

Understanding the relationship between private rented properties and anti-social behaviour in Enfield

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1. Introduction

There is a growing awareness within Enfield that the housing market has already changed significantly since the 2011 census. It has been driven by population growth, housing costs and benefit changes brought about by welfare reforms.

This has meant that the understanding of Enfield Council is already behind the very fast moving circumstances of the borough. One of the key areas where this change is being seen is in the private rented sector of the housing market.

In common with the rest of London, Enfield has seen a significant growth in households. Between 2001 and 2011 for example the number of households increased by 8.62% to 119k; however, there was even greater change in patterns of home ownership and tenure.

In this period the percentage of social housing increased by 9% to 21k households but the percentage of owner-occupied housing falls 11% to 69k. The biggest relative change however was in the private rented sector which more than doubled in size to 27k.

At the same time there is a strong view that certain parts of the borough are seeing negative externalities of this rapid change. Currently there is only a scheme for regulating privately rented HMOs under the 2004 Housing Act but the scheme is limited in scale and bears little relationship to the believed size of the privately rented sector today.

In some areas this growth is manifested in anti-social behaviour, potentially from more transient tenants than the borough has been used to, but in other ways it is the costs of more dumping of waste, more turnover, more overcrowding and poorer management of housing stock in the private rented sector. There is, at the moment, no clear picture of this.

There are a number of policy options that the council could explore to deal with these issues, but prior to that there needs to be a much clearer understanding of where the private rented sector is within the borough, where privately rented properties are likely to be, and how these relate to some of the anti-social behaviour that has been in evidence in the last two years.

This work commissioned by Enfield Council aims to fill in some of these gaps. In the first instance, the key priorities for this work are to:

- Obtain an improved understanding of how private rented sector properties are distributed across the borough
- Identify how private sector tenures relates to or links with Anti Social Behaviour (ASB) and whether there are any geographic concentrations of those links or clearer links between certain tenures and ASB
- Create a ‘master gazetteer’ which lists all the households in the borough and what property tenure each property is likely to be based on an analysis of identifiable risk factors such as high turnover of tenants at an address.



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This dataset will allow for further analysis and cross reference against other datasets that are being collected from across the local authority and from partners.

In a later stage there are also longer terms priorities for the work to be determined by Public Health and other partners which will follow.

2. Methodology

According to ONS the population of Enfield is estimated to total 314,000. Based on the Local Land and Property Gazetteer these are spread among 128,500 dwellings each with an address and a Unique Property Reference Number (UPRN). Of this total, 111k are privately owned.

Although data exist on social housing, halls of residence, care homes and institutions and some HMOs, there are no comprehensive data on the private sector rented properties – e.g. whether they are HMOs or single family households or privately owned and occupied.

The London Borough of Newham has pioneered a technique that enables the probability of whether a dwelling is privately rented or not to be determined. It is a technique based on property profiling and the use of risk factor analysis.

Newham, which has already introduced a selective licensing scheme, has issued over 29,000 licences and this technique is being used to help identify those remaining unlicensed rented properties in the borough.

The risk factors used include variables such as whether it is a benefit household, there have been multiple changes of residents at an address or changes in the persons responsible for paying Council Tax.

Although many other risk factors could be hypothecated, in most cases there are no comprehensive data available on which to base their predictive power without establishing new data collections or undertaking large scale surveys.

The approximate predictive power of each of the known risk factors used in Newham was established through follow up by visits to properties by officials considered to be privately rented but not yet licensed.

Based on information for each address, markers or risk factors were created that were considered to be indicative of an address, i.e. a UPRN, being in either one of the three categories: HMO, single family or owner occupied.

Administrative data sources

The key administrative sets used in this analysis were: Council Tax records, Council Tax Benefit (now Council Tax Support - CTS), Housing Benefit, Housing Tenure and the Electoral Roll.



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In our methodology, addresses in each of these datasets were address matched to the Local Land and Property Gazetteer using an automated address matching algorithm and semi-automated clerical matching techniques.

This involved many hundreds of thousands of record matches stretching back 3 years in order to establish turnover at each address. The output of this process is a list of addresses in the privately owned sector each with a risk measure of whether a property is an HMO, single family rented or owner occupied.

Risk analysis

Because the methodology is probabilistic, it does not give a definitive answer as to whether a property is privately rented but a quantified risk based on risk factor weights modelled on data derived from visited properties for which actual rental status could be determined.

In previous work for Newham, different combinations of risk factors were systematically analysed for their predictive power in terms of any of the three outcomes. This process resulted in the creation of three binarised sets of risk factors, one for each outcome (i.e. a risk factor was either present at an address or not).

