A formula for domestic abuse services in England – developing an ETHICAL response to domestic violence against women

Paper 2: Location of services in England

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1   Introduction

This technical paper provides further detail on the methodology towards developing a formula for provision of domestic abuse services in England.

It is a work in progress, so please contact me with any queries, clarifications, challenges, or other feedback, so that later versions can be improved – thanks very much. info@womensjourneyscapes.net

It is part of the research project "Women on the Move: the journeyscapes of domestic violence", with further details and publications being available at: https://www.womensjourneyscapes.net/

2   An ETHICAL response

The project aims to underpin an ETHICAL response, highlighting seven key elements of an effective service provision: Eligibility, Type, Holistic, Independence, Capacity, Accessibility, Location.

- ➢ **Eligibility**
    - o rights and needs-based – a service infrastructure designed around women and children rather than forcing women and children to navigate a fragmented and ill-suited infrastructure.
    - o no location or risk-assessed exclusion criteria or rationing.
    - o not excluding women and children due to legal status – such as migration status, criminal convictions or debt – with any proceedings being put on hold until support and security have been provided.
- ➢ **Type**
    - o A range of types of services for a range of needs, including:
        - ▪ Women's Refuge accommodation + support
        - ▪ Other accommodation-based support
        - ▪ Non-accommodation services – one-to-one support
    - o Specialisms – around cultural, health needs, higher support needs.
    - o **Note** that core service needs not addressed in this formula include: Peer support, children's support, advocacy through complex and hostile systems.
- ➢ **Holistic**
    - o Services as only a part of wider co-ordinated and multi-agency responses so that women and children can journey through at their pace and need – involving and not involving the services and support they choose.
    - o Providing support on abuse issues in the context of other issues women and children may be experiencing over time.

- ➢ **Independence**
  - o Recognising the pervasive nature of coercive control within abusive relationships, the interactions and relationships of services with women and children must not replicate coercion, control, or limitations on freedom or autonomy.
  - o Service provision must operate with independence from statutory authorities (even if receiving funds from statutory authorities), including not sharing personal information inappropriately.
- ➢ **Capacity**
  - o Sufficient for the level of expressed need – at the point of need.
  - o Including an expected level of vacancy/voids/free capacity, so that service provision does not exploit or exhaust the workers or ration the availability of support.
  - o Flexibility – able to respond when needed – recognising that women have to seek help when they can and may be unable to wait on a 'waiting list'.
  - o Evidence-based – not reducing, developing or changing services unless there is clear evidence of needs.
- ➢ **Accessibility**
  - o Services must be constantly vigilant about barriers to accessibility – where women and children who deserve and would benefit from a service are unable to access it.
  - o This may be due to issues of Eligibility, Capacity, or Location; but may additionally be about addressing aspects of specialist support, legal status, and the attitudes, beliefs and behaviours of service providers.
- ➢ **Location**
  - o Women experience domestic abuse everywhere, so the location of services must enable both staying put and journeys – including return journeys where appropriate.
  - o All types of places – so that you can go as far as you need/ stay as near as you can.
  - o The location of help-seeking should not necessarily cement the location of longer-term resettlement.
  - o About fundamental eligibility as a survivor of abuse – violence against women as a human rights violation – to go and be wherever is best.

3   The scope of this technical paper

The elements of service provision characterised as Eligibility, Holistic, Independence, Accessibility are based on principles, and are evidence-based from past learning, research literature, human rights law, and experience of decades of domestic abuse

service provision. In terms of this research, these are discussed in other publications available via https://www.womensjourneyscapes.net/ .

The technical papers from this research are focused on the evidence base from quantitative data analysis for only three of these elements of service provision: Type, Capacity and Location.

This technical paper is on the Location of services in England. A separate technical paper is on the Type and Capacity of services in England.

The administrative data used to analyse help-seeking are from the Supporting People Programme of service provision (ODPM 2002). These data only record help-seeking to the extent that women successfully accessed these types of services due to domestic violence. They are therefore an under-count of overall help-seeking (which may be to other types of services and/or not involve services), as well as not reflecting the underlying need for help and support – including the other types of need highlighted earlier. The data are also increasingly historical. For further details of the data, analysis and limitations see the published article (Bowstead 2019).

4   Developing a formula for the provision of domestic abuse services in England

4.1   Notes on population and rates of help-seeking

It is important to note that numbers of women and children accessing services from each Local Authority are overwhelmingly associated with the population of that area. On that basis, the most straightforward and evidence-based formula for service provision would be per population. This has long been recognised with the target for minimum levels of women's refuge provision as 1 family bedspace per 10,000 population, which has existed – but never been reached – since the 1975 Home Affairs Select Committee (HMSO 1975, 2:xiii) and is enshrined in the Council of Europe approach on refuge/shelter accommodation (Council of Europe 2011b, 25). Any approach involving more complex formula calculations and/or needs assessments should consider whether it can be justified in terms of adding sufficient additional knowledge, or whether the cost would be better directed to actual provision rather than assessing the need for provision.

Given the overwhelming association of population with help-seeking, much that follows in terms of analysis (particularly considering Location) therefore uses rates of help-seeking to consider factors over and above population. In addition, given that the data used reflect successful service access, rates of help-seeking are also strongly associated with levels of service provision. To provide some counterbalance to this

effect, the rates of help-seeking used are those *from* the Local Authority in question (rather than *to*), but, for the overall majority of women's help-seeking this is the same Local Authority.

Rates of help-seeking are key to this attempt both to *account for* <u>and</u> to *provide infrastructure for* women's domestic violence help-seeking[1].The total help-seeking numbers include different strategies of relocation or not – Stay Put/Remain Local/Go Elsewhere (Bowstead 2021) – that may be a mixture of both choices and being forced upon women and children. In addition, rates of help-seeking to three different types of service are analysed: to non-accommodation services, to women's refuges, and to other types of accommodation services.

Analysis is based on the local authority women come <u>from</u> when they access services – so this is same local authority as the service when women Stay Put or Remain Local, but a different local authority from the service location when they Go Elsewhere. It therefore goes back at least one stage from the location where women happen to fetch up due to the (un)availability of services.

The process of formula development aims both to generate understanding of the processes and patterns of help-seeking; and to use that understanding as an evidence base for the provision that would begin to address more effectively the help sought.

4.2   <u>Notes on data sources</u>

There are four broad categories of data sources used in the analysis:
- Women's help-seeking strategies – the Supporting People Programme data of service access and exit due to domestic violence (DCLG (Department for Communities and Local Government) and University of St Andrews, Centre for Housing Research 2012); providing annual count data and the ability to generate rates
- Service location and capacity – from the Supporting People data (see above), from additional Supporting People records (DCLG 2011), and from Women's Aid Federation of England annual surveys (Women's Aid 2022a)
- Characteristics of places – data on a range of topics which could be associated with rates of help-seeking, service access and service exit.

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[1]N.B. The Supporting People Programme data do include male help-seeking due to the risk of domestic violence and include help-seeking where domestic violence is a secondary factor, but this formula focuses only on women's help-seeking where domestic violence is the primary reason. See separate briefing paper for details of male help-seeking due to domestic violence (Bowstead 2018).

- Characteristics of people (within the Supporting People Programme data) – demographic and circumstances data which could be associated with strategies (rather than rates).

This technical paper focuses on the evidence base and analysis to calculate a formula for Location of services. For a national formula for domestic violence service provision, it is brought together with the evidence base and analysis for type and capacity of such services (see the Type and Capacity technical paper) for a minimum capacity to meet expressed demand. This paper also points towards further potential uses for the geographical differences and clusters in terms of domestic violence help-seeking across England.

5   LOCATION – developing a place classification

5.1   Sample size and units

From the Supporting People Programme data, the number of women accessing these types of services (due to domestic violence) in England from each local authority area was calculated. The total over 8 years was n=177,893. This was only where risk of domestic violence was the primary need at the point of accessing the service (many more individuals have domestic violence as a secondary need) – so all the resultant classification and formula are for a minimum provision. In addition, the Supporting People Programme data included, for only part of the period, data on women leaving different types of services from each local authority area. The total over 3.7 years was n=63,360. These were only the types of services that were classed as housing-related support under the Supporting People Programme (ODPM 2002), and therefore did not include significant types of services within the non-statutory sector, such as children's services, counselling, and risk-based advocacy; nor any statutory sector services.

Units used – Type:
- the range of services were grouped into three alternative service categories: Women's Refuge / Other accommodation / Non-accommodation housing related support.

Units used – Location:
- administratively, the nations of the United Kingdom are classified spatially into units at a range of scales (ONS 2021). These include the four nations (Northern Ireland, Wales, Scotland and England) as well as regions, counties, unitary authorities and local authorities within these nations. The larger scale units are more diverse – less homogenous – in terms of understandings of place.

- the spatial units used in this project are the administrative classifications in place at the time of the most recent data used (ONS 2021), namely 9 English Regions, 152 English County/Unitary Local Authorities (Tier1), 326 English Tier 2 Local Authorities.

5.2   Place classification: Rationale and Methodology

The rationale and methodology was based on the publication "Using and developing place typologies for policy purposes" by Ruth Lupton, Rebecca Tunstall, Alex Fenton and Rich Harris (Lupton et al. 2011). Using their framework on pages 39-61, the initial questions are:

1. For what policy purpose is the place classification needed?
2. What kind of classification is best suited to this purpose?
3. What coverage and spatial scale is appropriate?
4. What existing tools and products exist at this coverage and spatial scale?
5. Is it necessary to develop a bespoke classification?
6. To what extent should the classification be theory-led or data led?
7. What kinds of variables should be included?

1. For what policy purpose is the place classification needed?

The classification is needed for analysis and policy development – capacity, type and location of service provision – because it may be that the nature as well as the extent of women's domestic violence help-seeking varies between places. Concentrations of particular types of help-seeking might relate to need, but they might also relate to provision. The causes of concentrations in place do not necessarily relate to need in the same place, as women often relocate due to their need for safety. In addition, much help-seeking is hidden/informal, and therefore the levels of need are not known. For example, there was an increase in stay put help-seeking when service provision for such non-accommodation support increased, which indicated a previously unmet need, rather than any associated reduction in relocation help-seeking (which did not occur).

In addition, the classifications of types of help-seeking are three-way – not binary. For example, if an area had a lower rate of relocating and 'Remaining Local' it does not indicate whether this is because a lower proportion of the population seek help due to domestic abuse, and/or whether more 'Stay Put' and seek help and/or 'Go Elsewhere' and seek help. Similarly, if an area had a lower rate of accessing women's refuges it does not indicate whether this is because of a lower rate of help-seeking per population and/or accessing other types of accommodation due to choice and/or availability. Understanding and dealing with any identified concentrations in

help-seeking is therefore not straightforward; and the discussion should be more about places of higher rates of that type of help-seeking, and how that should be addressed.

The following choropleth maps show the rates for the two different classifications of types of help-seeking used in this research for the 152 Counties and Unitary Authorities of England:

- Stay Put/Remain Local/Go Elsewhere
- To Women's Refuge / Other accommodation / Non-accommodation housing related support

To enable easier comparisons, the rates are standardised by using Standard Deviations from the mean rate for each type of help-seeking. Note that – visually – counties with a larger geographical area are more noticeable, and the rates for geographically-smaller unitary authorities may be less easy to spot on the map.
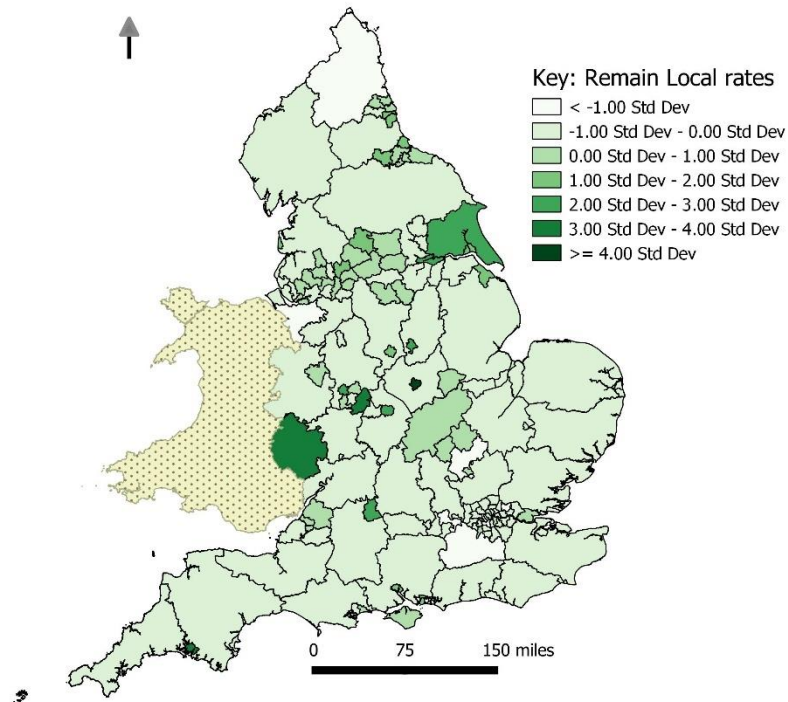
Map of rates of Staying Put in each English County/Unitary Authority

