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THE SPATIAL CONFIGURATION OF MINORITY ETHNIC BUSINESS DIVERSITY IN LONDON'S HIGH STREETS

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ABSTRACT

Previous research has shown that the local town centre can be a space of considerable socio-economic diversity, manifested in its being a place of work and community activity in addition to retail activity. The long-term sustainability of the town centre has been shown to correspond to its configurational spatial signatures. Where high streets exhibit a high ethnic diversity amongst proprietors, there appears to be a corresponding diversity of land use and goods, with a tendency to adapt and alter space for greater economic benefit. Small independent units are often further subdivided to accommodate a greater number of services and products. In the context of the local high street in the UK, the small independent Minority Ethnic Business (MEB) is a common feature, whether it is a halal butcher, an Indian chemist or a Chinese takeaway, serving both an embedded local minority community as well as often having a wider mainstream appeal. This paper seeks to examine the relationship between spatial configuration and socio-economic diversity of the local high street to investigate whether the potential for diversity is embedded in its contextual spatial characteristics.

For the purpose of this study using nationally defined town centre boundaries, ten town centre case studies were selected from around London based on their residential ethnic profile and the level of deprivation of the area. Building on the literature that shows that land use diversity is associated with the persistence of smaller town centres, we test the proposition that it is also associated with the presence of MEBs. Here we tested the degree of impact of MEB presence on commercial diversity across these case studies.

Additionally, the study examines the spatial and morphological signatures of these case studies and how these relate to the context of MEB presence and land use diversity, finding a strong relationship between spatial and urban form factors and a greater presence of MEBs. The study concludes that given the importance of spatial accessibility coupled with built form diversity to the presence of MEBs, greater attention needs to be given to the embedded social value in the spatial characteristics of town centres.

KEYWORDS

diversity, land use, morphology, minority ethnic businesses, London

1. INTRODUCTION

Previous research has determined that smaller town centres function best when they are sustained by local industry and the provision of a wide range of professional and community services in addition to office and retail employment. Such centres are enlivened by activities occurring at overlapping spatial scales, the outcome of journeys of different lengths which are most likely to be repeated where network accessibility is most effective. (Vaughan, et al. 2009) The diversity of land uses along the main high streets of town centres has been shown to constitute an ecology of mixed use. This ecology is supported by an ecosystem of built form and street network characteristics which allow for its long-term evolution. (Vaughan et al., 2015; Törmä et al. 2017) In this paper we present research which goes deeper in the relationship between land use diversity, and the contextual spatial and social characteristics of London's high streets, examining the relationship between spatial configuration, plot size and socio-economic diversity of the local high street to investigate whether the potential for diversity is embedded in its contextual spatial characteristics.

In a post-industrial time of mass transnational migration, the emergence and growth of the small independent, minority owned firms has become a phenomenon that has been seen to make a considerable contribution to local economies. It has been suggested that the emergence of minority ethnic businesses (MEB) has been the result of a convergence of circumstances; rising post-deindustrialisation unemployment amongst migrant communities, the resultant lack of cultivation of skills required for more conventional employment in their new environment such as language proficiency and adequate education and career skills, minority immigrant groups resort to self-employment as a survival strategy (Barrett et al. 2001).

Often due to the lack of skills required and low initial capital outlays, migrant businesses tend to occupy the lower end of the market in easy-to-enter businesses such as food retail, clothing and restaurants (Hall 2011). Whilst this trend of self-employment may be the outcome of initial shortcomings in skills and /or a degree of prejudice and exclusion on the part of the host community, this entrepreneurial mind-set has proven to be advantageous to minority communities in providing employment for co-ethnics over time, in the form of a "protected market" (Aldrich et al. 1985) for the ethnic businesses and access to speciality items such as food, clothing, music and entertainment to ethnic minority groups looking for products from home (Iyer and Shapiro 1999). MEB owners have been known to militate against financial risk by subdividing and subletting space. This can result in adding diversity of land uses and creating complementary services on one site (Hall 2011). Over time, certain ethnic products and businesses have found an emerging demand beyond their niche markets, resulting in ethnic businesses becoming cultural destinations where minority ethnic culture can be consumed by the mainstream (Barrett and McEvoy 2006), 2006) and in some cases, national grocery retailers might stock ethnic products for mainstream consumption (Jamal 2003).