For each risk factor the odds were calculated using the model. Four risk factors with the best predictive power were used giving rise to 16 possible risk factor combinations per address for each outcome. Odds schedules were then tabulated and are explained in the results section below.

Each address was then given a risk score based on the risk factors identified in the previous analysis linked to the odds of one of the three outcomes. A key assumption was that the same risk factors identified from visited properties in Newham similarly applied to properties in Enfield – for example high turnover at an address or benefit status.

Although the identified risk factors are highly intuitive and plausible, the analysis is not without its limitations. The sample of visited properties is rich in information but relatively small in terms of sample size and it is also based on a different London borough.

This has four possible effects on the analysis:

- First, although selected risk factors are generally statistically significantly different from zero at the 95% level of confidence, confidence intervals tend to be wide
- Second, not all possible risk factor combinations are observed in the data collected during visits so far. This means that the reported odds of them being in either category are based on extrapolation of risk factors present in other categories which had been visited
- Third, some risk factors may overstate the effect in some cases where prior selection criteria had been used to identify a particular property.



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- Fourth, risk factor weights in LB Newham may not be identical to weights in Enfield.

Anti- social behaviour

A key concern of Enfield Council is the perceived growth in anti social behaviour and the possible association with a growing rented sector. We were supplied with a database consisting of over 29k reports of ASB in the borough between April 2011 and July 2013.

Data on ASB can refer to an incident at an address on in another location such as a shopping centre or a residential street. Whilst the data supplied contained geographical co-ordinates relatively few records contained the actual property addresses of incidents and the location was often captured using only free text descriptions, making it difficult to standardise.

Of the 29,481 ASB incidents recorded between April 2011 and July 2013, only 1530 incidents could be uniquely matched to a property address. Many others could not be matched uniquely because they shared the same geographic co-ordinates with other addresses - in most cases properties in blocks of flats.

All incidents however could be mapped and the density of incidents by local area were correlated and visually compared with properties identified as being most likely to be private sector rented properties. In this way any geographical correlation between high risk properties and the incidence of ASB could be tested.

3. Results

In this section we use the linked data sets to identify HMOs and single family rented properties.

(a) HMOs

The risk factors for HMOs are as follows:

- **No current Council Tax Benefit recipient at address:** A property **not** receiving Council Tax Benefit is estimated to be 3.1 (1.1 to 9.1, p=95%) times *more* likely to be HMO status than a property **receiving** Council Tax Benefits. Properties receiving Council Tax Benefit tend to be older person households, or owner occupied.
- **Two or more changes in Council Tax liable surname in last 36 months:** A property in which the surname of the person responsible for paying Council Tax had changed two or more times in the previous 36 months (indicating a change in account holder) is estimated to be 1.1 (0.5 to 2.6, p=95%) times more likely to be HMO status.
- **At least one change in electoral roll registrants in last 12 months:** Properties in which one or more surnames of current registrants at an address were not present the previous year were estimated to be 2.1 (0.9 to 4.5, p=95%) times more likely to be HMOs than properties where there had been no changes.



- More than three surnames on Electoral Roll at address in last 36 months: Properties with more than three surnames registered at the address over the previous 36 months is estimated to be 6.9 (2.9 to 16.5, p=95%) times more likely to be HMOs than properties with three or fewer. This is the most predictive of all the risk factors selected

Table 1 shows the number and proportion of properties impacted by each risk factor combination and the comparable proportion of households in each category in Newham as a benchmark.

The column to the right shows the relative risk score with risk categories ranked from high to low. These are obtained by multiplying the risk factor weights at the foot of the table under each risk factor. A risk score of say 10 means that the outcome is 10 times more likely than if none of the risk factors were present.

The results show:

- The properties in the three highest risk categories (rows 1 to 3) total 3.5k with 12.7k properties in the top four. The top three account for 3.1% of properties in Enfield and 12.7% in Newham. If the fourth category is added then the percentages are more comparable (11.5% and 13.7%)¹. The difference arises because Enfield has a lower turnover of Council Tax liable persons than Newham.
- Most Enfield properties are in risk category 12. These are properties which do *not* receive Council Tax benefits and have no other risk factors associated. There are 77k such properties altogether accounting of 69% of all privately owned properties. This compares with 36.8% of all properties in Newham and most probably indicates owner occupation but also the more settled, stable and affluent character of Enfield.
- The top seven risk categories are all characterised by a relatively high number of electoral registrants at the addresses affected. However, categories 5 to 7 are small compared to higher categories and do not receive any Council Tax Benefit. The total of the percentages in these seven categories are comparable with those in Newham.
- Two key factors that separate the experiences in Enfield and Newham are that in Newham there appears to be a much higher turnover in Council Tax liable persons in the previous 36 months and a greater turnover of Electoral Roll registrants.