The mean annual rate of staying put and accessing service support for domestic abuse was 3.6 per 10,000 female population aged 16+ (1.5 per 10,000 total population). The range is from zero to 43.1 per 10,000 female population aged 16+ (17.7 per 10,000 total population).
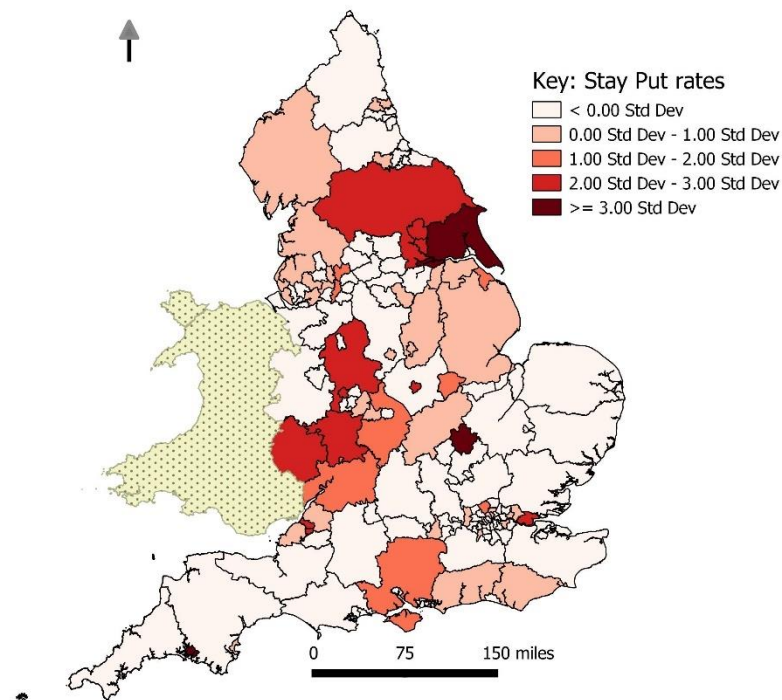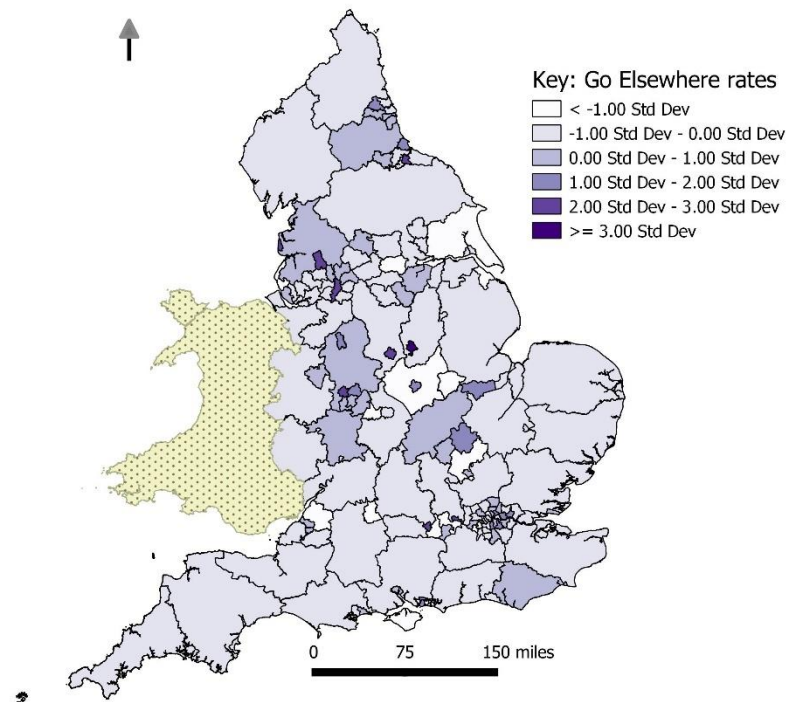
Map of rates of Remaining Local in each English County/Unitary Authority

The mean annual rate of remaining local and accessing service support for domestic abuse was 4.6 per 10,000 female population aged 16+ (1.9 per 10,000 total population). The range is from zero to 20.6 per 10,000 female population aged 16+ (8.3 per 10,000 total population).

Map of rates of Going Elsewhere from each English County/Unitary Authority

The mean annual rate of going elsewhere to access service support for domestic abuse was 4.1 per 10,000 female population aged 16+ (1.7 per 10,000 total population). The range is from 0.6 to 12.2 per 10,000 female population aged 16+ (0.3 to 5.0 per 10,000 total population).

The most extreme range of difference between local authorities is therefore in terms of staying put and seeking support, suggesting that this may be significantly influenced by the (non) availability of non-accommodation service support in different areas. This is similarly suggested by the fact that all local authorities experience women going elsewhere to seek support; and that this rate shows the smallest range of difference between the areas that women are leaving.

Map of rates of accessing non-accommodation services from each English County/Unitary Authority

The mean annual rate of accessing non-accommodation service support for domestic abuse was 5.7 per 10,000 female population aged 16+ (2.4 per 10,000 total population). The range is from zero to 56.9 per 10,000 female population aged 16+ (23.9 per 10,000 total population).
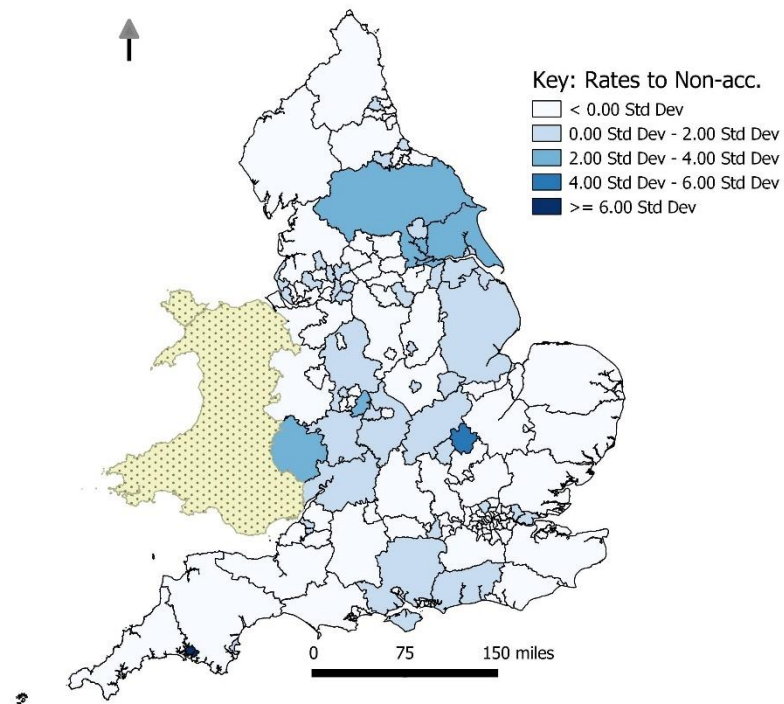
Map of rates of accessing women's refuges from each English County/Unitary Authority

The mean annual rate of accessing women's refuge support for domestic abuse was 5.1 per 10,000 female population aged 16+ (2.1 per 10,000 total population). The range is from zero to 17.7 per 10,000 female population aged 16+ (7.0 per 10,000 total population).
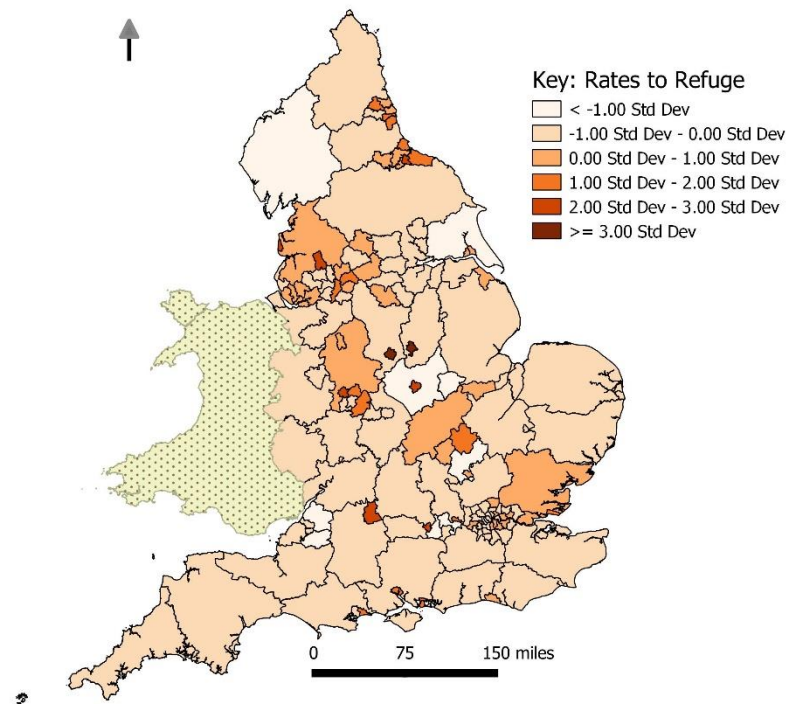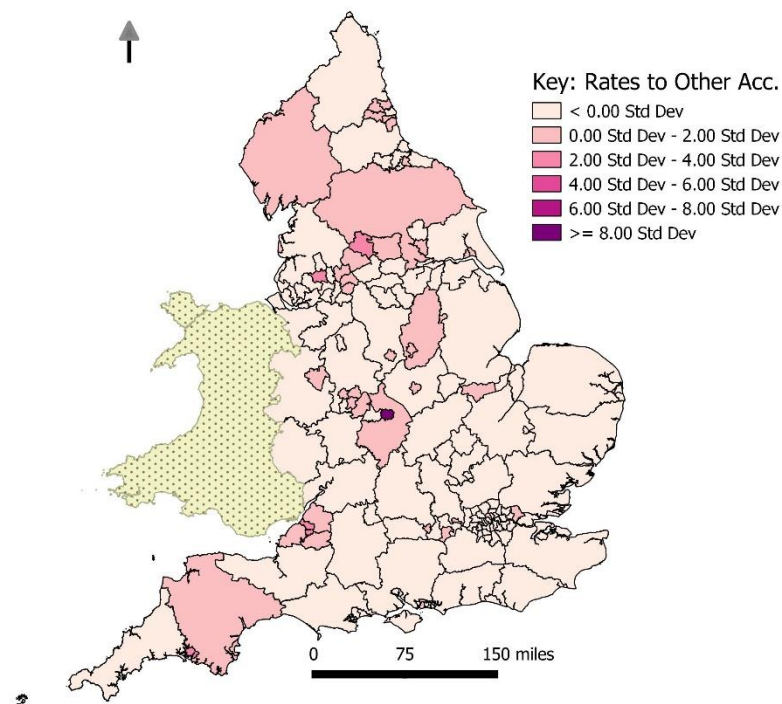
Map of rates of accessing other accommodation services from each English County/Unitary Authority

The mean annual rate of accessing other accommodation service support for domestic abuse was 1.0 per 10,000 female population aged 16+ (0.4 per 10,000 total population). The range is from zero to 15.9 per 10,000 female population aged 16+ (6.4 per 10,000 total population).

Key: Rates to Other Acc.
- < 0.00 Std Dev
- 0.00 Std Dev - 2.00 Std Dev
- 2.00 Std Dev - 4.00 Std Dev
- 4.00 Std Dev - 6.00 Std Dev
- 6.00 Std Dev - 8.00 Std Dev
- >= 8.00 Std Dev

0   75   150 miles

The most extreme range of difference between local authorities is therefore in terms of accessing non-accommodation services, suggesting that this may be significantly influenced by the (non) availability of such service support in different areas. Other (non-refuge) accommodation shows the lowest rate of help-seeking, but such provision is not consistently available across the country, and women may be accessing it because they need to go elsewhere but a refuge space is not available.

The significance (or not) of spatial/geographical differences

Different manifestations of help-seeking are likely to necessitate different kinds of policy/service intervention. In the literature, explanations of spatial differences in help-seeking tend to draw both on place characteristics, such as urban/rural differences, levels of deprivation, and on demographic/people characteristics, such as

ethnic origin, or poverty of residents[2]. However, this previous literature does not include how women move through place due to abuse.

The principal goal of this piece of work is to develop a classification of different kinds of area based on combinations of geographic, demographic and neighbourhood characteristics, and thus to make the complexity and multidimensionality of domestic violence help-seeking easier to define and grasp, and the need (or not) for geographically tailored policy intervention more evident.

Repeating the mapping of rates of different types of help-seeking but at the regional scale for the nine English regions shows far less variation in rates than that at the county/unitary scale. The maps below use the same categories (i.e. Standard Deviation from the county/unitary mean annual rates).

Regional Map of rates of Staying Put

The mean annual rate of staying put and accessing service support for domestic abuse was 3.7 per 10,000 female population aged 16+ (1.5 per 10,000 total population). The range is from 1.5 to 6.5 per 10,000 female population aged 16+ (0.6 to 2.7 per 10,000 total population).

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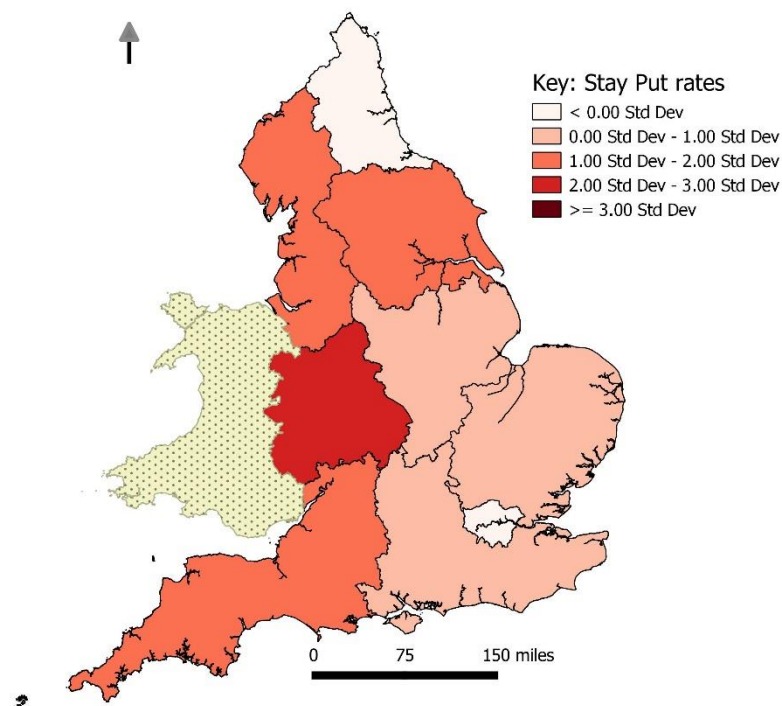
[2] See (Bowstead 2015; Bowstead 2021; Bowstead 2022) for further details.