Studies have shown that there appears to be some degree of correspondence between areas of ethnic diversity and deprivation (Hall 2013), and that deprivation is often related to spatial accessibility (Vaughan & Geddes, 2009) which in turn shapes a residential population's access to employment, services and a wider social network (Legeby 2009). This may in part be responsible for the relationship between high neighbourhood minority ethnic presence and higher MEB start-ups. In addition, people living in deprivation are most in need of locally accessible centres with a diverse set of activities, since these are the places in which the less mobile are often highly invested socially, culturally, and economically (Hall 2011).

This paper reports on part of a wider study which investigated MEB high streets in London. It focuses on one of its main hypotheses, that MEB high streets have distinct spatial characteristics that are measurably different from non-MEB streets. In other words, high streets which contain a large number of minority ethnic businesses are likely to be benefitting from factors such as local

accessibility and narrower frontages. To this end, the following sections first describe the study methods, then describe the research statistics and subsequently analyse these statistically.

2. DATASETS AND METHODS

London is a city where 179 nationalities are represented and 300 languages are spoken city-wide (Knowles 2013) and exhibits high levels of ethnic diversity, particularly in inner London boroughs (Paccoud 2013). It has also been shown to be made up of a well-structured network of centres and sub-centres (Hillier 1999) and that there is an association between longevity of a town centre, land use diversity and spatial adaptability (Vaughan 2015a; Törmä et al. 2017). It is for these reasons that London was chosen as a focus for the study, which considered a sample of ten commercial streets (or in the UK terminology, high streets) and their immediate environs. The streets are located in a range of London neighbourhoods selected to obtain a range of types defined by residential ethnic composition, level of deprivation and land use diversity.

The sample (see Figure 1) was chosen to represent a cross-section of socially deprived/affluent and ethnically diverse/homogenous London neighbourhoods. It used the following sources of data, from which it selected cases which ranged from low deprivation and low ethnic diversity to high deprivation and high ethnic diversity:

- The index of multiple deprivation (IMD), using data at the level of Lower Layer Super Output Area (LSOA) geographical areas comprising 1000-1500 population size.
- The eighteen categories of ethnicity as defined by the Office of National Statistics (ONS) based on responses from the last census (2011).