¹ Note that this does mean that all these properties are HMOs just that there is a much elevated risk of them being HMOs.



Risk category	Enfield residential properties	% of all households	% of all households (Newham)	No Council Tax Benefit recipient at address current snapshot	Two or more changes in Council Tax liable surname in last 36 months	Electoral roll registrants changed in last 12 months	More than three surnames in Electoral Roll registrations at address in last 36 months	Derived risk score
1	435	0.4	6.9	Y	Y	Y	Y	48.8
2	916	0.8	1.2	Y		Y	Y	43.8
3	2,098	1.9	4.5	Y	Y		Y	23.6
4	9,266	8.4	1.0	Y			Y	21.2
5	8	0.0	1.5		Y	Y	Y	15.9
6	30	0.0	0.1			Y	Y	14.3
7	58	0.1	1.5		Y		Y	7.7
8	738	0.7	6.3	Y	Y	Y		7.1
9	544	0.5	0.2				Y	6.9
10	1,525	1.4	1.9	Y		Y		6.3
11	11,881	10.7	20.7	Y	Y			3.4
12	76,515	69.1	36.8	Y				3.1
13	23	0.0	2.0		Y	Y		2.3
14	68	0.1	0.4			Y		2.1
15	435	0.4	7.1		Y			1.1
16	6,254	5.6	8.0					1
total	110,794	100.0	100.0	3.1	1.1	2.1	6.9	

Table 1: Risk schedule for stratification of HMO properties

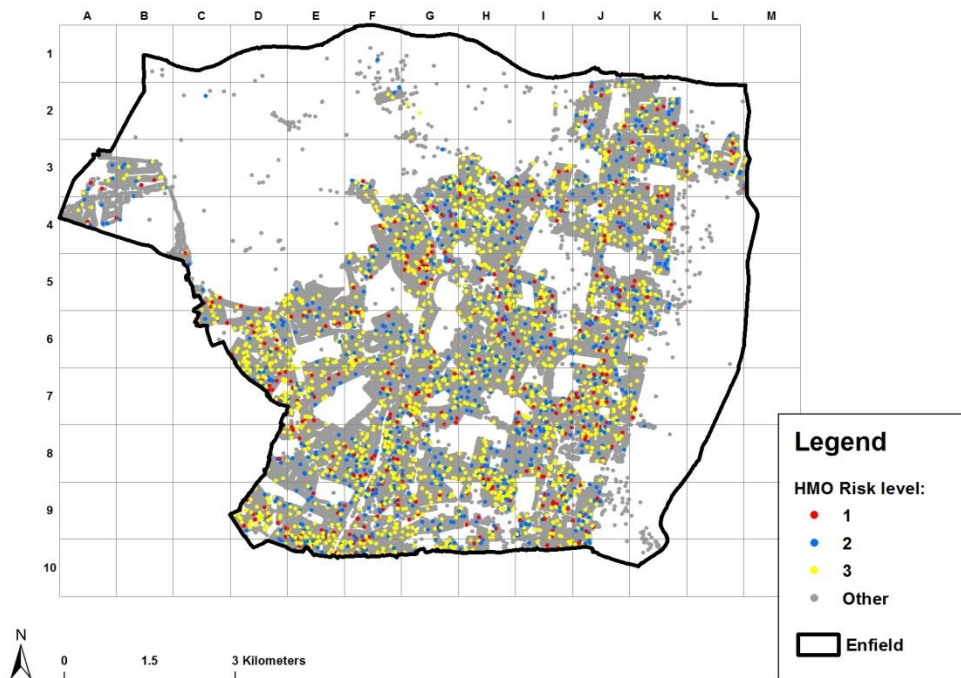


Figure 1: Sample map showing the distribution of properties identified as being a high risk of being HMOs (risk categories 1 to 3 in Table 1 refer)



(b) Single family rented properties

The risk factors for single family rented properties are as follows:

- No Council Tax Benefit recipient at address: A single family privately rented household is less likely to receive Council Tax Benefit but more likely to receive Housing Benefit (see below). Not in receipt of Council Tax Benefit increases the odds of private rented status 1.6 times (0.9 to 4, p=95%) times.
- Two or more changes in Council Tax liable person surname in last 36 months: As with HMO status two or more changes in Council Tax liable person surname is also predictive of single family status. In this case the odds of a property being single family rented status is increased 1.6 (1.00 to 2.47, p=95%) times.
- Two or less adult electoral registrants at address: We sought demographic variables that were predictive of single family status based on the number of adults at an address (no data on children were available). The only available measure was whether there were two or less adults at an address. It is estimated that this factor increases the odds of private family rented status 1.2 times (0.74 to 1.95, p=95%) times.
- Housing Benefit recipient at address: Rented single family households can be identified by their Housing Benefit status. This is by far the strongest of the four predictive risk factors, increasing the odds of identification 4.7 (2.63 to 8, p =95%) times.