Regional Map of rates of Remaining Local

The mean annual rate of remaining local and accessing service support for domestic abuse was 4.2 per 10,000 female population aged 16+ (1.8 per 10,000 total population). The range is from 1.9 to 7.3 per 10,000 female population aged 16+ (0.8 to 3.0 per 10,000 total population).

Regional Map of rates of Going Elsewhere

The mean annual rate of going elsewhere to access service support for domestic abuse was 4.3 per 10,000 female population aged 16+ (1.8 per 10,000 total population). The range is from 3.2 to 5.4 per 10,000 female population aged 16+ (1.3 to 2.3 per 10,000 total population).
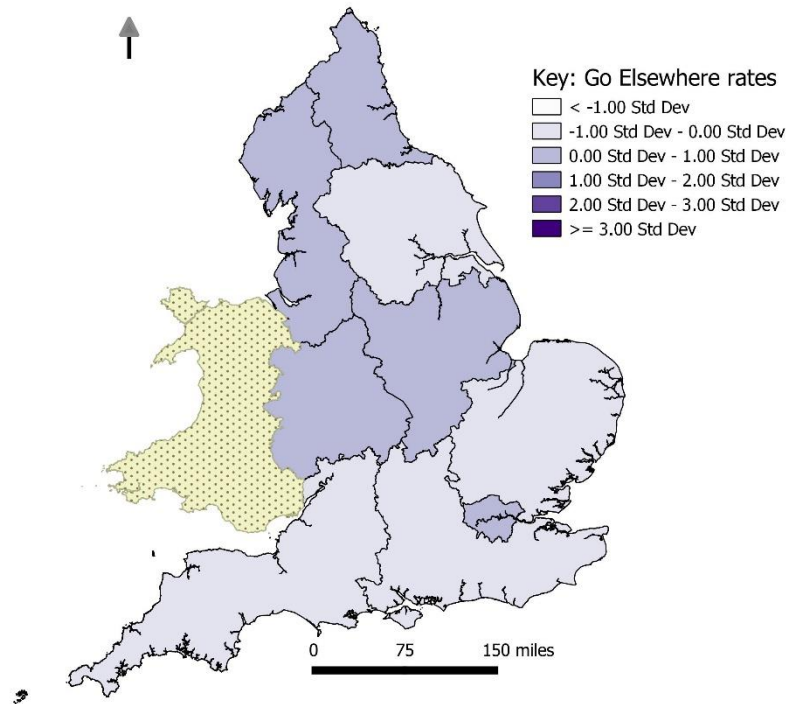
Regional Map of rates of accessing non-accommodation services

The mean annual rate of accessing non-accommodation service support for domestic abuse was 5.9 per 10,000 female population aged 16+ (2.5 per 10,000 total population). The range is from 2.3 to 11.5 per 10,000 female population aged 16+ (1.0 to 4.7 per 10,000 total population).
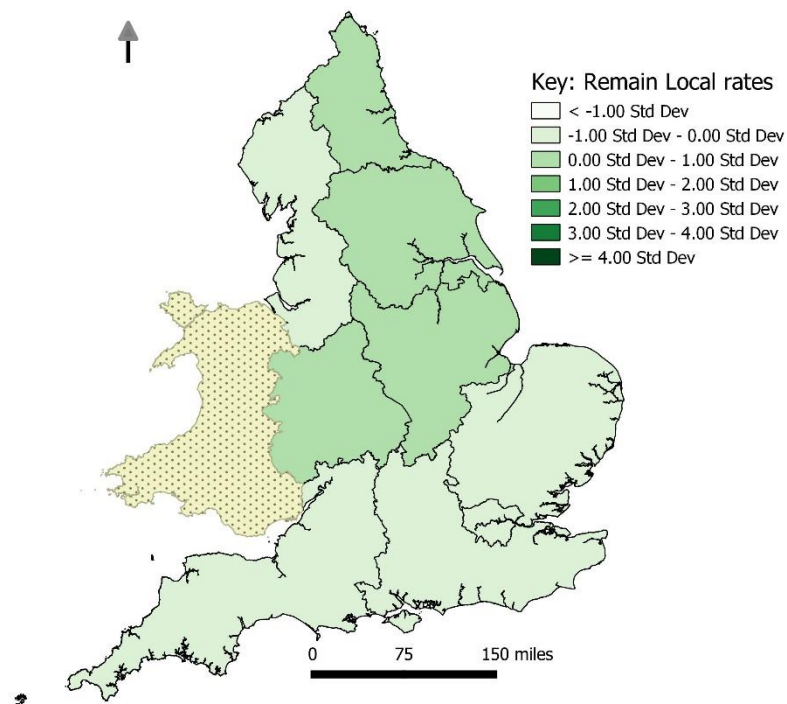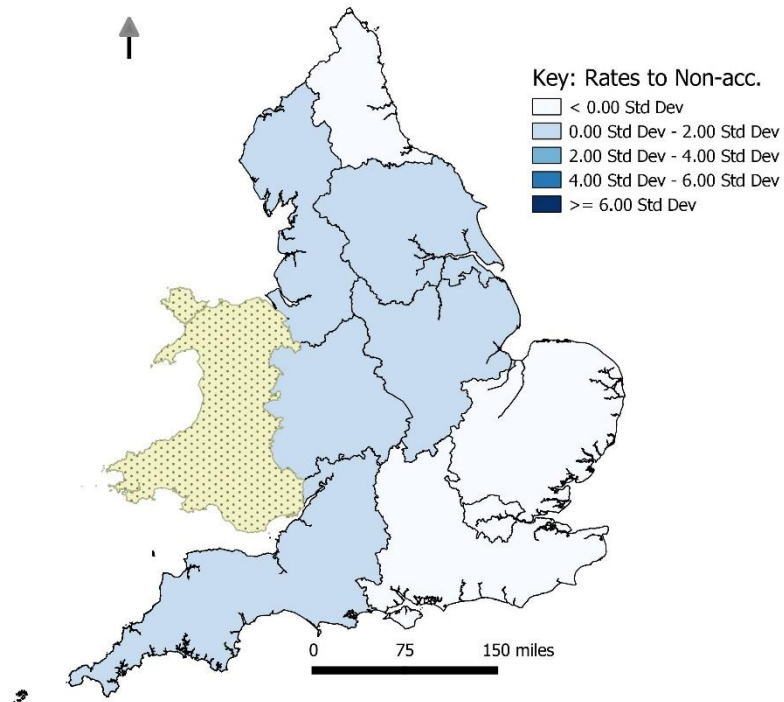
Regional Map of rates of accessing women's refuges

The mean annual rate of accessing women's refuge support for domestic abuse was 5.0 per 10,000 female population aged 16+ (2.1 per 10,000 total population). The range is from 3.4 to 7.0 per 10,000 female population aged 16+ (1.5 to 3.0 per 10,000 total population).
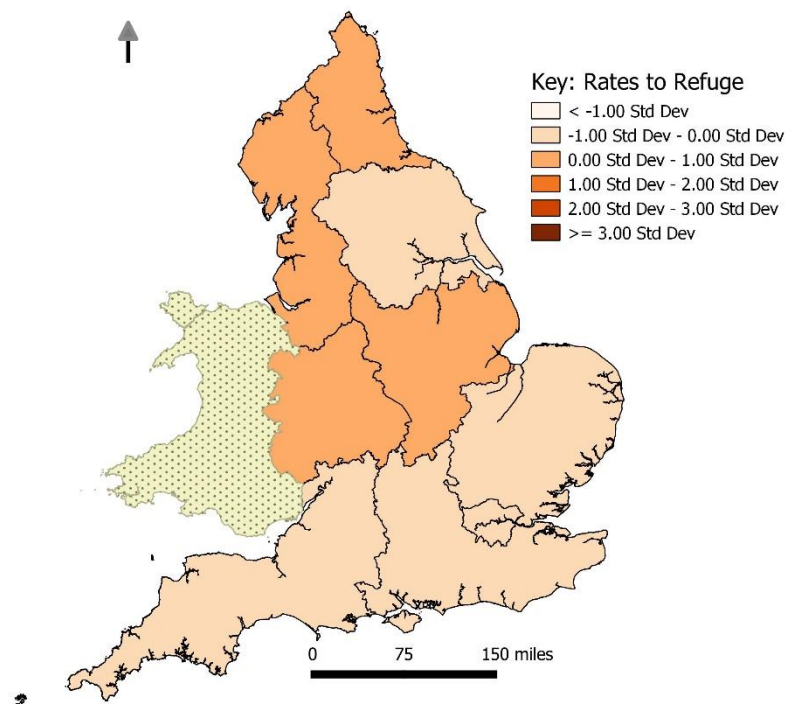
Regional Map of rates of accessing other accommodation services

The mean annual rate of accessing other accommodation service support for domestic abuse was 1.0 per 10,000 female population aged 16+ (0.4 per 10,000 total population). The range is from 0.2 to 1.9 per 10,000 female population aged 16+ (0.1 to 0.8 per 10,000 total population).
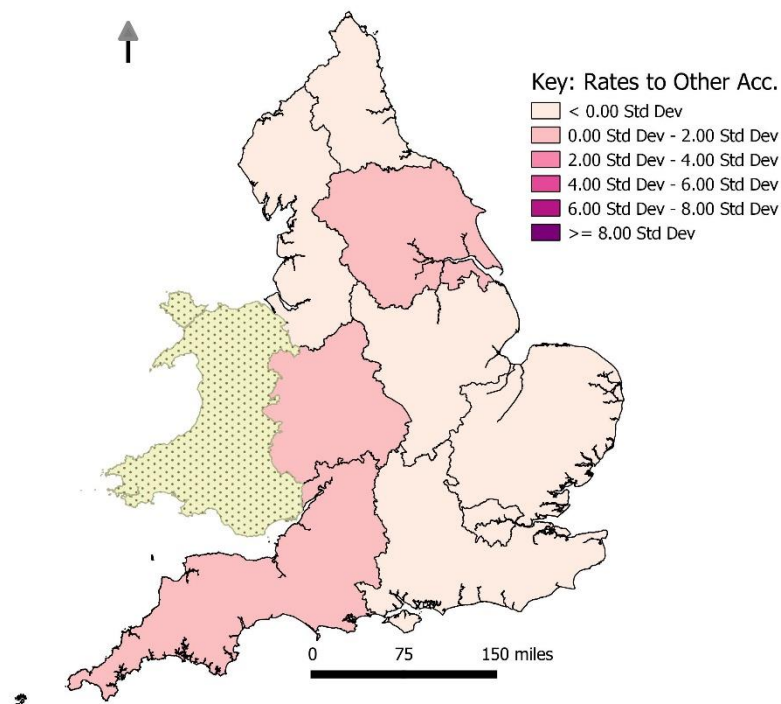

The regional mapping shows the limited range of difference in rates at this scale. It may, therefore, be found from the evidence that place is actually a minor factor in domestic abuse needs and types of help-seeking (especially relocation) and that service responses and service provision types, capacity and location should be standardised over larger areas, such as regions and nationally.

2. What kind of classification is best suited to this purpose?

Since the objective of this work is to handle complexity in response to the different geographical distributions of single variables, a multivariate approach is needed. A classification identifying places with distinctive clusters of characteristics is the preferred approach rather than a nearest neighbour model or index.

3. What coverage and spatial scale is appropriate?

Current policy framing in the Domestic Abuse Act 2021 (Home Office 2021) devolves responsibility in England for both assessing and responding to domestic violence needs to the local level: County, Unitary and London. This is the current policy framework, and therefore the analysis to develop a classification is Counties and Unitaries; with the potential additional further consideration of London as a whole. However, the conclusions may be that this is not the appropriate or effective scale for particular responses and types of provision.

4. What existing tools and products exist at this coverage and spatial scale?

No existing tools have been developed with this specific purpose in mind, though the Istanbul Convention (Council of Europe 2011a) enshrines the notion since the 1975 Select Committee of one refuge family place per 10,000 population. On the current England population (ONS 2022), this would be 5,656 refuge spaces. However, services are locally commissioned based on local assessments and notions, and this minimum level of refuge provision has never been met in England.

Specifically, there is a lack of recognition of different <u>types</u> of services needed; with a conflation of women's refuges, other support accommodation, and non-accommodation services of different types. There are neither existing tools nor an understanding of the different scales required for refuges as opposed to other types of service provision.

5. Is it necessary to develop a bespoke classification?

There is a long-standing policy need for greater insight than is provided by existing classifications or needs assessment tools/processes – made more urgent by the potentially missed opportunity or even counter-productive provisions in the Domestic Abuse Act 2021. Relocation due to domestic abuse, especially women and children crossing local authority boundaries, continues to be under-recognised in law, policy and practice. Asking local authorities, even at the Tier 1 level, to assess "the need for accommodation-based domestic abuse support in their area for all victims and their children who reside in relevant safe accommodation, including those who come from outside of their area" (DLUHC 2021, 9), ignores the perverse incentive to under-count, with the consequent likely loss of services despite the fact that there is already insufficient capacity. There is a lack of recognition, deliberate or not, that if provision does not exist in an area, or services refuse access to women and children from outside the area, then such women and children are unlikely to be able to "come from outside of their area" in the first place.