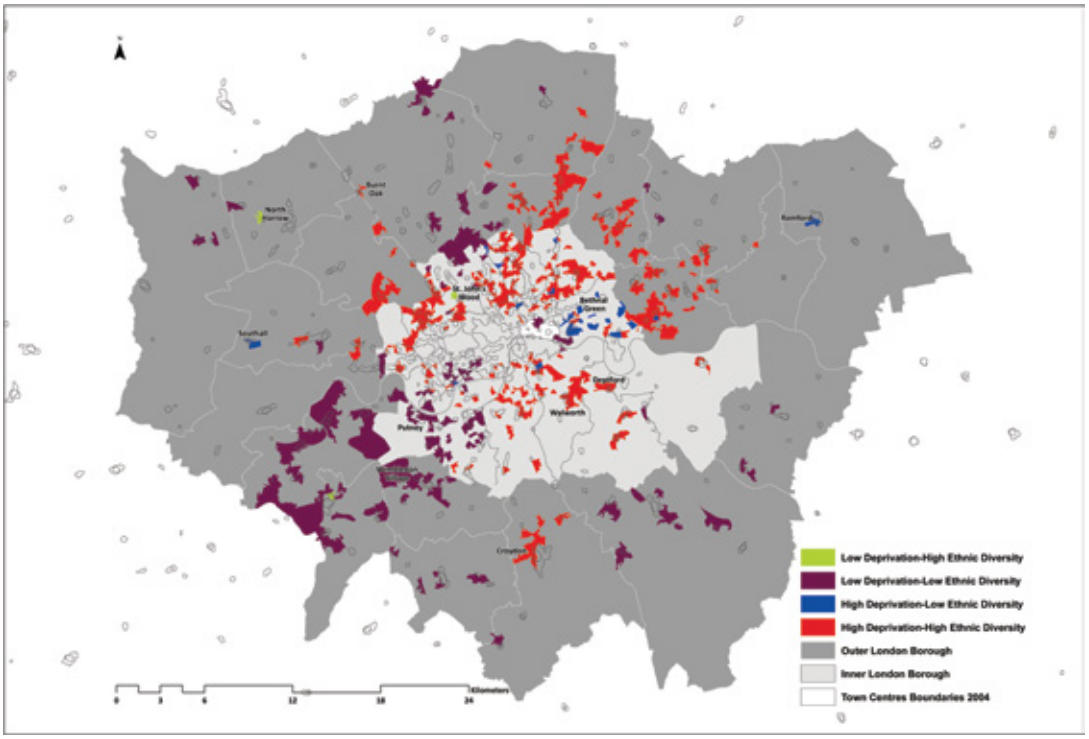

Figure 1 - Case study selection

The town centres were further filtered by using land use diversity as the control variable, selecting only those within the top 30% of land use diversity, defined using UK standard business classes, of which there are thirteen categories.

Cases were also varied geographically to cover inner and outer London, spread around the points of the compass. The study areas themselves were determined using UK national town centre boundaries, which define the peak office and retail activity in an area (Astbury and Thurstain-Goodwin 2014). Each study area was then analysed to determine its primary commercial street (high street), defined by its having peak non-residential activity, lying between two major intersections, and being morphologically similar, namely terraces with a ground floor plus two stories above with a predominance of commercial activity on the ground floor, and normally a maximum of two lanes of traffic.

A diversity index was constructed based on data available for each high street block in the case study areas. This type of index is commonly used in ecological studies to measure the diversity of species in a community. In this study we adopted this measure to identify the composition of high street blocks in terms of their land use types and MEBs. Hence, for every high street block, the land use diversity and MEB diversity was calculated using Shannon Wiener Diversity Index. Higher scores of diversity are indicative of greater and more diverse land use/MEB presence in the given block and a score closer to 0 indicates the presence of a small number of land use types (i.e. a single building with one land use type within a block face) or in the case of MEB, a block face where no MEB business is present.

3. DESCRIPTIVE STATISTICS

Summary data for each high street are presented in Table 1. Note that the first column indicates the characteristics of the local residential population. Here, diversity is a measure of the presence of many different non-British groups – hence the somewhat counter-intuitive result for Southall, which has a high South-Asian residential population, but not many other minority groups within its local population.

Socio-economic category of background population	Name	Length (m)	No. of Blocks	No. of units	Avg. area of units
High Dep-High Ethnic diversity	Deptford High Street	417	11	114	114.39
High Dep-High Ethnic diversity	Watling Avenue, Burnt Oak	318	8	92	99.61
Low Dep-Low Ethnic diversity	Putney High Street	673	11	136	158.14
Low Dep-Low Ethnic diversity	Wimbledon Village High Street	496	14	109	112.50
High Dep-Low Ethnic Diversity	Walworth Road	503	12	136	179.96
High Dep-Low Ethnic Diversity	Bethnal Green Road	450	14	114	111.98
High Dep-Low Ethnic Diversity	The Broadway, Southall	470	12	164	149.15
High Dep-Low Ethnic Diversity	High Street, Romford	505	8	65	232.32
Low Dep-High Ethnic Diversity	St. John's Wood High Street	454	10	97	117.50
Low Dep-High Ethnic Diversity	Station Road, North Harrow	404	11	83	140.17

Table 1 - Case study spatial characteristics

The land use characteristics for each high street were then observed and recorded in a GIS, where the commercial activity or business class, built form character and visible ethnic affiliation were recorded. Rather than using national classifications for ethnic affiliation (which are quite limited for our purposes; for example, grouping all African ethnicities in one class), we recorded the individual country affiliation. If a retail unit was part of a national chain, ethnicity would not be recorded, if it was an independent where the services or goods are aimed at a particular ethnicity or ethnicities/religions, ethnicity would be recorded, and finally if it was an independent where the ethnicity of the proprietor was identifiable yet the services or goods offered are generic, ethnicity would not be recorded.

Of the 1,108 units recorded across ten cases, 266 or 24% of the total number of recorded units were recorded as being minority ethnic businesses (MEBs). Further analysis of these businesses showed that MEBs seem to be of two types: those that provide a generic service such as the shop selling cheap plastic household products and luggage, and the other being those businesses supplying products such as clothing and fashion accessories for a specific ethnic group. This seems to be happening within the background of generic/non-ethnic services; i.e. banks, florists, funeral directors, and pawnbrokers. Keeping this in mind, MEBs on the high street are found primarily in three business classes – retail, retail food and food and drink. Of all the MEBs recorded 51.2% were retail, 19.4% were in the retail food category and 27% were recorded to be in the food and drink category leaving only 2.4% of MEBs in other categories.