Table 2 shows the number and proportion of properties impacted by each risk factor combination and the comparable proportion of households in each category in Newham as a benchmark.

The column to the right shows the relative risk score with risk categories ranked from high to low. These are obtained by multiplying the risk factor weights at the foot of the table under each risk factor.

The results show:

- Although the number of properties in the highest risk categories is greater for single families than for HMOs, the certainty with which it is possible to predict single family privately rented status is lower than is the case for predicting HMO status other things being equal.
- The first eight risk categories are all associated with Housing Benefit plus none or more other factors. There are 19k households in this group of which 15k are in the first three risk categories.

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- The first three risk categories account for 13.8% of properties as compared with 4.6% in Newham. The difference arises because a higher proportion of households in Newham receive Council Tax Benefit.
- Risk category 11 contains most households. These are properties that do not receive Council Tax Benefit and in which there are two or less adults. From the evidence of the risk score these households are more likely to be single family owner occupiers.
- Their counterpart in Newham is half the size in proportion but this is because more properties are likely to be on Council Tax Benefit or have changed ownership in the previous 36 months.

Risk category	Enfield residential properties	% of all households	% of all households (Newham)	No Recipient of Council Tax Benefit	Two or more changes in Council Tax liable surname in last 36 months	2 or less Electoral roll names currently at address	Recipient of Housing Benefit	Derived risk score
1	3,638	3.3	2.6	Y	Y	Y	Y	14.3
2	2,304	2.1	1.3	Y	Y		Y	11.9
3	9,382	8.5	0.7	Y		Y	Y	9.1
4	3	0.0	6.4		Y	Y	Y	8.8
5	3,952	3.6	0.2	Y			Y	7.6
6	3	0.0	2.9		Y		Y	7.3
7	3	0.0	3.2			Y	Y	5.6
8	5	0.0	1.0				Y	4.7
9	5,856	5.3	24.1	Y	Y	Y		3.1
10	3,354	3.0	10.3	Y	Y			2.6
11	47,861	43.2	20.4	Y		Y		2.0
12	301	0.3	1.3		Y	Y		1.9
13	27,027	24.4	19.6	Y				1.6
14	217	0.2	1.5		Y			1.6
15	5,431	4.9	2.6			Y		1.2
16	1,457	1.3	1.9					1
total	110,794	100.0	100.0	1.6	1.6	1.2	4.7	

Table 2: Risk schedule for stratification of properties at higher risk of being single family privately rented properties

4. Incidence of ASB in Enfield

Enfield Council is concerned about the levels of reported anti-social behaviour in the borough. Based on the data provided to us, there were 29k reports of ASB between April 2011 and July 2013.

Figure 2 is a chart of the monthly variation in reported ASB in this period. The horizontal dotted line is the monthly average over the same period (just over 1000 reports per month).

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It shows that in 2011 reports fluctuated before stabilising and trending downward in 2012 and 2013. From May 2013 ASB started to increase once more.

Instances of ASB in Enfield are reported under 50 different categories but seven categories account for 88.2% of all incidents². These are rowdy or inconsiderate behaviour (50.8%), rowdy or nuisance neighbours (10.4%), noise (8.6%), malicious or nuisance communications (7.1%), abandoned vehicles or vehicle nuisance (8.3%) and animal problems (3%).

The remaining 11.8% of incidents cover a multitude of categories none accounting for less than 2% of the total. Because of the overlapping and subjective nature of many of the descriptors it does not make sense to prioritise or distinguish between them for the purposes of this analysis for which the primary aim is to establish an empirical link between and type of ASB and the privately rented sector either directly or by association. However, an annex provides a more detailed breakdown by category.