None of the existing place classifications consider domestic abuse. The lack of statutory duties beyond the local authority scale leaves domestic violence needs everywhere and nowhere – falling between scales of government, and only dealt with tangentially in connected issues for which there <u>are</u> statutory duties e.g. child protection.

However, an inappropriate statutory duty will not resolve any of this, and is potentially counter-productive in trapping women and children in place. Domestic abuse is an issue which creates needs which are expressed in processes – such as relocation – expressed but not <u>caused</u> in place. The processes are caused in relationships – needing a bespoke response to the interrelationships between people and place.

Having developed the classification, it can be cross-classified with existing tools, such as Rural-Urban Classifications and Area Classifications, to see whether the bespoke classification developed does indeed provide additional insight.

6. To what extent should the classification be theory-led or data led?

There are arguments for a data-led approach in this case, given that there are a number of different theoretical explanations for concentrations of domestic violence help-seeking, including competing claims about demographic and place-based influences, and about the relative influence of factors at different spatial levels. Certainly, there is no single body of theory that could lead to a purely theory-driven approach.

However, the classification is not intended as a generic tool to support a variety of different uses, based on inclusion of a wide range of social and economic variables. It has a defined policy purpose. This means that it makes sense to constrain the data included to potentially relevant variables, drawn from the various theoretical propositions about what causes different clusters of domestic violence help-seeking. It makes sense for the classification to be theoretically informed.

For these reasons, a theoretical approach was adopted for the initial selection of variables. To ensure that the final classification is not pre-determined by theory, the initial selection of variables was then subjected to empirical testing, using multi-level regression modelling to identify which variables are the most important in predicting/accounting for/associating with different kinds of domestic violence help-seeking (specifically considering women's three spatial strategies and to three broadly different types of services). This final selection of variables is used to form the clusters.

7. What kinds of variables should be included?

Other mapping analysis within the research addresses patterns of individual help-seeking; and relates these to characteristics of people and places. Outputs include flow maps and diagrams of journeys between local authorities, choropleth maps of rates of different types of help-seeking within areas, and individual multi-stage journey trajectories.

The analysis for developing a place classification therefore focuses on characteristics of places; though individuals may be staying or leaving, temporarily passing through, or resettling in a place. Such individual actions aggregate into rates of different types of help-seeking. Place characteristics that can be measured include physical – such as area and fixed infrastructure (e.g. roads and housing); more temporary infrastructure – such as service provision; and population level characteristics – such as rates of crime, poverty, child protection proceedings, levels of health and wellbeing, and attitudes and beliefs. These may be measured by administrative or market data, or representative survey responses.

Lupton et al (2011, 35) highlight the Intrinsic, Population and Acquired characteristics of place:

- 'Intrinsic' or hard to change characteristics of place
  - Geographical factors such as proximity
  - Economic factors such as industrial structure
  - Physical factors such as housing stock
- Population composition and dynamics
  - Age, gender, ethnicity, social class of residents
  - Migration
- Acquired characteristics
  - Norms, attitudes and behaviours
  - Social relations and networks
  - Environmental characteristics such as noise, graffiti, traffic, pollution
  - Institutional characteristics such as local services and resources
  - Political characteristics

Population composition has largely been considered elsewhere in this research, with analysis of individual level data (n>175,000 cases) relating individual characteristics of demographics to help-seeking[3], so this will not be repeated in aggregate in this place-based analysis. However, internal migration is included. The other Intrinsic and

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[3] Note that demographic characteristics have limited association with help-seeking in comparison with the complexity of multi-stage journeys and these types of services. However, they do have major impact at the individual scale e.g. cultural, community, by and for, children's needs – for the wider range of services needed in an area.

Acquired characteristics have been considered, except that Party political characteristics are not included because of being too heterogeneous at this scale of analysis.

Essentially, a broad range of variables at different spatial scales was needed to capture the various processes that may be at work.

Construction of the typology began with a set of 135 variables, drawn from more than fifty different sources; on 12 topics:
- Children – 37 variables
- Community – 3 variables
- Crime – 7 variables
- Economy – 14 variables
- Education – 5 variables
- Environment – 2 variables
- Health – 10 variables
- Housing – 23 variables
- Population – 2 variables
- Services – 20 variables
- Spatial – 1 variable
- Transport – 11 variables

Relevant topics were identified theoretically, and further tested via a survey of domestic abuse service and housing specialists. Variables were sought from a wide range of sources to evidence the identified topics, though, as ever with secondary analysis of existing administrative data, "The wanted variables may not always be available at the desired spatial level, or for the most relevant time period" (Lupton et al. 2011, 47).

6   Methodological steps

6.1   Selecting dimensions of domestic violence help-seeking to model

As discussed earlier, the data of women succeeding in accessing services due to domestic violence are a considerable under-count of overall help-seeking, and the underlying need for help and support, but they are the basis of these calculations.

If provision was established on the basis of this modelling, then it would be a key building block towards an adequate service infrastructure: the foundations of what is needed. The dimension of domestic violence help-seeking that is being modelled is based on expressed service demand – not the underlying need; and certainly not the

underlying prevalence of domestic abuse. All the modelling, therefore, only addresses a sub-set of the actual need.

From the Supporting People Programme data, the number of women help-seeking due to domestic violence to these types of services from each local authority area was calculated. The total over 8 years was n=177,893. This was only where risk of domestic violence was the primary need at the point of accessing the service (many more individuals have domestic violence as a secondary need) – so all the resultant classification and formula are for a minimum provision.

From the annual totals of successful service access, six dimensions of domestic violence help-seeking were investigated to be incorporated in the capacity, type and location calculations and classifications.
- Three alternative strategies of where services were accessed – Service <u>Location</u> Strategies - **Stay Put / Remain Local / Go Elsewhere rate – per 16+ female popn.**
- Three alternative service categories accessed – Service <u>Type</u> Strategies - **Women's Refuge / Other accommodation / Non-accommodation housing related support – per 16+ female popn.**

Rates of help-seeking are key to attempting to account for <u>and</u> to provide infrastructure for women's domestic abuse help-seeking. From the total help-seeking follows on the different strategies (Stay Put/Remain Local/Go Elsewhere and Accessing Refuge/Other accommodation/Non-accommodation services) that may be a mixture of choice and forced upon women and children.

In order to refine the list of variables for inclusion in the classification, regression modelling was used to identify which characteristics were most predictive of each of the six dimensions of domestic violence help-seeking to be explored and incorporated in the classifications.

Local authorities are of very different size in terms of population, and population numbers were overwhelmingly positively associated with help-seeking numbers of all kinds; therefore rates of help-seeking were used in the modelling – using the age 16+ female population because the service types being modelled were for that population[4].

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[4] N.B. The Supporting People Programme data do include male help-seeking due to the risk of domestic violence (Bowstead 2018) and include help-seeking where domestic violence is a secondary factor, <u>but</u> this formula focuses only on women's help-seeking where domestic violence is the primary reason.

Note that, as discussed above, the identified 'supply' capacity for women and children from a particular Local Authority would not necessarily be needed – in terms of Location – in that same Local Authority. In terms of women's location strategies (Bowstead 2021), provision would be:

- in the same Local Authority and 100% non-accommodation services for Staying Put;
- 50% non-accommodation, 34% women's refuge and 16% other types of accommodation services for Remaining Local in the same Local Authority;
- in a different Local Authority and 85% women's refuges, 9% other accommodation services and 6% non-accommodation services for Going Elsewhere.

6.2   Testing of assumptions

Before doing the modelling, it was necessary to test some of the assumptions which informed the approach. Crucially, it was tested whether the dynamics of women's domestic violence help-seeking appear to be different in different local authorities – see the choropleth maps above for counties/unitaries and regions. Tier 2 local authorities were also mapped, but are not discussed further here.

It was found that rates do differ between local authorities. This finding justified the use of multi-level regression models. These are similar to ordinary multiple regression models, but acknowledge the existence of groups among the units of data being observed.

6.3   Refining the selection of variables

To begin with, initial models included the full dataset of theoretically relevant variables, and these were refined by gradually eliminating variables that were not statistically significant predictors. The statistical significance of a predictor is the chance that its relationship with the dependent variable (e.g. Go Elsewhere rate) reflects a real underlying relationship rather than random chance. However, it is still an association – not a proof of causality.

Initial correlations were carried out on each topic, but this does not consider the degree of interrelationship between different variables; and the need to aim for variables with limited correlation between themselves. So, this was followed by Linear Regressions on each topic to be able to eliminate variables on both statistical significance in accounting for the dependent variable (the six rates); and on the basis of multicollinearity between variables.

These linear regressions and thresholds of significance and limited multicollinearity reduced the initial 135 variables to 48 variables by removing variables which were

too closely associated with each other or had too many missing values. The remaining variables were still from all of the 12 topic categories.

Following Rogerson (2010, 235–238) on missing values, missing values were not replaced with the mean, because of the potential importance of outliers; so were either imputed from nearest statistical neighbour or variables were removed from the modelling because of high levels of missing values. Two variables on the topic of Transport were removed as the missing values occurred because datasets are often collected differently for London and were therefore unavailable at the London Borough scale. Modelling for London as a whole would be able to reinstate such variables; and there were still variables remaining within this modelling on the topic of Transport.

Variables remaining on the 12 Topics
- Children – 37 variables originally / 12 remaining in the models
- Community – 3 variables originally / 2 remaining in the models
- Crime – 7 variables originally / 6 remaining in the models
- Economy – 14 variables originally / 3 remaining in the models
- Education – 5 variables originally / 3 remaining in the models
- Environment – 2 variables originally / 1 remaining in the models
- Health – 10 variables originally / 7 remaining in the models
- Housing – 23 variables originally / 2 remaining in the models
- Population – 2 variables originally / 1 remaining in the models
- Services – 20 variables originally / 8 remaining in the models
- Spatial – 1 variable originally / 1 remaining in the models
- Transport – 11 variables originally / 2 remaining in the models

This process produced statistically-significant R-squared for all six models – with a minimum of 5 variables (for the rate to Non-Accommodation Services) and a maximum of 28 (for the rate of Go Elsewhere).

Leaving 48 variables overall – for the different models:
- Stay Put rate – 6 variables
- Remain Local rate – 22 variables
- Go Elsewhere rate – 28 variables
- Refuge rate – 23 variables
- Other Accommodation rate – 8 variables
- Non Accommodation rate – 5 variables

The variables are listed in the table below, with the reference for the data sources, which can be consulted for further details on the data.

Table of included variables and data sources

Variable Name	Variable Label	Reference for source of data
CH1_Risk_DA_EVER	Projected % of 0-17 year olds in a household where an adult has ever experienced domestic abuse	(Children's Commissioner for England and Clarke 2019a; Children's Commissioner for England and Clarke 2019b)
CH1_Risk_MH	Projected % of 0-17 year olds in a household where an adult has moderate or higher mental ill-health symptoms	
CH1_Risk_TTB_THREE	Projected % of 0-17 year olds in a household where an adult has all 3 of the 'toxic trio' issues (broad measures)	
CH1_Risk_TTB_TWO	Projected % of 0-17 year olds in a household where an adult has 2 of 3 'toxic trio' issues (broad measures)	
CH1_Risk_TTN_THREE	Projected % of 0-17 year olds in a household where an adult has all 3 of the 'toxic trio' issues (narrow measures)	
CH1_Risk_TTN_TWO	Projected % of 0-17 year olds in a household where an adult has 2 of 3 'toxic trio' issues (narrow measures)	
CH10_SchE	% of school popn permanently excluded (mean pa)	(DCLG 2010)
CH2_CIN_2010YR_PER10K	Rate of Children In Need (CIN) per 10,000 child popn 2009-10	(Department for Education 2010)
CH2_CIN_MAR2010	Children In Need at 31 March 2010	
CH2_CIN_MAR2010_PER10K	Rate of CIN at 31 March 2010 per 10,000 child popn	
CH2_S47_2009_10	All children who were subject to section 47 enquiries which started 2009-10	
CH2_S47_2010YR_PER10K	Rate of s47 per 10,000 child popn 2009-10	

Variable Name	Variable Label	Reference for source of data
CO1_NB_cal_2008	% who feel they belong to their neighbourhood 2008	(DCLG 2010)
CO2_Satis_cal_2008	% of people satisfied with local area 2008	(DCLG 2010)
CR1_SVC_200910	Most serious violent crime (SVC) per 1,000 popn 2009/10	(DCLG 2010)
CR2_ABH_200910	Actual Bodily Harm (ABH) crime per 1,000 popn 2009/10	(DCLG 2010)
CR3_Viol_2010	Hospital admissions for violence (including sexual violence) per 100,000 popn 2010	(Public Health England 2020)
CR4_S_Rate	Sexual offences 2011 per popn	(Home Office 2011)
CR4_V_Rate	Violence against the person - without injury 2011 per popn	
CR4_VINJ_Rate	Violence against the person - with injury 2011 per popn	
EC1_POV_200607	% children in poverty (below 60% median income) 2006/07	(DCLG 2010)
EC10_Post2015_pp_pa	Total Impact By 2020/21 from post2015 welfare changes - Financial loss per working age adult £ per year	(Beatty, Fothergill (personal communication) 2018)
EC5_IB_Q3200708	% out of work straight onto incapacity benefit Quarter3 2007/08	(DCLG 2010)
ED2_GCSE_200809	% children achieving 5 or more A-C grades incl English & Maths 2008/09	(DCLG 2010)
ED4_LIT_200809_Rate	prop achieving Level 1 in literacy per 10,000 popn 2008/09	(DCLG 2010)