There were varying degrees of MEB concentration across the ten sites (Figure 2). The percentages range from MEBs comprising over 50% of all units as is the case on Southall's Broadway to just over 4% of all units in the case of St John's Wood High Street. Within this distribution it should be noted that North Harrow, Deptford High Street, Burnt Oak and Southall all have over 25% of recorded units visually identified as MEB. Three of the four cases were found to have a local population with a high degree of ethnic diversity: North Harrow, Deptford and Burnt Oak. The fourth, Southall, has a primarily South Asian presence and over 50% visible MEB units. This variation in concentration of MEB units appears to confirm the proposition by (Vaughan 2015b) of there being three broad types of 'ethnic marketplace':

1. Locations with a high UK British presence, with a small presence of mainly food and drink outlets or other small MEB businesses, ranging from 4% to 9.3% (St. John's Wood, Putney, Romford and Wimbledon Village);
2. High ethnic mix of local residential communities (Walworth Road, North Harrow, Deptford and Watling Avenue; though not Bethnal Green Road) with a paralleled diversity of MEB functions, ranging from 14.7% to 31.5%;
3. The 'ethnic marketplace', where a single category of MEB businesses dominate, as in Southall with over 50% units classified as MEBs, with a paralleled high presence of people from a South Asian background.

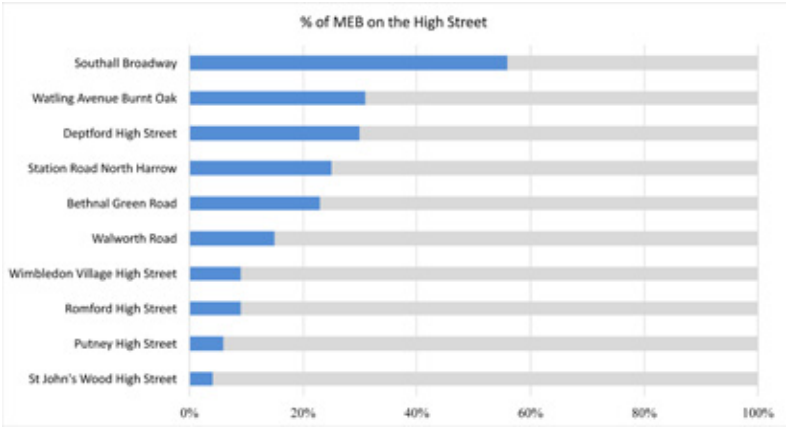

Figure 2 - Percentage of high street units that are MEBs

4. RESULTS

Our first hypothesis, that high MEB presence and diversity has a positive impact on the commercial diversity of a local town centre was supported by the evidence (and will be published in a forthcoming paper dedicated to the subject). We found that high streets which contain a large number of minority ethnic businesses with a wide range of business types correspond to greater availability of a range of products and service types within a given high street. The main hypothesis to be explored in this paper takes this finding and poses the question of whether high streets which contain a large number of minority ethnic businesses are likely to be benefitting from factors such as local accessibility and narrower frontages, which (as mentioned in the introduction), have already been shown to contribute to the presence of land use diversity.

The hypothesis that MEB high streets have distinct spatial characteristics that are measurably different from non-MEB streets was explored from a series of different spatial angles. In order to study whether high streets which contain a large number of minority ethnic businesses are likely to be benefitting from relatively high street accessibility and smaller units, MEB high streets were examined at both local (800m) and wider-scale (2000m) levels of accessibility, additionally the size of building units was examined in relation to the level of commercial diversity.