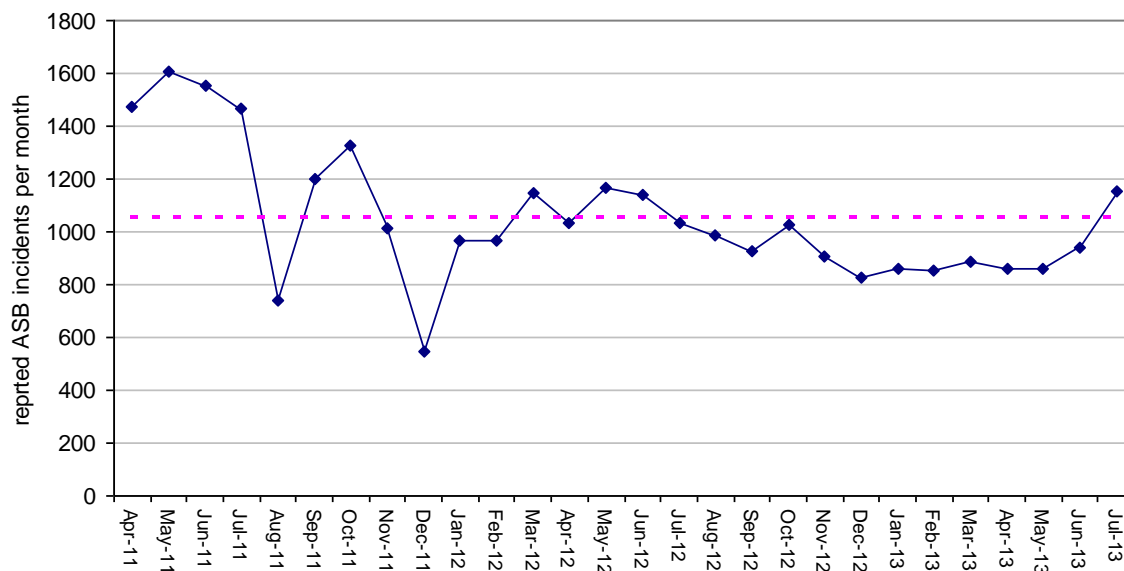


Figure 2: monthly number of reported ASB incidents April 2011 to July 2013

Linking ASB with private rented sector

Of the small number of properties which could be associated uniquely with an address we found an elevated risk of ASB reported at addresses where there had been evidence of change of ownership or change of people living at the address.

This was evidenced by changes in the Council Tax liable account surname or in higher movement on the electoral register. As the number of uniquely linkable addresses was very low compared with the total number of ASB incidents it is not possible to generalise this finding without corroborative evidence.

² Sometimes an incident may be reported under more than one category



In order to investigate the incidence of all 29k ASB incidents we divided Enfield into a 1 x 1 square kilometre grid and counted the number of incidents in each cell. We then divided through by the number of residential properties in each cell to obtain a rate.

By this we mean that we calculated the frequency of ASB in each cell relative to the number of properties in that cell. If this rate was high and that cell contained properties at high risk of being privately rented then it would be possible to draw an association between privately rented households and the incidence of ASB. Finally, we removed cells with small numbers of properties to avoid possible distortional effects caused by a low denominator leaving 70 cells altogether.

Each cell in Figure 3 is colour coded according to which quartile of the rate of ASB incidents it falls within. If ASB rates are in the lower quartile of all cells the cell is coloured green (i.e. rates are in the bottom 25%); if the rates fall into the inter quartile range they are coloured amber (50% of all cells); if they fall into the upper quartile they are coloured red (25% of all cells)³.

Overlaid on the map are the number of properties at highest risk of being either an HMO or single family rented property i.e. row one in Table 1 and Table 2. The aim of the map is to detect whether there is evidence of a geographical correlation between ASB incident rates and the number of previously identified high risk HMO or single family properties.

Visually the map suggests that highest risk HMO households (yellow dots) are more dispersed than highest single family households which are also more numerous (grey dots).

It also suggests that ASB incident rates are higher in the east and in the south, apart from two outliers at cells F3 and C4. Cell F3 contains Chase Farm hospital and cell C4 is mostly a wooded area.

The central area of Enfield where high risk properties are fewest also tends to be associated with the lowest incidence of ASB.

We measured the number of ASB incidents from east to west and from north to south in order to establish whether there was a systematic geographical pattern or trend in either direction.

Figure 4 shows the cumulative percentage of ASB incidents trending from west to east, high risk single family private rented properties and HMOs.

³ The cut offs are: <11.6 incidents, 11.6 to 25.8 incidents, and >25.8 incidents per 100 properties.