Variable Name	Variable Label	Reference for source of data
ED5_NUM_200809_Rate	prop achieving Level 3 in numeracy per 10,000 popn 2008/09	(DCLG 2010)
EN1_Energy_200910	% people on benefits in houses with low energy efficiency 2009/10	(DCLG 2010)
HE10_HSH_female_rate_2011	Emergency Hospital Admissions for Intentional Self-Harm 2011 Directly age standardised rate per 100,000 popn	(Public Health England 2020)
HE11_LE_SII_years_2011	Slope Index of Inequality (SII) - difference in female life expectancy - years	(Public Health England 2020)
HE2_YPSA_200910	% young people with substance misuse (survey) 2009/10	(DCLG 2010)
HE3_Health_2008	% popn. reporting good overall health (survey) 2008	(DCLG 2010)
HE4_Mort_2008	All age All cause mortality per 100,000 2008	(DCLG 2010)
HE5_HLE_2001	Healthy Life Expectancy at age 65 2001	(DCLG 2010)
HE7_MH_percent_2017	Estimated prevalence of common mental disorders: % of population aged 16 & over	(Public Health England 2020)
HO10_HSG_Aff_2011	Total additional affordable dwellings provided by local authority area - Completions 2010-11	(MHCLG 2019)
HO14_HSG_Price_All_2011	Median sale price - All dwelling types 2011	(ONS 2015b; ONS 2015c)
P3_MIG_Net_2011_Rate	Internal Mign Net flow rate per 10,000 popn	(ONS 2019)
SE3_HHU_Acc_Propn	Proportion of all Supporting People Household Units (HHU) that are Accommodation	(DCLG 2011)

Variable Name	Variable Label	Reference for source of data
SE3_HHU_DV_Propn	Proportion of all Supporting People HHU that are Domestic Violence specific	
SE3_HHU_DV_RateTot	Rate of Domestic Violence HHU per 10,000 total popn. 2011	
SE5_FS_Serv_Count_11	Domestic Violence Floating Support providers count 2011	(Women's Aid (personal communication) 2018)
SE5_Ref_Room_11	Domestic Violence Refuge rooms total count 2011	
SE5_Serv_count_05_12	Domestic Violence Count of services 2005-12	
SE6_DV_SP_SpendPercentYr8	Percent Supporting People Spend on Primary Client Group – Domestic Violence 2010-11	(DCLG 2011)
SE6_DV_Spend_perFPopnY8	Per Female popn 16+ Spend on Primary Client Group - Domestic Violence 2010-11 (£)	
SP1_AREA_ha	Total area of Local Authority in hectares	(ONS 2015a)
T6_Bus_perPopn_2011	Passenger journeys on local bus services per head of population 2010/11	(GLA 2011; Department for Transport 2020)
T9_ROAD_per_tenthha	Road length per tenth of a hectare	(Department for Transport 2010; Department for Transport 2018)

The approach is to slim down the variable list by excluding variables that are strongly correlated with each other. However, with a complex, multi-dimensional area like domestic violence help-seeking, it is more difficult to be confident of the important dimensions of the policy problem. Adopting a modelling approach provides an empirical test of some of the theoretical propositions for the inclusion of variables initially, and thus strengthens the theoretical basis of the classification.

It is important also to note that the modelling results are insightful in themselves, both for what they show and what they reject.

Insights from excluded variables

Out of the 87 excluded variables there are some which might have been considered as likely to influence rates of domestic violence help-seeking (and that was why they were originally included in the analysis). It is therefore instructive to note some of the variables not found to be associated with help-seeking rates, and suggested explanations for this:

<u>Children</u> – 25 variables were excluded, including measures of children's emotional health, positive participation, hospital due to injury, unexplained school exits.
   o   This suggests that domestic violence help-seeking is about individual circumstances, and not the local context for children.

<u>Community</u> – 1 variable excluded - Measure of fair treatment by local services.
   o   This suggests that domestic violence help-seeking is about accessing services when you need to – not about a general sense of service responses.

<u>Economics</u> – 11 variables excluded, including rate of female employment, rate of employment and claiming unemployment benefits, incapacity benefits, median gross weekly pay.
   o   This suggests that domestic violence help-seeking is about individual circumstances rather than the local economy.

<u>Health</u> – 3 variables excluded, including rate of adult alcohol dependency and drug users in treatment.
   o   This suggests that domestic violence help-seeking is not about local substance misuse health and responses.

<u>Housing</u> – 21 variables excluded, including
   •   Percentages of owned, private rented and public rented dwellings.
       o   This suggests that domestic violence help-seeking is not about the mix of housing tenures in an area.

- Numbers of dwellings or affordable dwellings.
    - This suggests that domestic violence help-seeking is not about the absolute availability of housing.
- Percentage of vulnerable people in settled or independent living.
    - This suggests that domestic violence help-seeking is not about the wider context of support for people with additional problems.
- Rate of households in temporary, rates of homelessness decisions and acceptances.
    - This suggests that domestic violence help-seeking is about individual circumstances, not about the local context of rates of homelessness or homelessness responses.

Transport – 9 variables excluded, including
- Work and school access by public transport.
    - This suggests that domestic violence help-seeking is not the same kind of journeys as school or work.
- Private vehicles per popn, road length per popn, percentage of roads that are A roads.
    - This suggests that domestic violence help-seeking is about individual transport needs for specific journeys rather than general access to private transport and major roads in the area.

Regression analysis aims to ensure "not only that the independent variables are a parsimonious subset capturing the underlying dimensions of the full set of potential independent variables, but that they are uncorrelated as well" (Rogerson 2010, 302). The remaining variables are therefore the most significant in accounting for the variability in the six measured rates of domestic violence help-seeking.

Standardisation of variables

The remaining variables represented a range of measurement values, such as percentages, proportions, rates and counts; so the values were standardised to provide easier interpretation of the parameter estimates of the models, and also later to feed into the cluster analysis. In these models, z-score standardisation was applied to all variables, transforming the observed values into a count of standard deviations (S.D.) on a normal distribution with mean 0 and S.D. 1 (Lupton et al. 2011, 96). This method follows Lupton et al (2011, 105): "Each authority's value for each variable was standardised to its z-score, to reflect its deviation from the mean for that variable, relative to the extent of variation for all authorities. Standardisation transforms all variables into comparable scores that are indifferent to the original units of measurement and absolute range of values".

6.4   Creating the classifications

The modelling results of included and excluded variables (and the factors/topics they represent) are interesting in themselves, but the additional original purpose of the analysis was to provide a basis for a classification of local authorities (Tier 1) in terms of women's domestic violence help-seeking from or within those places.

The classifications were constructed by using standard cluster analysis techniques: initially two different methods were used, Hierarchical (Ward's Method) and Non-Hierarchical (K-means). To quote Rogerson (2010, 305)

> "Approaches to cluster analysis may be categorized into two broad types. *Agglomerative* or *hierarchical* methods start with *n* clusters (where *n* is the number of observations); each observation is therefore its own cluster. Then two clusters are merged, so that *n*-1 clusters remain. This process continues until only one cluster remains (the cluster contains all *n* observations). The process is hierarchical because the merger of two clusters at any stage of the analysis cannot be undone at later stages."
> "In contrast, *nonhierarchical* or *nonagglomerative* methods begin with an a priori decision to form *g* groups. Then one begins with either an initial set of *g* seed points or an initial partition of the data into *g* groups." [p305] "In either case, an iterative process takes place, where new seed points are calculated from partitions, and then new partitions are created from the seed points. This process continues until no reassigments of observations from one group to another occur."

Cluster techniques take the population to be classified (here, Tier 1 Authorities) and group them so that, on chosen variables, the differences within each group is minimised.

The number of clusters in a classification must be understandable and workable. In the Hierarchical (Ward's Method) a range of number of clusters were generated initially; however it became clear that 6 clusters were functional to minimise the differences within each group and maximise the differences between groups. Even so, for each model there were one or two outliers i.e. 'clusters' with only one member; so six clusters is clearly the <u>maximum</u> to consider. As a result, six was also specified as the number of clusters to be generated by the Non-hierarchical (K-means).

Practically, therefore, there are four or five main clusters to form the classifications for each model; with a few outliers. The two methods generated similar clusters in general.

Because of missing data, two Tier 1 Authorities were excluded from most models – City of London and the Isles of Scilly – which are distinctively small populations and therefore outliers in terms of any service provision. This was confirmed when City of London was clustered as an outlier for the one model (Other Accommodation) for which it did have the data to be included in the analysis.

The multi-level models were used to decide two things: which variables should be used in the cluster analysis, and also what relative importance should be assigned to each variable in the final classification. Two measures were used in this:

- The Linear Regression analysis identified the statistically significant variables to include ($p < 0.05$)
- Standard Coefficients were generated for each variable in each model. These indicate both the absolute size of the predictive effect of each variable and the direction of effect i.e. whether a higher rate of that variable is associated with a higher or lower rate of that type of help-seeking. The coefficients were not used as a formal weighting in the cluster analysis; but used to highlight the key factors in describing the clusters generated. Standard Coefficients greater than 0.5 (-/+) were identified as the key factors to focus on in understanding and explaining the rates of domestic violence help-seeking; and describing the clusters.

6.5   Explaining the rates of domestic violence help-seeking

Modelling for the six dimensions of domestic abuse help-seeking was carried out using the 48 remaining variables:

- Stay Put rate – 6 variables
- Remain Local rate – 22 variables
- Go Elsewhere rate – 28 variables
- Refuge rate – 23 variables
- Other Accommodation rate – 8 variables
- Non Accommodation rate – 5 variables

To focus on the key factors in terms of understanding the processes, the "most important predictor variables" (Lupton et al. 2011, 49) were identified using the Standard Coefficient as greater than ±0.5. Again, there are insights to be gained from the topics and variables that are <u>not</u> significantly associated, as well as from those that are. Note that the use of the word 'predictor' is taken from Lupton et al (2011), and should be thought about with caution in terms of the nature of any association or causes.

- **Most important predictor variables for the Stay Put rate**

There are six significant (p<0.05) variables associated with the rate of help-seeking Staying Put – only on the topics of Health and Services. There is no association with factors such as Children, Community, Crime, Economy, Education, Environment, Housing, Population, Spatial or Transport.

Stay Put Rate			
		Standard Coeff	Sig.
SE3_HHU_DV_RateTot	Rate of Domestic Violence HHU per 10,000 total popn. 2011	15.192	0.000
SE3_HHU_DV_Propn	Proportion of all Supporting People HHU that are Domestic Violence specific	0.702	0.000
HE5_HLE_2001	Healthy Life Expectancy at age 65 2001	0.662	0.006
HE4_Mort_2008	All age All cause mortality per 100,000 2008	0.543	0.024
HE11_LE_SII_years_2011		0.306	0.002
SE5_Ref_Room_11	Domestic Violence Refuge rooms total count 2011	-0.517	0.004

The five most associated variables, where the Standard Coefficient is greater than ±0.5, are:

Services Domestic Violence service capacity (HHU per popn) is by far the most significant factor **positively** associated with Stay Put rate (S.C. +15.192). This indicates that Domestic Violence Stay Put help-seeking is about availability of specialist support – and suggests an unmet demand for Stay Put support. The next most significant is the proportion of all SP HHU (Supporting People HouseHold Units) that are Domestic Violence (S.C. +0.702) – so indicating the local focus on Domestic Violence specialist provision. Again, this indicates that Domestic Violence Stay Put help-seeking is determined by the local Domestic Violence provision to enable women to seek help.

Only the number of refuge rooms (S.C. -0.517) is **negatively** associated with the Stay Put rate. This indicates that Domestic Violence help-seeking without relocating may be less likely if refuge spaces are more available in the area – making it more possible for women to get help to relocate (refuge provision may also be an indicator of greater availability of information to women in an area – whether or not they actually need a refuge).

Health A higher rate of Stay Put is associated with higher Healthy Life expectancy at age 65 (S.D. + 0.662) and Higher Mortality rate (S.D. +0.543) – so areas of better older health but higher overall mortality. This may indicate that Domestic Violence Stay Put help-seeking is more possible in areas of better older health – and Stay Put is also more likely for older women (Bowstead 2021).

- **Most important predictor variables for the Remain Local rate**

There are 22 significant (p<0.05) variables associated with either a higher or lower rate of help-seeking Remaining Local – on a range of topics especially Services, Economy, Children, Transport, Health, Housing and Crime. There is no association with factors such as Community, Education or Population.