4.1 SEGMENT ANALYSIS

Space syntax analysis of the model of London's street network was created using the Ordnance Survey Meridian 2 map source. The standard space syntax measures of segment angular integration (which models the amount of angular changes required to access all other street segments in a given network) and segment angular choice (which models the centrality of a street segment on routes between any two street segments). A range of metric search radiuses ranging from 400 to n (all segments within the model) were computed for each of the two measures. All town centres were plotted against local (800m) and wider-scale accessibility (2000m) – the two scales were chosen to approximate a normal distance of everyday walking (the former) and a maximum distance of walking (the latter), to test for variation in the ten case study locations. This can be seen in the following two Figures, which plot average integration radius 800 against radius n and radius 2000 against radius n, respectively (**Figure 3** and **Figure 4**). Bethnal Green, Walworth and St John's Wood high streets are in the higher band of accessibility both locally and at the wider scale in comparison to other case studies, followed by Putney and Deptford high streets. Romford's high street is the least accessible from all case studies both 800 and 2000 metre scales.

Figure 3 - A plot of all town centres within London, highlighting the ten cases as well as London's commercial heart (West End, Central London) for comparison. The X axis shows average for all segments within a town centre at radius n (city-wide); the Y axis shows integration radius 800 metres

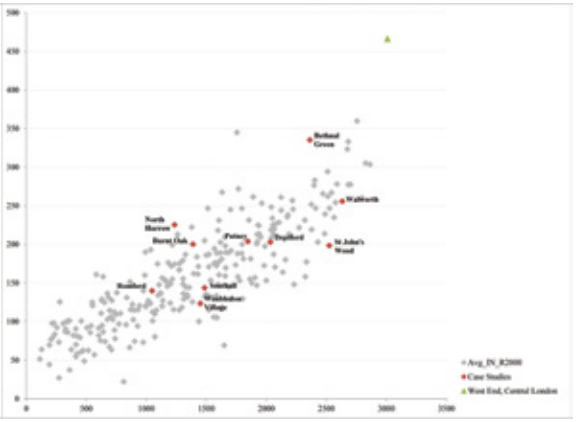

Figure 4 - A plot of all town centres within London, highlighting the ten cases as well as London's commercial heart (West End, Central London) for comparison. The X axis shows average for all segments within a town centre at radius n (city-wide); the Y axis shows integration radius 2000 metres

In the following analysis we defined a perimeter of 2000m around each high street to capture data on the extents of its maximum catchment on foot. We then compared the space syntax characteristics of the ten high streets with their surroundings, to see if they were significantly different in measures of integration and choice at radius 400, 800, 1200 and 2000.

Table 2 shows the results of this comparison measured by counting how many standard deviations (SD) away the average syntactic value of accessibility for each high street is when compared to its wider setting for both Choice and for Integration (which have been shown to be predictors of through and to-movement, respectively). Low SD is indicative that the accessibility level of the high street is very close or similar to the average accessibility level of the surrounding area. High SD means that the high street's accessibility values are more spread away from the mean, which is indicative of the high street being more accessible than the surrounding areas.

Overall, it can be seen that the majority of the high streets are more integrated than the average for their surroundings; at least 1 standard deviation higher than the average value of accessibility of the surrounding area. The results suggest that some high streets such as Bethnal Green Road, Deptford High Street and Southall Broadway have a very strong core both at local and wider scales of movement (up to 3 standard deviations higher than the mean value for the surrounding area), suggesting they act both as a destination to and a place to move through. Others, such as St John's Wood high street and Walworth Road act as a local destination only for up to 10 minutes of walking, after which it could be said that they fade into the background of trips of longer lengths. For the Burnt Oak, Wimbledon Village and Putney cases, the high street remains the core of the neighbourhood across the different scales of movement. Romford High Street peaks at an approximation of 10 minutes (800) and 25 minutes (r2000) of walking. North Harrow's high street acts more as a destination through the area.

Locality	Choice			
	R400	R800	R1200	R2000
Bethnal Green Road				>1SD
Burnt Oak				-
Deptford High Street	>1SD			
North Harrow	-			
Putney High Street	-			
Romford High Street				
Southall Broadway	-			
St John's Wood High Street				
Walworth Road				
Wimbledon Village High Street	-			

Locality	Choice			
	R400	R800	R1200	R2000
Bethnal Green Road				>1SD
Burnt Oak				-
Deptford High Street	>1SD			
North Harrow	-			
Putney High Street	-			
Romford High Street				
Southall Broadway	-			
St John's Wood High Street				
Walworth Road				
Wimbledon Village High Street	-			

Colour range indicates mean values ranging from 1SD (orange) through to 3SD (violet)

Table 2 - Standard deviation of the average syntactic values of the high street in comparison to the average syntactic values of its surroundings up to 2000 meters from the high street centre point

