Heriot-Watt University
Research Gateway

Homelessness Amongst Black and Minoritised Ethnic Communities in the UK

Citation for published version:
Bramley, G 2026, *Homelessness Amongst Black and Minoritised Ethnic Communities in the UK: Technical Report on Quantitative Research*. Heriot-Watt University. https://doi.org/10.17861/e2ee-5y04

Digital Object Identifier (DOI):
10.17861/e2ee-5y04

Link:
Link to publication record in Heriot-Watt Research Portal

Document Version:
Publisher's PDF, also known as Version of record

General rights
Copyright for the publications made accessible via Heriot-Watt Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
Heriot-Watt University has made every reasonable effort to ensure that the content in Heriot-Watt Research Portal complies with UK legislation. If you believe that the public display of this file breaches copyright please contact open.access@hw.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Download date: 13. Nov. 2026

Homelessness Amongst Black and Minoritised Ethnic Communities in the UK:

Technical Report on Quantitative Research



Glen Bramley

January 2026

HERIOT WATT UNIVERSITY

I·SPHERE
Institute for Social Policy, Housing and Equalities Research

Contents

Section	*Title*	*Page*
	Acknowledgements	2
1	Introduction	3
2	Research Questions	5
3.1	Methods	6
3.2	Motivation	7
4.1	Definition and Scope of Homelessness	8
4.2	Race, Ethnicity and related indicators	9
5	Disproportionate Experience of Homelessness	11
6	Exploring the Explanation of the Disproportionate Experience of Homelessness	29
7	Exploring Local Level and Multi-level Models	44
8	Exploring Structural Models and Mediation	54
9.1	Disparities in Outcomes of Statutory Homelessness Process	76
9.2	Multi-level Modelling of Outcomes	80
10	Conclusions	88
	References	92

Acknowledgements

We would like to extend our thanks to all members of the Programme Advisory Group who provided extremely helpful and insightful comments on the draft report, as well as providing unstinting and invaluable support through this entire programme of work. Seldom in our experience has a Programme Advisory Group played a more important and constructive role in shaping a research programme than the stellar group involved in this one, namely Francesca Albanese (Crisis), Shabna Begum (The Runnymede Trust), Harinder Birring (Shelter), Rachel Casey (Joseph Rowntree Foundation) Nigel Denoronha (Manchester University), Dorian Leatham and Maurice McLeod (independent members), and Louise Montgomery and Brian Robson (Oak Foundation). Nigel Denoronha in particular provided detailed review and comment on this Technical Report. Particular thanks also to Louise for her incredible support throughout, and to Raji Hunjan, formerly of Oak Foundation, who's passion and vision helped to launch this work.

We would also like to give heartfelt thanks to our partners and collaborators on particular aspects of this research and capacity building programme, and most especially to Race on the Agenda (ROTA), The Runnymede Trust, and the West Midlands Combined Authority, each of whom made pivotal contributions in different ways to specific projects in the programme.

Members of the Race Research Coordination Group were enthusiastic supporters, facilitators and disseminators of our work on ethnicity and homelessness throughout the lifetime of this project. We really welcomed, enjoyed and benefited from the open spirit of collaboration that prevailed, and continues to prevail, in that informal grouping.

The researchers acknowledge the facilitation and support provided by the Office for National Statistics (ONS) Secure Research Service (SRS) and associated Statistical Support in hosting a significant part of this research involving the use of household-level data from the H-Clic Administrative system and linked local authority level contextual data. This was made possible by the Ministry of Housing Communities and Local Government (MHCLG) preparing micro household-level datasets of homelessness cases including their background circumstances but also the outcomes of their journey through the statutory homelessness system over 2-3 years, for three intake cohorts (2019/20, 2020/21, and 2021/22), providing a total of c.750,000 household records for analysis.

1. Introduction

Homelessness Amongst Black and Minoritised Ethnic Communities in the UK knowledge and capacity building programme, funded by Oak Foundation, aimed to support a fundamental step change in the UK evidence base on homelessness amongst people from Black and minoritised ethnic communities.

The programme was conducted by the Institute of Social Policy, Housing and Equalities Research (I-SPHERE) at Heriot-Watt University, with a first statistical report completed in partnership with Race on the Agenda and overseen by an expert Programme Advisory Group in late 2022. Further major statistical work fed into both a detailed report on the West Midlands Combined Authority area and the main final report of the project, both published in summer 2025.