Remain Local Rate		Standard Coeff	Sig.
SE3_HHU_DV_RateTot	Rate of Domestic Violence HHU per 10,000 total popn. 2011	9.427	0.008
EC1_POV_200607	% children in poverty (below 60% median income) 2006/07	4.712	0.014
CH1_Risk_TTN_TWO	Projected % of 0-17 year olds in a household where an adult has 2 of 3 'toxic trio' issues (narrow measures)	1.342	0.036
T6_Bus_perPopn_2011	Passenger journeys on local bus services per head of population 2010/11	1.268	0.006
CH2_CIN_MAR2010	Children In Need at 31 March 2010	0.876	0.027
HE4_Mort_2008	All age All cause mortality per 100,000 2008	0.610	0.005
CR2_ABH_200910	Actual Bodily Harm (ABH) crime per 1,000 popn 2009/10	0.601	0.000
HE5_HLE_2001	Healthy Life Expectancy at age 65 2001	0.515	0.015
CR4_S_Rate		0.428	0.021
T9_ROAD_per_tenthha		0.416	0.005
SE6_DV_Spend_perFPopnY8		0.414	0.023
HE10_HSH_female_rate_2011		0.329	0.002
SE5_FS_Serv_Count_11		0.237	0.011
CR3_Viol_2010		0.191	0.010
HE3_Health_2008		-0.269	0.021
EN1_Energy_200910		-0.296	0.000
SE3_HHU_DV_Propn		-0.400	0.027
CR1_SVC_200910		-0.424	0.000
SE5_Serv_count_05_12		-0.440	0.020
CH2_CIN_MAR2010_PER10K	Rate of CIN at 31 March 2010 per 10,000 child popn	-0.623	0.014
HO14_HSG_Price_All_2011	Median sale price - All dwelling types 2011	-0.642	0.000
CR4_V_Rate	Violence against the person - without injury 2011 per popn	-0.757	0.000

The eleven most associated variables, where the Standard Coefficient is greater than ±0.5, are:

Services The Rate of Domestic Violence service capacity (HHU per popn) is by far the most significant factor **positively** associated with Remain Local rate (S.C. +9.427). (a higher Remain Local rate is also associated with Domestic Violence SP spend per female popn. (S.C. +0.414)). This indicates that Domestic Violence Remain Local help-

seeking is about availability of specialist support – and suggests unmet demand for Remain Local support.

Economy A higher rate of Remain Local is associated with higher % children in poverty (below 60% median income) (S.C. +4.712). This indicates that Domestic Violence help-seeking whilst Remaining Local is associated with child poverty – suggesting that poverty reduces options (including financial support from family, friends and community) which may include reduced options to Go Elsewhere if needed.

Crime – A higher rate of ABH (Actual Bodily Harm) per popn (S.C. +0.601) (and Sexual Violence and hospitalisation due to Violence) is associated with a higher Remain Local rate; *but* a lower rate of Violence without injury per popn. (S.C. -0.757) (and Serious Violent Crime) is associated with higher Remain Local rate. This indicates that Domestic Violence help-seeking whilst Remaining Local is not clearly associated with the local crime and violence context.

Health A higher rate of Remain Local is associated with a higher Mortality rate (S.C. +0.610), but also higher healthy life expectancy of older people (S.C. +0.515) and lower rate of Good Health (S.C. -0.269). This may indicate fewer options in areas of poorer health, especially for younger people – including Domestic Violence help-seeking whilst Remaining Local.

Children A higher rate of Remain Local is associated with a higher percentage of children living with an adult with 2 of 3 'toxic trio' characteristics (S.C. +1.342). This indicates that Domestic Violence help-seeking whilst Remaining Local is associated with one measure of the rate of parental problems – but may also indicate more statutory service activity so that mothers are required to Remain Local. However, most of the other measures on the notions of 'Toxic Trio' are not statistically significant, and, whilst higher numbers of CIN (Children In Need) are associated with higher rates of Remain Local (S.C+0.876), the rate of CIN snapshot per popn. in March is negatively associated with rate of Remain Local (S.C. -0.623).

Housing Median house price is negatively associated (S.C. -0.642) with the rate of Remain Local – indicating that remaining local is less likely in areas of higher house prices. This suggests that Domestic Violence help-seeking whilst Remaining Local associated with resettlement housing options (buying or private renting a dwelling).

Transport A higher local bus journeys rate per popn. (S.C. +1.268) is associated with a higher rate of Remain Local; as well as a more dense road network – Road length per area (S.C. +0.416). This indicates that Domestic Violence help-seeking whilst Remaining Local is associated with greater possibilities of travelling – both buses availability and the road network.

- **Most important predictor variables for the Go Elsewhere rate**

There are 28 significant (p<0.05) variables associated with the rate of help-seeking Going Elsewhere – on most topics, especially Services, Children, Crime, Health and Transport.

Go Elsewhere Rate		Standard Coeff	Sig.
CH1_Risk_MH	Projected % of 0-17 year olds in a household where an adult has moderate or higher mental ill-health symptoms	2.067	0.022
CH1_Risk_DA_EVER	Projected % of 0-17 year olds in a household where an adult has ever experienced domestic abuse	1.429	0.011
CR2_ABH_200910	Actual Bodily Harm (ABH) crime per 1,000 popn 2009/10	1.117	0.000
CH1_Risk_TTN_TWO	Projected % of 0-17 year olds in a household where an adult has 2 of 3 'toxic trio' issues (narrow measures)	1.018	0.041
CH1_Risk_TTN_THREE	Projected % of 0-17 year olds in a household where an adult has all 3 of the 'toxic trio' issues (narrow measures)	0.943	0.000
SE6_DV_Spend_perFPopnY8	Per Female popn 16+ Spend on Primary Client Group - Domestic Violence 2010-11 (£)	0.814	0.000
HE4_Mort_2008	All age All cause mortality per 100,000 2008	0.578	0.001
HE7_MH_percent_2017	Estimated prevalence of common mental disorders: % of population aged 16 & over	0.518	0.000
T9_ROAD_per_tenthha	Road length per tenth of a hectare	0.513	0.000
EC10_Post2015_pp_pa		0.451	0.016
HE5_HLE_2001		0.438	0.013
CH2_CIN_2010YR_PER10K		0.393	0.035
ED5_NUM_200809_Rate		0.298	0.002
CR3_Viol_2010		0.224	0.001
SE3_HHU_Acc_Propn		-0.144	0.027
P3_MIG_Net_2011_Rate		-0.259	0.005
SP1_AREA_ha		-0.260	0.001
EC5_IB_Q3200708		-0.277	0.021
CO1_NB_cal_2008		-0.313	0.000
HO10_HSG_Aff_2011		-0.318	0.020
HE2_YPSA_200910		-0.344	0.000
CO2_Satis_cal_2008		-0.377	0.003
SE6_DV_SP_SpendPercentYr8		-0.390	0.002
HO14_HSG_Price_All_2011		-0.468	0.000
CR4_VINJ_Rate	Violence against the person - with injury 2011 per popn	-0.863	0.000
CH1_Risk_TTB_THREE	Projected % of 0-17 year olds in a household where an adult has all 3 of the 'toxic trio' issues (broad measures)	-0.987	0.031
CH1_Risk_TTB_TWO	Projected % of 0-17 year olds in a household where an adult has 2 of 3 'toxic trio' issues (broad measures)	-3.296	0.002
SE3_HHU_DV_RateTot	Rate of Domestic Violence HHU per 10,000 total popn. 2011	-16.327	0.000

The thirteen most associated variables, where the Standard Coefficient is greater than ±0.5, are:

Services Domestic Violence service capacity (HHU per popn) is by far the most significant factor **negatively** associated with the Go Elsewhere rate (S.C. -16.327). (Lower Go Elsewhere rate also associated with Domestic Violence % out of total SP spend (S.C. -0.390)). This indicates that Domestic Violence Go Elsewhere help-seeking is related to a lack of availability of specialist support in origin area. However, a higher rate of Go Elsewhere is associated with a higher rate of Domestic Violence SP spend per female popn (S.C. +0.814). So, higher spend on Domestic Violence services per population, but lower units of service capacity, are associated with higher Go Elsewhere help-seeking.

Children A higher rate of Go Elsewhere is associated with a higher percentage of children living with an adult with Mental Health issues (S.C. +2.067), Domestic Violence ever (not in the last year) (S.C. +1.429), and parents with two (S.C. +1.018) or three (S.C. +0.943) of the 'Toxic Trio'. This indicates that Domestic Violence help-seeking Going Elsewhere is associated with some measures of the rate of parental problems and identification of child protection needs in the origin location. However, the rates of two (S.C. -3.296) or three (S.C. -0.987) of the 'Toxic Trio' measured more broadly are **negatively** associated with rate of Go Elsewhere, suggesting a more complex association.

Crime – A higher rate of ABH per popn (S.C. +1.117) (and hospitalisation due to Violence (S.C. +0.224)) is associated with a higher Go Elsewhere rate; *but* lower rate of Violence with injury (S.C. -0.863) is associated with a higher Go Elsewhere rate. This indicates that Domestic Violence help-seeking Going Elsewhere is not clearly associated with the local crime and violence context in the area of origin.

Health A higher rate of Go Elsewhere is associated with a higher Mortality rate (S.D. +0.578) and higher prevalence of common MH problems (S.C. +0.518). This indicates that Domestic Violence help-seeking Going Elsewhere is associated with some measures of poorer health context in the area of origin.

Transport A higher rate of Go Elsewhere is associated with a more dense road network – Road length per area (S.C. +0.513). This indicates that Domestic Violence help-seeking Going Elsewhere is associated with greater possibilities of travelling via the denser road network.

- **Most important predictor variables for the Refuge rate**
There are 23 significant (p<0.05) variables associated with the rate of help-seeking Staying Put – on most topics, especially Services, Crime, Children Transport, Health Housing and Community.

Rate to women's refuges		Standard Coeff	Sig.
CR2_ABH_200910	Actual Bodily Harm (ABH) crime per 1,000 popn 2009/10	1.095	0.000
CH1_Risk_TTN_TWO	Projected % of 0-17 year olds in a household where an adult has 2 of 3 'toxic trio' issues (narrow measures)	1.094	0.049
T6_Bus_perPopn_2011	Passenger journeys on local bus services per head of population 2010/11	0.956	0.024
CH1_Risk_TTN_THREE	Projected % of 0-17 year olds in a household where an adult has all 3 of the 'toxic trio' issues (narrow measures)	0.935	0.000
HE4_Mort_2008	All age All cause mortality per 100,000 2008	0.826	0.000
SE6_DV_Spend_perFPopnY8	Per Female popn 16+ Spend on Primary Client Group - Domestic Violence 2010-11 (£)	0.821	0.000
HE5_HLE_2001	Healthy Life Expectancy at age 65 2001	0.538	0.004
T9_ROAD_per_tenthha		0.450	0.001
HE10_HSH_female_rate_2011		0.426	0.000
CR3_Viol_2010		0.303	0.000
ED4_LIT_200809_Rate		0.263	0.011
SP1_AREA_ha		-0.236	0.007
P3_MIG_Net_2011_Rate		-0.243	0.018
ED2_GCSE_200809		-0.270	0.037
EN1_Energy_200910		-0.331	0.000
SE6_DV_SP_SpendPercentYr8		-0.333	0.022
HE2_YPSA_200910		-0.343	0.000
CR1_SVC_200910		-0.357	0.000
HO10_HSG_Aff_2019		-0.422	0.005
CO2_Satis_cal_2008	% of people satisfied with local area 2008	-0.576	0.000
HO14_HSG_Price_All_2011	Median sale price - All dwelling types 2011	-0.588	0.000
CH1_Risk_TTB_TWO	Projected % of 0-17 year olds in a household where an adult has 2 of 3 'toxic trio' issues (broad measures)	-2.419	0.042
SE3_HHU_DV_RateTot	Rate of Domestic Violence HHU per 10,000 total popn. 2011	-9.176	0.011

The eleven most associated variables, where the Standard Coefficient is greater than ±0.5, are:

Services Domestic Violence service capacity (HHU per popn) is by far the most significant factor **negatively** associated with the rate to Refuges (S.C. -9.176). (Lower Refuge rate also associated with Domestic Violence % out of total SP spend (S.C. -0.333)). This indicates that Domestic Violence help-seeking to Refuges is related to a lack of availability of specialist support in origin area. However, a higher rate to Refuge is associated with a higher rate of Domestic Violence SP spend per female

population (S.C. +0.821). So, a higher spend on Domestic Violence services per population, but lower units of service capacity, are associated with higher help-seeking to Refuges (which is also more likely to be Go Elsewhere – see above).

Crime – A higher rate of ABH per popn (S.C. +1.095) (and hospitalisation due to Violence (S.C. +0.303)) is associated with a higher rate to Refuges; *but* lower rate of Serious Violent Crime per population (S.C. -0.357). This indicates that Domestic Violence help-seeking to Refuges is associated with higher rates of some types of violence in the area, but lower rates of other types of violence.

Children A higher rate to Refuges is associated with a higher percentage of parent with two (S.C. +1.094) or three (S.C. +0.935) of the 'Toxic Trio'. This indicates that Domestic Violence help-seeking to Refuges is associated with some measures of the rate of parental problems. However, the rates of two (S.C. -2.419) of the 'Toxic Trio' measured more broadly is negatively associated with the rate to Refuges, suggesting a more complex association.

Health A higher rate to Refuges is associated with higher Healthy Life expectancy at age 65 (S.D. + 0.538), Higher Mortality rate (S.D. +0.826) and higher female rate of emergency hospitalisation for Self Harm (S.C. +0.426). This indicates that Domestic Violence help-seeking to Refuges is not clearly associated with the local health context in the area of origin.

Transport A higher local bus journeys rate per population (S.C. +0.956) is associated with a higher rate to Refuges; as well as a more dense road network – Road length per area (S.C. +0.450). This indicates that Domestic Violence help-seeking to Refuges is associated with greater possibilities of travelling – both buses availability and the road network.

Housing Median house price is negatively associated (S.C. -0.588) with the rate to Refuges – so accessing Refuges is less likely from areas of higher house prices. This may indicate more disposable assets/income to be able to take other options.

Community A higher rate of satisfaction with the local area (S.C. -0.576) is associated with a lower rate of Domestic Violence help-seeking to Refuges. This indicates that Domestic Violence help-seeking to Refuges is less likely from a more satisfied sense of community – and may indicate greater levels of community support as well.

- **Most important predictor variables for the Other Accommodation rate**

There are 8 significant (p<0.05) variables associated with the rate of help-seeking Staying Put – on the topics of Children, Crime and Education. There is no association with factors such as Community, Economy, Environment, Health, Housing, Population, Services, Spatial or Transport.