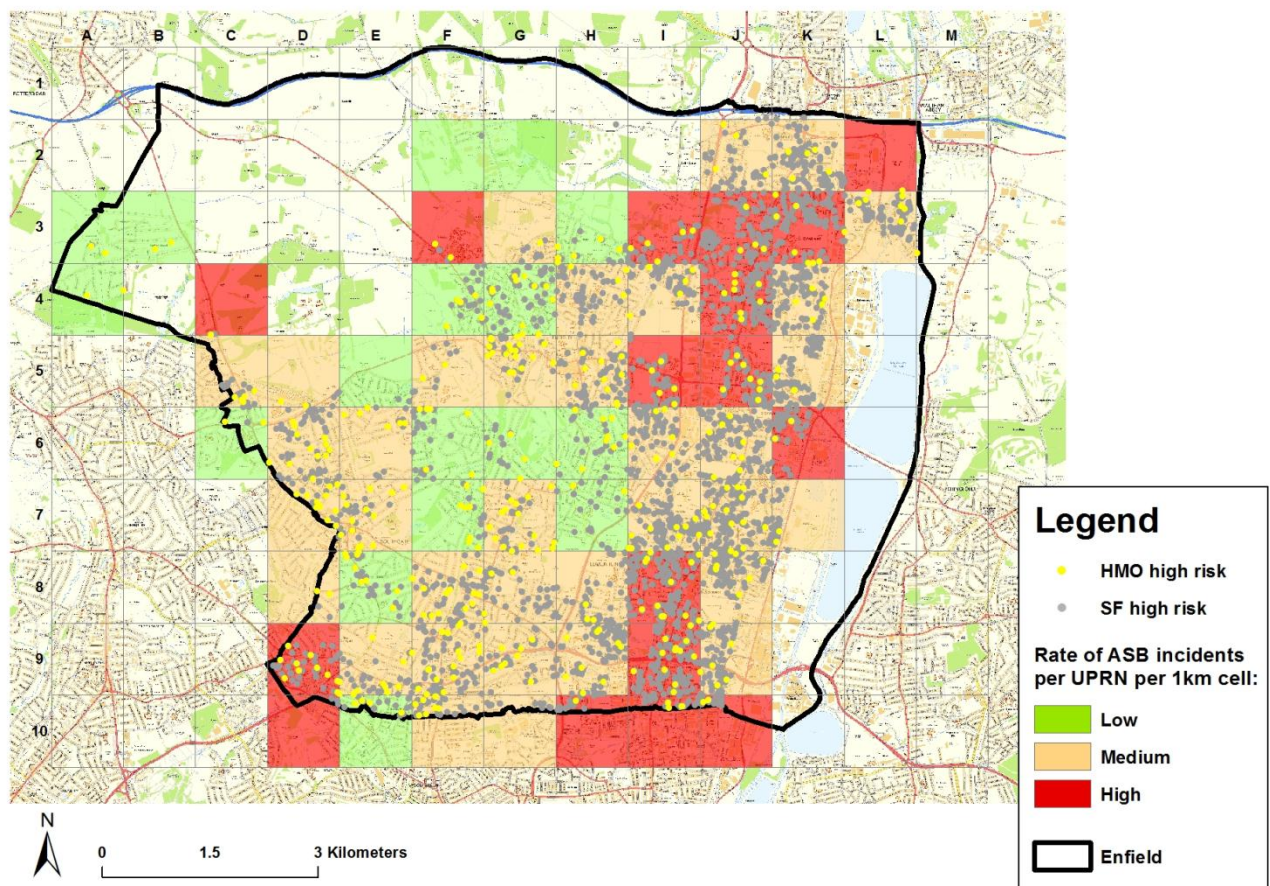


Figure 3: Map showing incidence rates per number of properties of ASB by 1 x 1 sq km grid cell with dots showing properties at highest risk of HMO or single family privately rented status (Enfield Town is at Cell H5 - amber). Contains Ordnance Survey data © Crown Copyright and database right 2013

It shows that the pattern of single family privately rented properties tracks ASB incidents quite closely suggesting that there is a relationship. However, this does not appear to be the case with highest risk HMOs which are more evenly dispersed in the west-east direction and so any substantive correlation is harder to detect.

If the same analysis is carried out from north to south we find that ASB incident rates and high risk properties track one another quite closely – both HMOs and single family privately rented properties (see Figure 5).



However, it is also apparent that the correlation between high risk single family rented properties and ASB incidents is still slightly greater.