In fact, all high streets with a recorded MEB presence of greater than 20% are more integrated with respect to their surrounding areas than their low-MEB counterparts across scales – integration often increasing as scale increases. Moreover, all high MEB high streets have a large amount of Retail, Retail Food and Food and Drink functions. Bearing in mind their high rates of large scale integration, this suggests that they function not only as local high streets, but are also able to make the most of their spatial configuration to serve people making trips from farther afield. It should be noted that in the case of both Southall Broadway and Bethnal Green Road, these high street spaces are in fact arterial routes through the city in these areas (in the case of Southall Broadway, it seamlessly changes name as it transforms from a local high street to an arterial route both to the east and to the west). On the other hand, low-MEB high streets (Walworth Road, Putney High Street and St John's Wood High Street) appear to be functioning primarily as local centres.

The findings in this section tie in with Hall's claim that minority ethnic commercial centres are located 'physically near to the centre but perceptually distant from it' (Hall 2011), p. 2572). Their high spatial integration allows for the footfall required for commercial viability whilst their perceptual location in the 'urban margins' provides an environment conducive to the emergence and presence of alternative cultures and economies.

4.2 BUILT FORM ANALYSIS

Analysis of the built form characteristics of the high streets measured plot size to see if it affects levels of MEB diversity (namely, whether smaller plots were associated with a greater number of different minority ethnic businesses). Figure 5a shows that the median score of MEB diversity for the ten case studies is around 0.5 and the middle 50% of scores fall between 0.3 and 1.2. However, the distribution is quite skewed, with the top 25% of diversity scores stretched over a wider range. The skewness of the distribution suggests that MEB diversity varies markedly across the urban blocks of each high street. Whether these differences hold when comparing between the high streets is examined as follows.

When the individual high streets are examined (Figure 5b), the scores vary in their distribution across the high streets. For example, both Walworth Road and Southall Broadway have a tight cluster of diversity scores which is indicative that all their blocks have similar levels of diversity (despite the fact that Southall Broadway has overall a much higher score of diversity than the Walworth Road. In contrast, in the case of North Harrow and Bethnal Green Road, the blocks have the whole spectrum of MEB diversity present along the street.

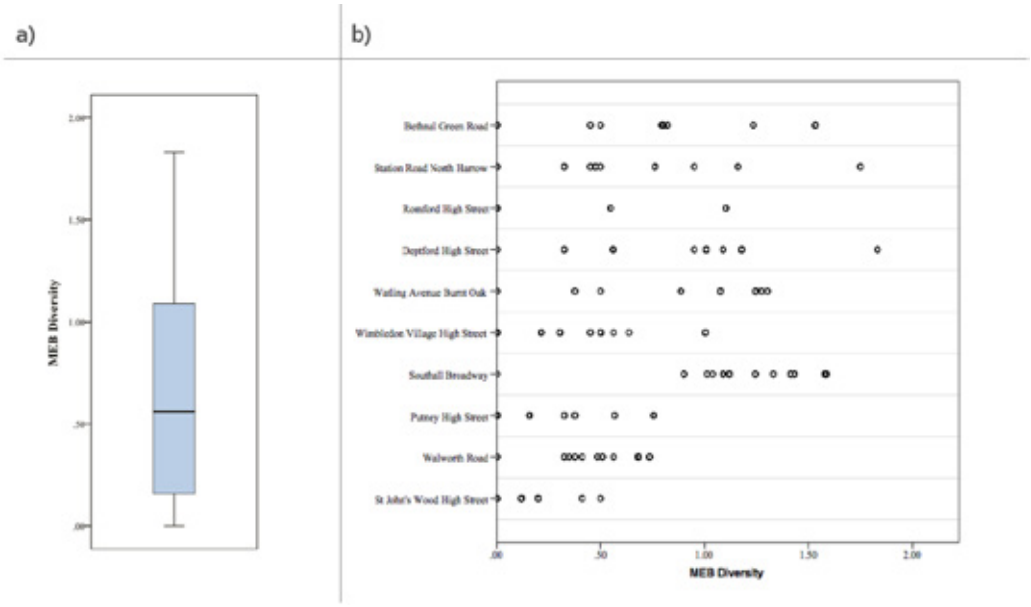

Figure 5 - MEB diversity characteristics across the high streets of the ten case studies

In order to test whether MEB diversity is supported by the built form character of the available units, the average area of MEB units across the ten sites was compared. It was found that the average for MEB units was 112 square metres as opposed to an average of 149 square metres for non-MEB units.