Rate to other accommodation			
		Standard Coeff	Sig.
CH2_CIN_MAR2010	Children In Need at 31 March 2010	1.523	0.000
CH2_S47_2010YR_PER10K	Rate of s47 per 10,000 child popn 2009-10	1.166	0.025
CH1_Risk_TTN_THREE	Projected % of 0-17 year olds in a household where an adult has all 3 of the 'toxic trio' issues (narrow measures)	0.597	0.032
CR2_ABH_200910		0.380	0.033
ED5_NUM_200809_Rate		0.242	0.031
CH10_SchE		-0.222	0.016
CH2_CIN_MAR2010_PER10K	Rate of CIN at 31 March 2010 per 10,000 child popn	-0.683	0.012
CH2_S47_2009_10	All children who were subject to section 47 enquiries which started 2009-10	-0.767	0.001

The five most associated variables, where the Standard Coefficient is greater than ±0.5, are all on the topic of Children:

Children A higher rate to Other Accommodation is associated with a higher count of Children In Need snapshot in March (which is likely to relate to population) (S.C. +1.523), yearly rate of s47 Child Protection (S.C. +1.166), and percentage of parents with three (S.C. +0.597) of the 'Toxic Trio'. This indicates that Domestic Violence help-seeking to Other Accommodation is associated with some measures of the rate of parental problems and child protection responses. However, the rates of CIN snapshot per popn. (S.C. -0.683) and count of s47 pa (which is likely to relate to population of course) (S.C. -0.767) are **negatively** associated with rate to Other Accommodation. It may be that higher levels of statutory responses to more extreme child abuse indicate greater action by statutory authorities which are also more likely to refer to Other Accommodation.

- **Most important predictor variables for the Non-Accommodation rate**

There are 5 significant (p<0.05) variables associated with the rate of help-seeking Staying Put – only on the topics of Health and Services. There is no association with factors such as Children, Community, Crime, Economy, Education, Environment, Housing, Population, Spatial or Transport.

Rate to non-accommodation			
		Standard Coeff	Sig.
SE3_HHU_DV_RateTot	Rate of Domestic Violence HHU per 10,000 total popn. 2011	14.870	0.000
HE5_HLE_2001	Healthy Life Expectancy at age 65 2001	0.645	0.007
SE3_HHU_DV_Propn	Proportion of all Supporting People HHU that are Domestic Violence specific	0.503	0.008
HE11_LE_SII_years_2011		0.277	0.006
SE5_Ref_Room_11		-0.463	0.009

The three most associated variables, where the Standard Coefficient is greater than ±0.5, are:

Services Domestic Violence service capacity (HHU per popn) is by far the most significant factor positively associated with rate to Non-Accommodation (S.C. +14.870); as well as the proportion of all SP HHU that are Domestic Violence (S.C. +0.503). This indicates that Domestic Violence help-seeking to Non-Accommodation is about the availability of specialist support – and suggests an unmet demand for Non-Accommodation support.

Health A higher rate to Non-Accommodation is associated with higher Healthy Life expectancy at age 65 (S.D. + 0.645). This may indicate that Domestic Violence help-seeking to Non-Accommodation is more possible in areas of better older health – and Non-Accommodation is also more likely for older women (Bowstead 2021).

Key factors in summary to explain rates of domestic violence help-seeking

- Domestic violence service capacity in an area is strongly positively associated with the rates of women staying put and accessing non-accommodation service support; as well as relocating for support but remaining local. Domestic violence service capacity is also strongly negatively associated with rates of going elsewhere and rates of accessing women's refuges, indicating that service support and availability in an area is the key factor in the possibility and options for women's help-seeking.
- Areas of better health – especially for older people – have higher rates of staying put and seeking help from non-accommodation services. However, areas of poorer health are associated with relocating and both remaining local and going elsewhere, indicating that any association is complex. In addition, health variables on alcohol and drug dependency were excluded from the modelling as not significant.
- Areas of higher child poverty have higher rates of remaining local, maybe suggesting fewer financial options to go elsewhere. However, many economic variables on employment, unemployment, benefits and pay were excluded from the modelling as not significant, suggesting that the local economic context has little impact on the rates and types of domestic violence help-seeking.
- Areas of higher house prices have lower levels of remaining local, and lower levels of accessing refuges – suggesting that more disposable assets/income may enable other options. However, many variables on housing ownership, public and private renting, and homelessness in an area were excluded from the modelling as not significant.
- Greater possibilities of travelling – both bus and road networks – are associated with both higher rates of remaining local and higher rates of going elsewhere,

suggesting that transport options enable the journeys that women and children need to make – whether local or far.

- Areas with higher levels of some measures of parental problems and child protection activity have higher levels of remaining local, but also of going elsewhere, indicating that any association with domestic abuse help-seeking is complex. This is also reinforced by the fact that many variables on children's health, participation and schooling were excluded from the modelling as not significant.
- Factors such as local crime levels, education levels, internal migration rates and most measures of the community, environment and economy are not clearly associated with different types or rates of domestic violence help-seeking.

6.6   Describing and using the classifications

As the summary above indicates, it is only domestic violence service capacity that has a clear unequivocal directional association with the rates of different types of help-seeking to different types of services. This is what would be expected. However, the other associated factors, whilst being statistically significant, point more to the limited influence of place characteristics in determining/predicting rates and types of domestic violence help-seeking within or from any particular local authority.

The extent of different types of help-seeking to different types of service support is overwhelmingly determined by population; and the rates of such help-seeking to services are overwhelmingly determined by the provision and capacity of such services.

It is arguable, therefore, that a range of types of domestic abuse service provision should be distributed across the country, without barriers to access, and with sufficient capacity to meet needs simply according to population levels. Individuals need to – and should have the right to – seek help when and where they require; and the focus of levels of government – from local and county to national – should be on provision. Is there really a justification for detailed and repeated 'needs assessments' at a local level when tens of thousands of women and children are on the move due to abuse and in urgent need of help and support?

Given the evidence presented here, population and service provision (type and capacity) are the dominant determinants of domestic abuse help-seeking, and classifying local authorities according to much more minor factors is difficult to justify.

The place typology classification using cluster analysis confirms this. Whilst clusters can be generated, and there is clear geographical clustering for some of the classifications, the majority of local authorities are generally grouped into two or

three cluster types. As with much of the analysis, London is also distinctive for some of the classifications, with clusters often either being only in London, or not in London at all.
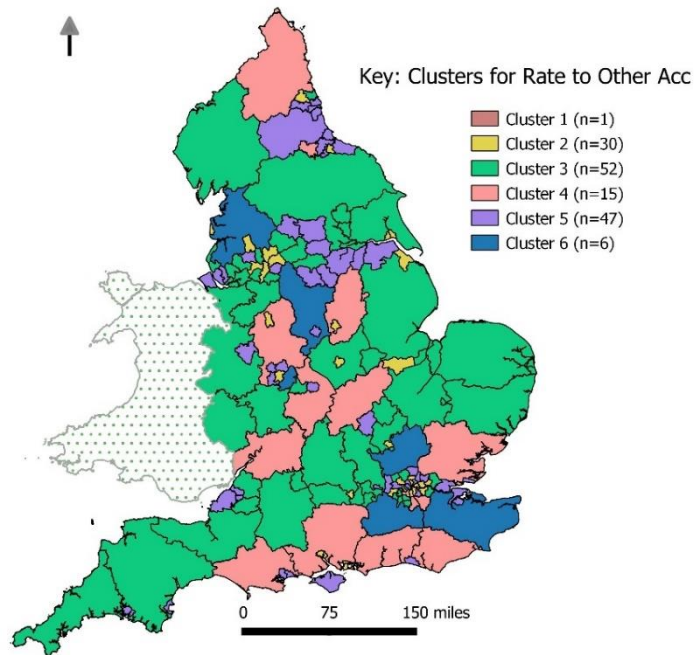
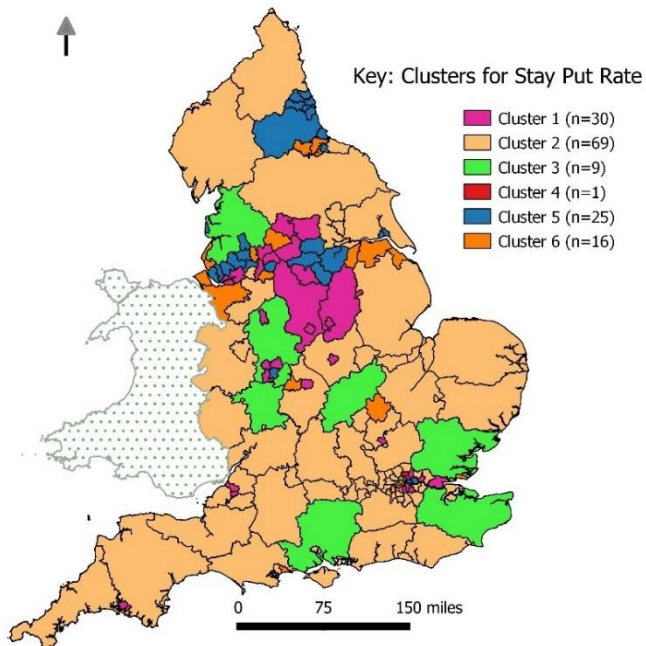**Map of clusters based on rate to Non-accommodation services**
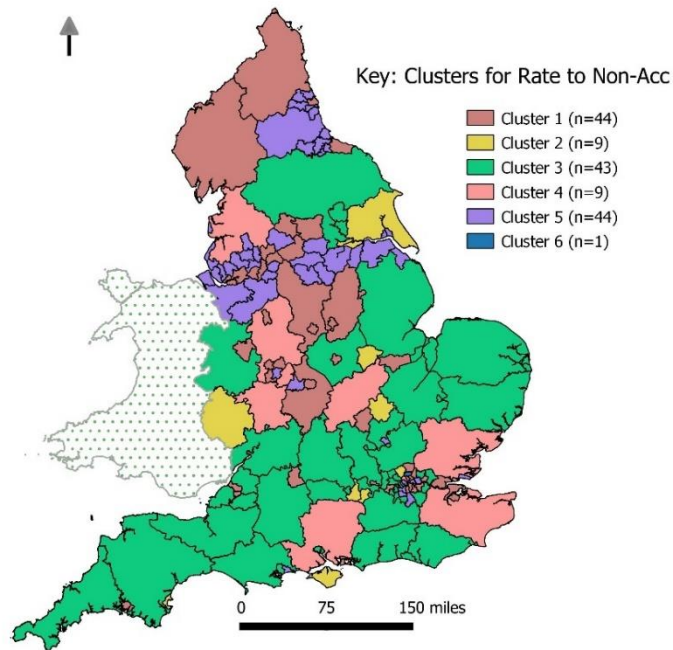
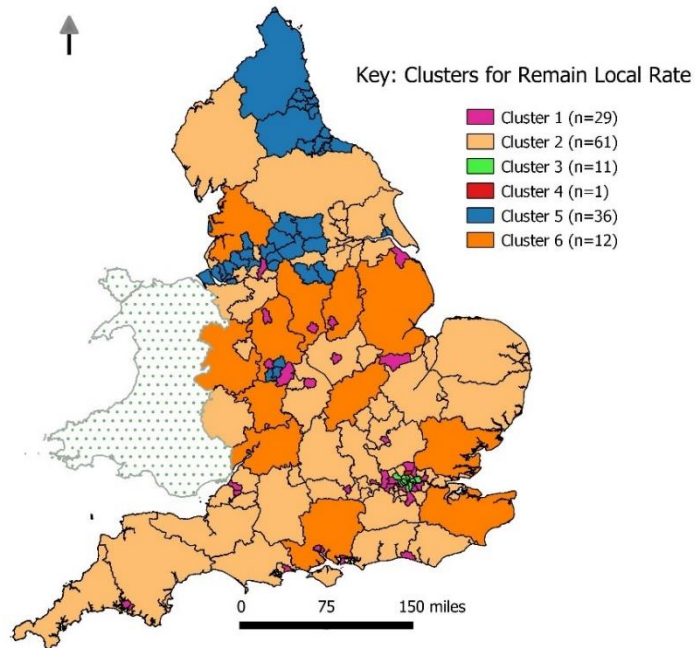**Map of clusters based on rate to Refuges**
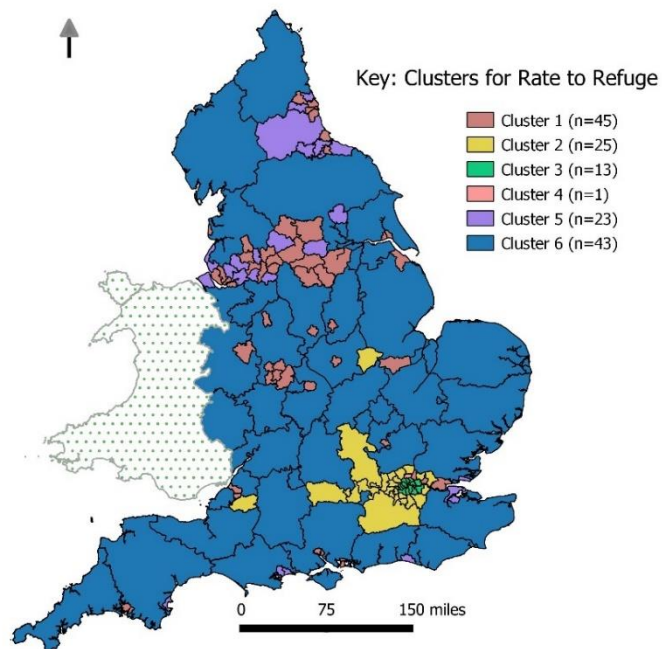
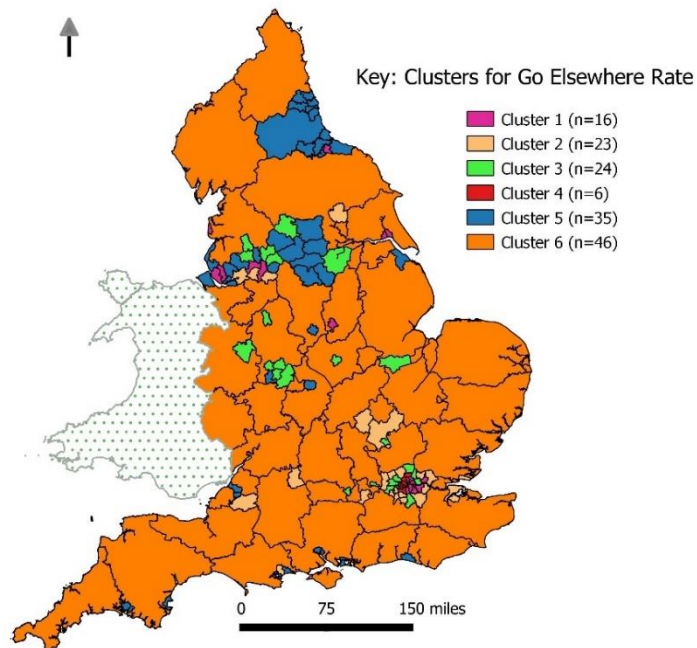## Map of clusters based on rate to Other accommodation services