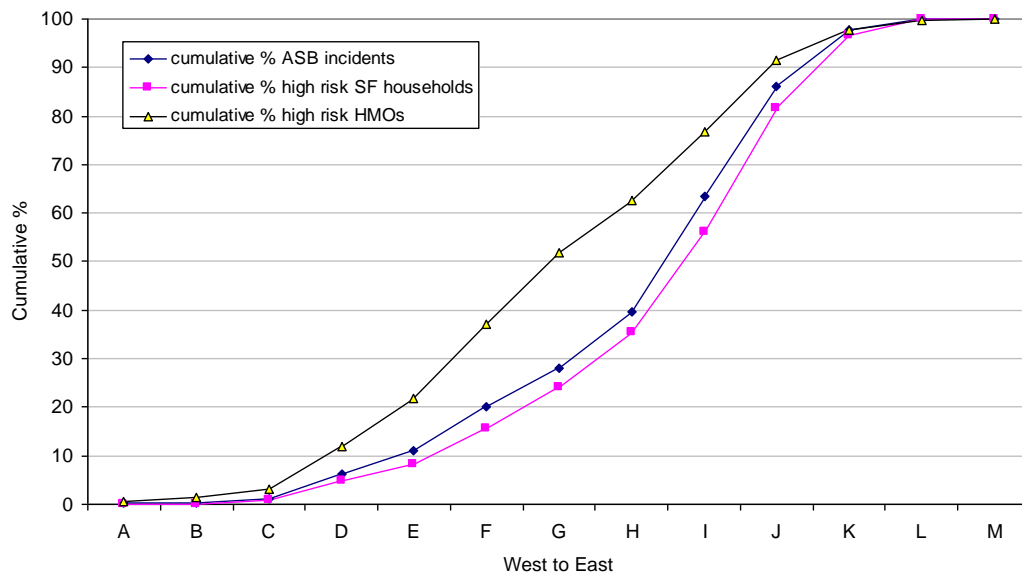


Figure 4: Cumulative percentage of ASB incidents and high risk private sector rented properties from west to east in 1km steps

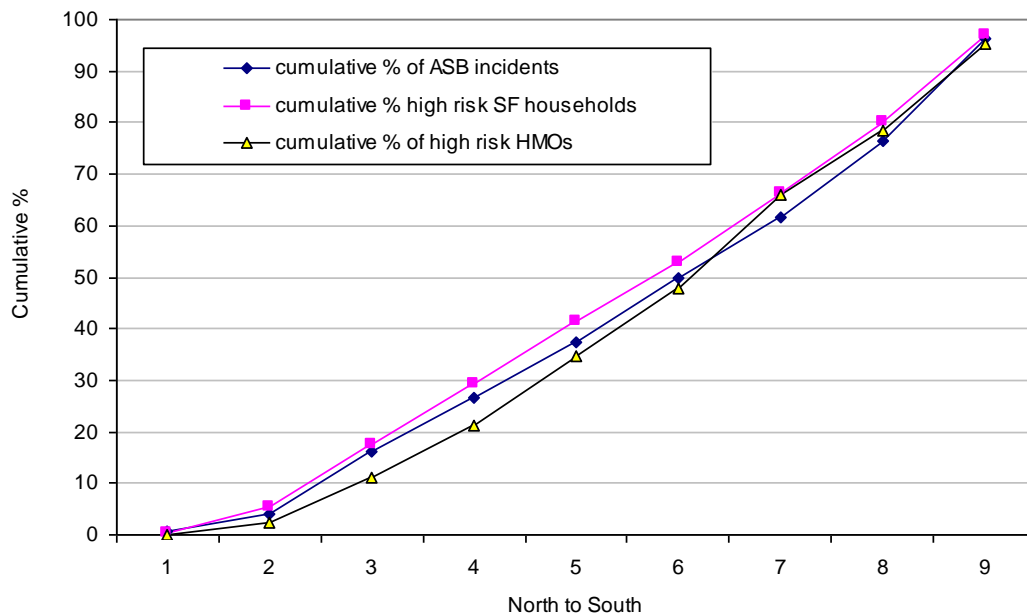


Figure 5: Cumulative percentage of ASB incidents and high risk private sector rented properties from north to south in 1km steps

In summary, we can say that highest ASB incident rates tend to be associated with highest risk single family privately rented properties as one travels east in the borough and with both

highest risk HMOs and single family privately rented properties as one moves from north to south.

Note that because we have not uniquely ascribed ASB to individual households (for reasons previously given) this does not necessarily demonstrate cause and effect. High risk single family properties appear to be more of a problem because there are more of them in the high risk categories and also show closer geographical correspondence.