When the building blocks are broken down by MEB presence (see Figure 6), it can be seen that across the high streets overall, MEB units are much smaller in size than those building units that do not have MEB. The exceptions to that rule - Wimbledon Village High Street and St John's Wood High Street – were cases with low ethnically diverse and low deprivation areas, where restaurants and bars were pushing up the average building footprint of MEB units and Watling Avenue Burnt Oak, an area with a population with high rates of deprivation, who are served by large supermarket units with specialized food offerings, such as Polish and Turkish food and fresh fruit and vegetables at cheaper prices than the local chain supermarkets.

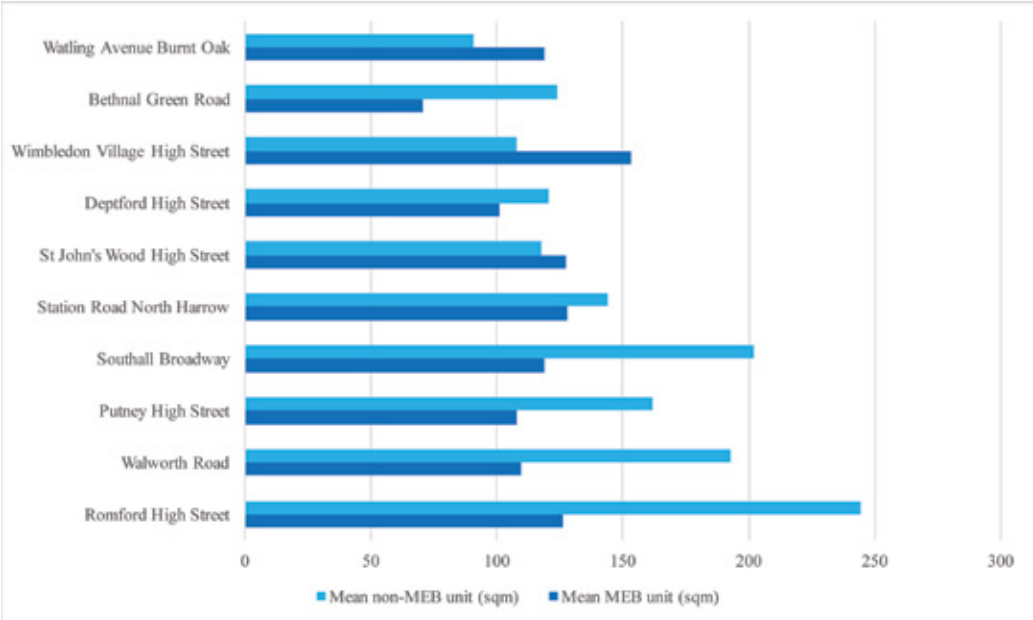

Figure 6 - Comparison of building block sizes for the units with and without MEB presence

Since, the MEB diversity index is derived from the both abundance of a particular type of land use and the number of land uses within a block, it is plausible to suggest that the density of buildings within a plot has an indirect effect on how much MEB diversity variation is potentially offered across the high-street (namely that the built form structure of the high street blocks influences MEB diversity). Figure 7 tests this proposition. Whilst only showing a marginal trend towards smaller units being associated with a diversity of MEBs, it opens the way for further research to see the extent to which land prices and land economics in general help shape the relationship between the availability of smaller units and an increase in the diversity of MEB units.