Map of clusters based on Staying Put rate

Map of clusters based on Remaining Local rate

Key: Clusters for Remain Local Rate
- Cluster 1 (n=29)
- Cluster 2 (n=61)
- Cluster 3 (n=11)
- Cluster 4 (n=1)
- Cluster 5 (n=36)
- Cluster 6 (n=12)

0   75   150 miles

Map of clusters based on Going Elsewhere rate

Key: Clusters for Go Elsewhere Rate
- Cluster 1 (n=16)
- Cluster 2 (n=23)
- Cluster 3 (n=24)
- Cluster 4 (n=6)
- Cluster 5 (n=35)
- Cluster 6 (n=46)

0   75   150 miles

The cluster analysis can therefore be used to cluster together similar local authorities, but is of limited usefulness given how many local authorities are identified as similar on these key factors – especially for the analysis of rates to access women's refuges, and rates across local authority boundaries ("Go Elsewhere").

As a result, the final stages of developing a place classification will be described only briefly here, and the conclusion is that seeking reasons why any particular local authority area should have less (or more) service provision than is indicated by its population would be something of a displacement activity from the more urgent concern of ensuring sufficient and suitable service provision according to the ETHICAL approach outlined at the start of this technical paper.

Describing the clusters

Once the groups of local authorities had been identified, the next step would be describing and naming the clusters. To support understanding and adoption by policy makers and practice users, consultation with policy users would be recommended before arriving at a final set of names. Naming is most usually done by seeing what are the most salient characteristics of each group:
- Characteristics with Standard Coefficients greater than 0.5 (-/+)
- Identifying clusters by whether they are high or low on these factors
- Considering the characteristics of outliers (clusters with only one or two members)

Whilst the cluster analysis successfully distinguished different clusters on these factors, the next steps toward effective use of such clusters in decision-making around domestic violence service provision depend on the wider context of policy-making and practice. Unfortunately, in terms of the evidence-based approach outlined in this technical paper, the current context of such policy-making in England has been determined by the Domestic Abuse Act 2021 which devolves needs assessment <u>and</u> provision to Tier 1 local authorities, whether or not this is appropriate. More positively, the Domestic Abuse Act 2021 does devolve the process for London to the region as a whole, which is indicated as more likely to be effective in terms of the distinctiveness of London on numerous factors, and the resultant analysis whereby clusters are often either London-only or non-London local authorities.

The final classification(s)
The final classifications would incorporate the descriptions of the clusters' salient characteristics, and acknowledge the different characteristics of the English regions.

Using the classification

Given the limited usefulness of the cluster analysis in the current policy context, as outlined above, the clusters have not yet been consulted on for policy use. That would be a future possibility in the context of an openness as to the appropriate scale of government for service provision and access to provision.

There would be a process of testing the classification via a series of questions and consultations:

- **Does the typology identify areas with characteristics of policy interest?**
    - Data analysis to see whether the typology distinguishes groups of areas which share characteristics of policy interest.
    - The classification is much more useful if the groups differ in other characteristics that may be of policy interest, but which were not used in generating the classification itself.
- **Does it offer anything over existing typologies?**
    - Data analysis to see whether it is more sensitive to the policy domain than existing classifications.
- **Feedback from policy users**
    - Presenting the typology to potential policy users and analysts to get their qualitative feedback.

In the meantime, the cluster analysis was used in finalising the analysis within this project to produce an evidence-based formula for a minimum level of domestic abuse services of different types.

As outlined in the technical paper on service Type and Capacity, basing the formula for provision on expressed demand is not just an absolute minimum, but also exposes the problem of local authorities which provided no services and therefore appeared to have no demand for local services. Women and children leave *every* local authority seeking help from services due to domestic violence, so no local authorities actually have no demand for services (i.e. all have a Go Elsewhere rate of help-seeking, and a rate of accessing accommodation services in other local authorities). However, a few local authorities have no rate for accessing non-accommodation services in their own area, because they provided no such services. Non-accommodation services under the Supporting People Programme varied significantly from place to place, with some local authorities providing no such services either because there was no provision in their area or because such services were funded from other sources (see the technical paper on Type of Capacity for examples).

As a result, the cluster analysis was used to impute the unexpressed demand for non-accommodation services within those local authorities which provided no such services – using the mean rate for the other local authorities within that same cluster.

This increased the total demand for non-accommodation services to be used within the formula calculations (see the technical paper on Type and Capacity for more detail) by a factor of approximately 1.24.

7   Formula for service provision: Conclusions on location and place classification

From this research, a formula for different types of services provision in England for women – recognising how women use refuges, other types of accommodation services, and non-accommodation services – has calculated the minimum provision required for this help-seeking due to domestic abuse. It uses administrative records of women's actual help-seeking to services; as well as data on service location and capacity, and on characteristics of people and places, to analyse their association (or not) with different strategies and rates.

7.1   Accommodation services

A minimum of 5,369 family bedspaces, of which 4,497 should be 'Women's Refuge' spaces and 872 'Other' types of support accommodation.

Women's refuge provision must include specialist 'by and for' provision, in addition to being women-only; whereas other accommodation may be more generic but equally may be for higher and specialist support needs, such as by providing 24 hours' staffing, separate rooms for teenage children, or particular staff specialisms. Staffing roles and levels must therefore be factored in beyond the bricks-and-mortar of 'bedspaces' to provide genuine support capacity.

N.B. The majority of help-seeking to accommodation is across Tier 1 Local Authority administrative boundaries – 60% – but this is made up of women's different strategies to refuges (65% across boundaries) in comparison to other types of support accommodation (33% across boundaries). Planning, funding and provision – as well as eligibility – must therefore be across these boundaries, at the national and regional scales.

The location analysis outlined in this technical paper has identified the limited influence of place characteristics on rates of help-seeking to access accommodation services, and has highlighted the lack of evidence for the influence of factors that might have been expected to be more important, such as economic, crime and housing characteristics.

As a result, the main conclusion is that there should be sufficient accommodation provision across the country in all types of places, and with no location exclusion

criteria or rationing. Despite this formula being based on increasingly historical data of expressed demand, provision of family bedspaces as recorded by Women's Aid Routes to Support (Women's Aid 2022b) is still below the required minimum level indicated by this formula (and by the Council of Europe recommendation (Council of Europe 2011b, 25)). Overall, the actual count of 4,332 family bedspaces in England in 2022 is below both the minimum from this formula (5,369) and the minimum recommended by the Council of Europe (5,656).
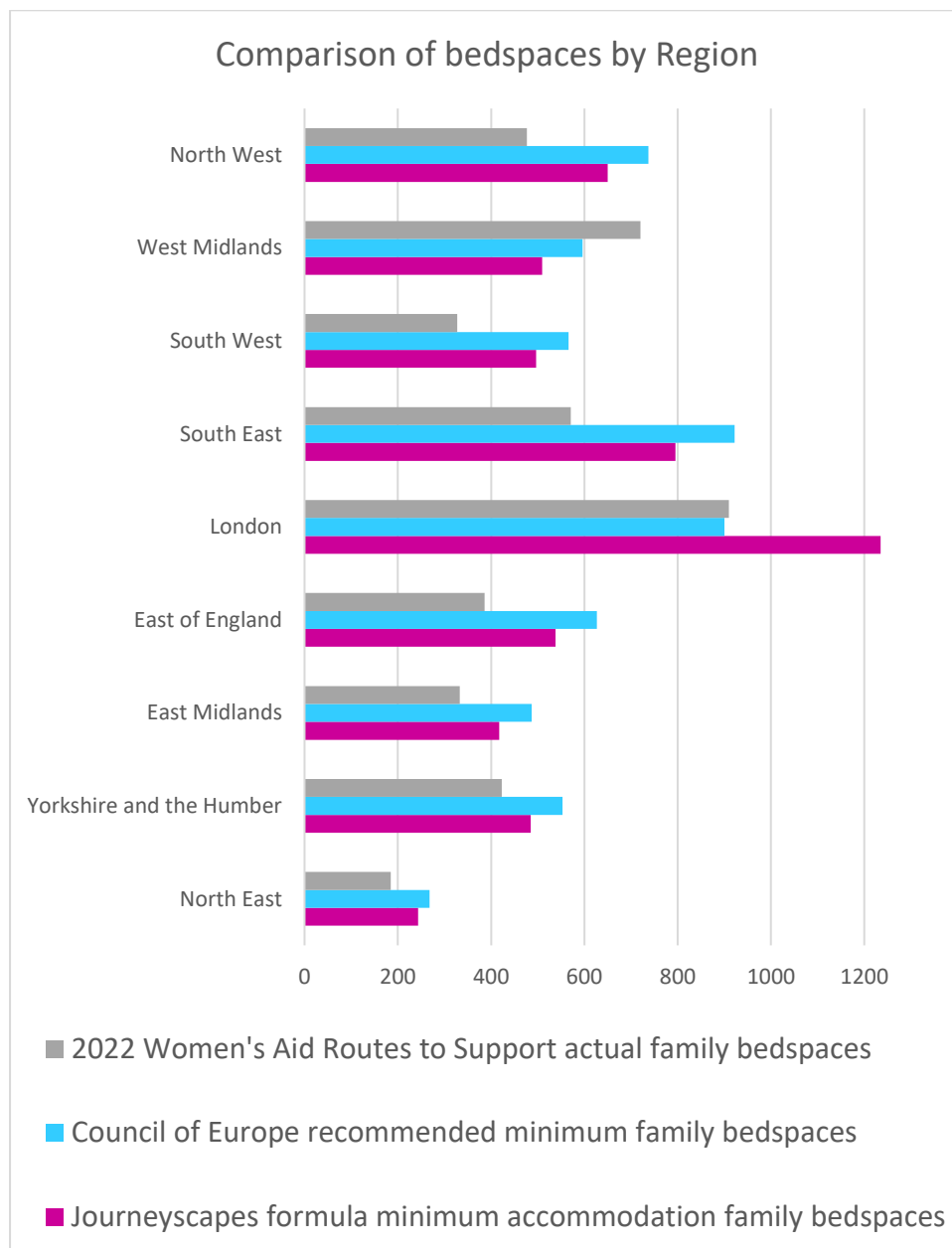
The graph shows that only the West Midlands region currently has higher provision than the minimum of the formula from this research, and that whilst provision in London meets the population-based Council of Europe recommendation, it does not

meet the higher minimum calculated by this research by taking into account the distinctiveness of London in terms of length of stay in services.

The *initial* stage for a policy towards an ETHICAL service provision would be to fund the different types of service up to the minimum capacity. Thinking and planning regionally would be more functional than the current narrow focus on local authorities. After identifying the shortfall per region, actual provision should be in all types of places (all types of local authorities) – but strictly *hosted* by them and not in any way limited to women and children from that local authority. Planning and funding must be at the scale of women and children's domestic violence help-seeking and journeys: *scale* meaning both providing sufficient capacity and provision at the appropriate geographical scale.

The vision of this research is of Journeyscapes: that women and children should be enabled to journey as far as they need, and stay as near as they can, with the role of the state authorities being to journeyscape (by an infrastructure of law, policy, and provision) an otherwise potentially hostile terrain.

7.2   Non-accommodation services

A minimum of 1,084 fte (full-time-equivalent) community-based specialist support workers (separate roles from 'advice'; or risk-based 'advocacy'); rising to a minimum of 1,543 fte workers to be able to support women with additional needs beyond the domestic abuse.

Specialist workers such as outreach, support or resettlement workers will work with a maximum number of women at any one time ('caseload') and for a range of timescales. A rights-based approach would provide holistic support, without arbitrary time limits. From this research, the timescales are based on the actual length of time women received such services, so are very much a minimum. This also does not include at all the support services children need and deserve.

N.B. The vast majority of help-seeking to non-accommodation services is within Tier 1 Local Authority administrative boundaries, or within London as a region, but access must still be needs- and rights-based and therefore available across boundaries. Currently, there are no comparable figures of current provision of this type of community-based specialist support worker, nor recommended minimum provision for comparison. The Location analysis in this paper indicates that the need for such services is everywhere, and that provision tends to enable previously hidden help-seeking.

8   Further Reading

https://www.womensjourneyscapes.net/

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