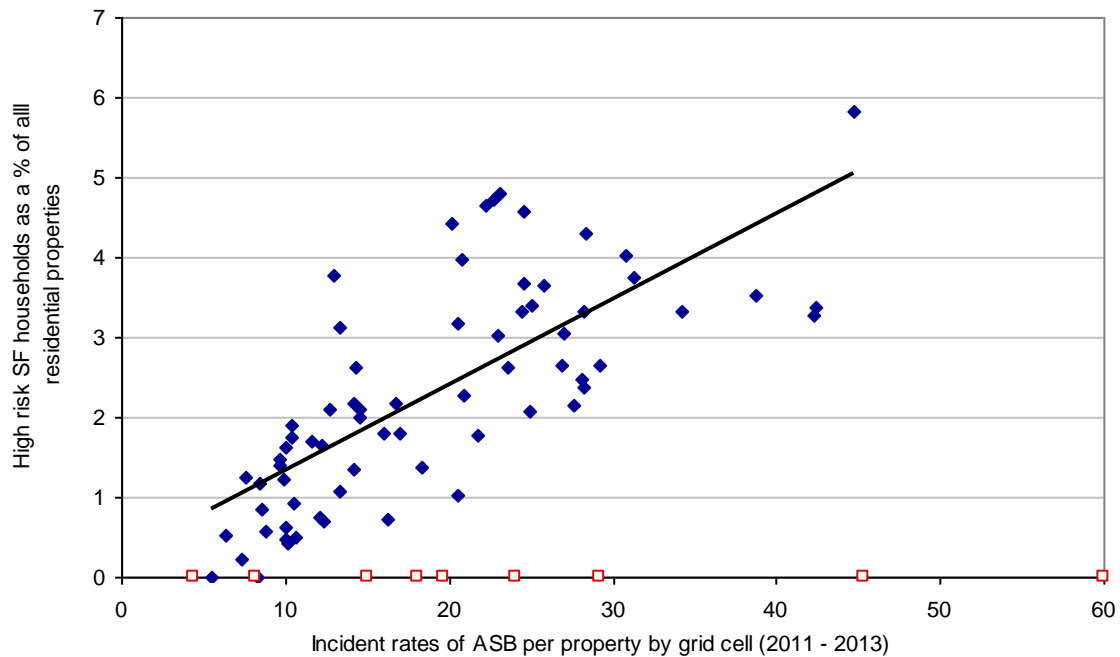


Figure 6: Plot of high risk single family rented households as a percentage of all properties in each grid cell versus ASB incident rates per property (Note: Square symbols denote outlier cells with no high risk properties and less than 100 households)

Most ASB is caused by noise or rowdy behaviour. Insufficient numbers of the incidents are recorded by address and so it hard to say with certainty what particular types of household cause it. The fact, above, that localities most affected tend to have more high risk properties suggests a link.

Figure 6 considers the issue in a different way. It is based on a plot of the percentage of high risk single family rented properties versus the ASB incident rates per residential property in each cell. In any cell, high risk single family properties range from 0% to about 6% of the total suggesting clearly that some localities and neighbourhoods are affected more than others.

The evidence suggests that there is a correlation between rented properties and incident rates of ASB although statistically the correlation is weak (in part because of outliers such as cell F3 in Figure 3). Outlier cells are defined as having no high risk properties and less than 100 households.



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With such a small number of properties and with none at high risk, any incident of ASB in these cells will tend to have an artificially disproportionate effect on underlying incident rates and so mask any systemic trends. If these outliers are removed (see symbols in Figure 6), the degree of correlation is improved considerably from about 50% to 74%.

5. Conclusions

There are no data to say whether a privately owned property is rented or owner occupied. However, there are several markers that have been shown in another borough to be correlated with and hence predictive of, a privately rented household. These markers or risk factors were applied to comparable data taken from Enfield and then analysed.

These risk factors discriminate between whether a property is an HMO, single family rented or owned occupied. The results are reported in the form of a risk assessment based on the number of risk factors applying to each address and deal with the first of two of these categories – HMOs and single families.

The results are not therefore categorical so that tenure type cannot be completely validated unless and until a property is actually visited. This means that the accompanying database risk assessing every privately owned property should be used indicatively and not as proof of tenure.

However, the indications are that the privately rented sector is substantial and certainly far bigger than the number of properties covered by the presently limited licensing scheme for HMOs under the 2004 Housing Act. It is also of interest that single family private rented properties seem to be more associated with ASB – perhaps because they are not as regulated.

Enfield Council's hypothesis that privately rented properties are associated with high levels of ASB also appears to have reasonable justification. In the limited instances where addresses were linkable, higher than average percentages of ASB were attributable to higher risk privately rented households.

More substantive evidence however was found by geographical association between reported incidents or rates of ASB and the co-location with higher risk households – especially potentially high risk single family private rented households.

Of course co-location is not proof of a link to an individual household or address but it is suggestive that levels of ASB and privately rented properties are associated even if exact causation cannot be established.

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Annex: Anti-social behaviour by category

	Description	Count	% of total
1	Rowdy or inconsiderate behaviour	15,880	50.8
2	Rowdy / nuisance neighbours	3,262	10.4
3	Noise	2,691	8.6
4	Malicious / nuisance communications	2,228	7.1
5	Vehicle nuisance / inappropriate use	2,598	8.3
7	Animal problems	936	3.0
8	Begging / vagrancy	485	1.6
9	Hoax call to emergency services	435	1.4
10	Fireworks	375	1.2
11	Trespass	351	1.1
12	Drugs offence	281	0.9
14	Prostitution related activity	268	0.9
15	Other	1,485	4.7
	Total	31,275	100.0