the home as the business shrinks or leases on commercial premises expire. Housing as a financial resource is often used for relocating a business. Thus, housing and neighbourhood resources provide sources for advancing through the business cycle, and buffers to shocks and resilience to hard times. Future research would benefit from applying an evolutionary perspective not only to local economies but also at the level of the business.

The social and domestic circumstances of a business owner influence their business location decisions and are linked to their reasons for running a business. For businesses that remain in the owner's home, flexible working is an important motivation, particularly for those with dependent children. Our study also reveals hitherto overlooked practices: business owners move their business into their home later in the business cycle because they want to work from home, and business relocation is triggered by moving house (in the case of home-based businesses). These findings suggest that future research on the functioning of local economies and the evolution of microbusinesses would be wellserved by a greater recognition of the porosity of the boundary between 'economic' and 'social' considerations.

Our findings also challenge a number of common, but largely untested, assumptions in existing literatures on how neighbourhoods feature in the evolution of businesses, and on the nature of home-based businesses and women entrepreneurs. First, the use of housing resources is not associated with 'weak' or 'hobby' businesses, with businesses using housing resources being: more likely to be knowledge-intensive; as likely to have up to three employees; and liable to grow and move out of the owner's home. Second, the presence of potential sources of business advice in the neighbourhood is unrelated to the probability of them being used. Third, women, including women with dependent children, are no more likely to use local neighbourhood contacts for business advice than other business owners.

Our results challenge an intuitive conceptualization of housing as being spatially nested within the neighbourhood (at least in relation to how housing and neighbourhood resources are used by microbusinesses). Compared to businesses in commercial premises, home-based businesses are substantially less likely to have obtained advice from neighbours, and the physical space of the dwelling itself acts as a base from which to access the wider city, region and the internet. Together, these findings raise the question of just how 'local' home-based businesses are.

Urban and neighbourhood studies have tended to investigate negative externalities of deprived neighbourhoods. The surveyed microbusiness owners in our study overwhelmingly live in affluent neighbourhoods. It is important for future research to disentangle the extent to which affluent neighbourhoods foster entrepreneurs versus the extent to which entrepreneurs choose to live in affluent neighbourhoods. The role of deprived neighbourhoods in either supporting or limiting entrepreneurship needs to be investigated in the wider context of the evolving location histories of businesses and where their owners live. Longitudinal data will be invaluable in these endeavours, and may require purposeful sampling to generate sufficient observations of business owners who live in deprived neighbourhoods.

The great importance of local residential resources together with their inherent dynamics over time revealed in this study mean that multi-use planning of neighbourhoods and housing units would cater best for microbusinesses. Even mixed-use town planning still separates residential and commercial uses, albeit on a small scale, which does not reflect how a lot of business activity is conducted in urban neighbourhoods. The concept of multi-use (rather than mixed-use) neighbourhood planning would help foster more flexible and dynamic use of neighbourhoods and urban districts. As part of this, economic development should reach out to 'residential' neighbourhoods and utilize the networking potential of non-business-related neighbourhood associations for promoting microbusiness and business start-up. Further, house design that enables flexible uses would allow people to (re)arrange living and working depending on their multiple needs. Together these have the potential to contribute to the stability and sustainability of neighbourhoods.

Nevertheless, the response of urban planning and other public policies is contestable and political. The interests of microbusiness owners may not coincide with the interests of other neighbourhood residents, particularly if a business run from home generates 'nuisance' such as noise or traffic. For some, a 'pro-business' stance to support and encourage businesses run from homes may contradict the role of the planning system to minimize negative externalities that arise between 'conflicting' uses (e.g. residential and commercial). For others, the planning system should not be overly prescriptive of use patterns - and should not restrict but facilitate naturally occurring social and economic trends, such as the rise of microbusinesses run from homes. More generally, what physical and symbolic shape a 'residential' neighbourhood should take on is a highly political and culturally specific question: are they sanctuaries of inactivity in a chaotic world, or places of interaction, innovation and activity, and for who?

#### Notes

- 1. See UK Data Service Study Number 6888 (http://dx.doi.org/10.5255/UKDA-SN-6888-13).
- 2. See UK Data Service Study Number 7814 (http://dx.doi.org/10.5255/UKDA-SN-7814-1).
- 3. See http://www.gov.scot/Publications/2005/02/20697/52626.
- 4. Based on Data Zone rank (1-6505), with 1 the most deprived. The index is derived from a wide range of data, including the prevalence of employment, unemployment, poor health, poor housing, car ownership and receipt of state benefits.
- 5. All figures reported from the UKSMEFM and the SBS are weighted data allowing estimates for the UK.
- 6. See http://ec.europa.eu/eurostat/cache/metadata/Annexes/htec esms an8.pdf
- 7. Data were obtained from the Population Census 2011.

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## **ORCID**

Darja Reuschke http://orcid.org/0000-0001-6961-1801 *Donald Houston* http://orcid.org/0000-0002-7178-9630

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