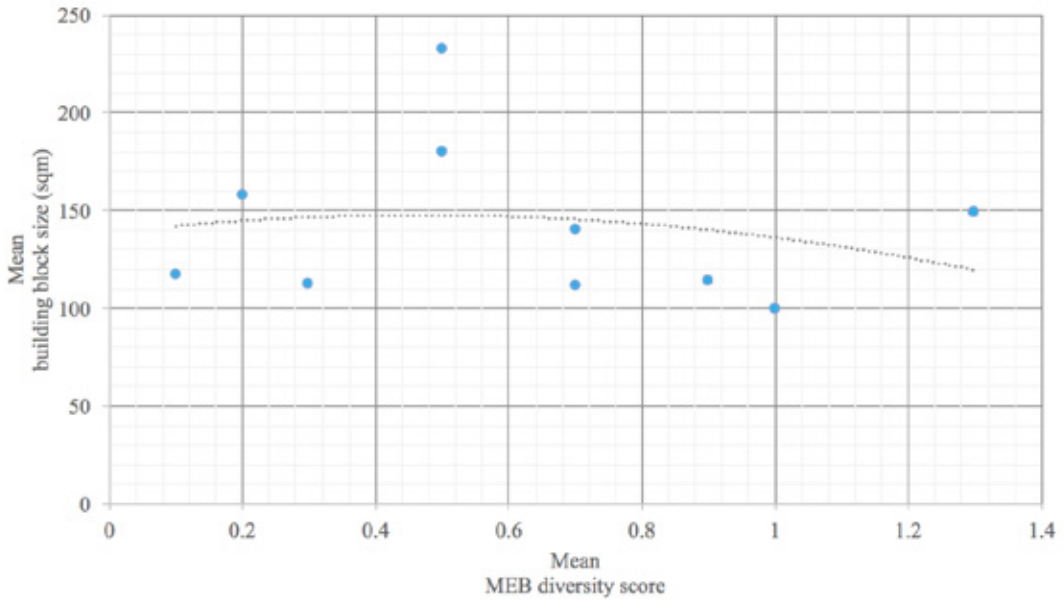

Figure 7 -MEB diversity in comparison to size of the building block

5. CONCLUSIONS

This paper set out to examine the spatial character of high streets with a presence of minority ethnic businesses. It has found that in London's super-diverse context, almost a quarter of the 1108 units recorded across the 10 cases were visibly identifiable as such. While the cases were sampled with care to represent the full range of cases, it is perhaps unreasonable to draw too strong a set of conclusions from the findings. However, analysis of both the background residential population and MEB presence on the high street seems to support the idea that there are in fact three distinct types of MEB presence on the high street, ranging from low ethnic population areas, where MEB presence is limited to three primary functions of retail, food and food and drink; areas that exhibits a high ethnic mix of communities, and a third category of mono-ethnic areas. This finding begins to indicate that where there is an embedded minority ethnic neighbourhood presence there is a more diverse MEB presence. Further research needs to consider the extent to which this also corresponds to the presence of deprivation within the wider neighbourhood – namely, is there a secondary benefit from an MEB presence to populations living within the surroundings of such centres? However, when the three MEB groups (ethnic market, mixed and UK British) were tested statistically, no difference was found in their background ethnic diversity, yet our analysis found that there is a marked relationship between MEB presence and background ethnic diversity: high ethnic diversity leads to high MEB presence on the high street. We elaborate on this analysis in another forthcoming paper.

From the point of view of the built form and space syntax analysis, the results suggest that the morphological structure of the high street blocks affects how much MEB diversity variation can be found on the high street. This suggests that the MEB diversity is quite different both across the urban blocks and across the high streets. MEBs tend to occupy smaller square metre area units within the blocks in comparison to non-MEB units. Smaller average building blocks unit size appears to support and promote not only higher MEB diversity, but brings more commercial activity to the area overall.

High deprivation areas have a tendency to attract a greater MEB presence. This may be attributed to the ethnic make-up of the background residential presence in an area and the fact that in many cases minority and migrant communities gravitate to high deprivation areas. However, what is clear from these findings is that given the right spatial network and built form settings: namely relatively high local integration and a larger number of smaller business units, a population that suffers from relatively greater deprivation can gain the benefit of the greater range of shops and businesses within easy reach of their area – providing not only opportunities for cheaper goods, but increased sociability and access to work. Arguably, our findings suggest that even a small number of units can bring an additional dimension and character to the High Street beyond the offerings of national chains. The relatively ramshackle, shabby premises that prevail in some of the case studies are a crucial way both for the temporary and impromptu sort of uses necessary for contemporary living but also for ensuring that local businesses can have access to affordable and flexible space and thus to the wider market at all stages of the economic cycle (Dobson 2016), but also for building the early stages of businesses that both serve local needs, but also to test its economic viability. As we have argued elsewhere, the spatial configuration that supports a local, diverse town centre to be connected to the wider city network allows for a range of people to move, encounter and interact in the most beneficial way.

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