The overall programme ran from 2022 to 2025 and aimed to offer a comprehensive account of the overall statistical picture with regards to the experience of homelessness of people from Black and minoritised ethnic communities, alongside rich qualitative evidence from research 'deep dives' into key groups, issues and experience of concerns. All this was done with a view to influencing priorities, tools and levers for intervention that can be used to reduce and eliminate racial discrimination, disparities and injustices in the homelessness and housing field. For further information on the programme go to Homelessness and Black and Minoritised Ethnic Communities in the UK – I-SPHERE (hw.ac.uk)

This technical paper presents a combination of two main elements. The first involved an initial analysis of a range of statistical data sources, based on Census, surveys and administrative data, highlighting evidence of relative rates of homelessness and related housing needs/issues across main ethnic groupings. As such it provides a fuller background to the *Statistical Report on the State of the Nation* published in November 2022[1].

The second element extended the work, primarily through undertaking the first independent analysis of the large scale administrative datasets created by local authorities through their operation of the Statutory Homelessness system in England since 2018. This new form of mandatory individual record based administrative data (known as HCLIC) was introduced from 2018 following the Homelessness Reduction Act, which widened local authority duties towards prevention and relief of homelessness, and the author was able to access these data through the Office of National Statistics Secure Research Service (ONS-SRS) and conduct detailed analyses of patterns and relationships within these data. By following most homeless applicants through from application to outcome over 2-3 years, for three annual cohorts amounting to 750,000 households, this work has enabled unique new insights into how needs, experiences and outcomes vary between different ethnic groups and across different geographical localities and regions, controlling for relevant demographic, market and other factors.

The next section of the paper outlines the research questions that this paper seeks to address, before the methods used are summarised, and the key definitions (homelessness, and race and ethnicity) are laid out. The remaining sections of the paper then focus on

[1] See Bramley, G., Fitzpatrick, S., McIntyre, J. and Johnsen, S. (2022) *Homelessness amongst Black, Asian and minoritised ethnic people in the UK: A statistical report on the State of the Nation* https://i-sphere.site.hw.ac.uk/homelessness-and-black-and-minoritised-ethnic-communities/

evidence of the disproportionate experience of different forms of homelessness faced by Black and minoritized ethnic groups, using both basic descriptive data and various elements of statistical modelling which begin to unpack the role of different underlying factors in accounting for these differences. The report then presents findings from the subsequent detailed work utilising the administrative outcomes data analysed within the Secure Research environment. We then summarise a range of conclusions which have fed into the main published reports, while also suggesting some areas for further statistical exploration. It should be noted that some of the datasets drawn on are UK or GB-wide, while some cover only England, Scotland or Wales. In each section we start with the most geographically extensive data we have and then work towards the more geographically specific. The later work using the HCLIC cohort outcomes data undertaken within the SRS only refers to England.

It should be noted that when this project commenced the research programme was entitled "Homelessness and Black, Asian and Minority Ethnic Groups in the UK: A Knowledge and Capacity Building Programme", with the then widely used acronym 'BAME' employed as shorthand in project papers. We are aware of recent debates on the appropriateness of the use of this acronym and have changed the terminology used in the main published reports. In this Technical Report, with its many tables and graphs, it is more difficult to dispense with acronyms and so we continue to use BAME in places.

Please also note that, whether specific findings are reflective of individual people or households, depends on the dataset(s) drawn upon. As households cannot have a specific race or ethnicity – only people can – when reporting household level findings we refer to 'Black-led', 'White-led' etc households to capture the race or ethnicity of the 'household reference person' who completed the relevant survey.

2. Research questions

Using a mixed method approach, deploying both (extensive) statistical and (intensive) qualitative methods, this research programme will answer the following research questions. The *italicised text* indicate where the *quantitative analysis* was expected to contribute:

1. To what extent do people from different racial and ethnic groups face *differential risks of experiencing homelessness?*
2. Does the relative level of risk *vary between a) different minoritised groups, and b) different forms of homelessness?*
3. How does *race and ethnicity interact with other key variables* – such as age, gender, income, economic status, geography, household type, disability, immigration status, language, etc. – in accounting for differential levels of homelessness risks?
4. Do the *drivers of, and pathways into, homelessness vary between different racial and ethnic groups?*
5. Do different ethnic groups attain *different outcomes* from their pathway through homelessness, particularly within the Statutory Homeless system
6. To what extent are racial disparities in homelessness and housing outcomes attributable to *discrimination* (individual, institutional or structural), historical racism or other factors?
7. What are the *principal mechanisms* via which any relevant forms of racial discrimination impact on homelessness, both *directly* (e.g. reduced access to housing) and *indirectly* (e.g. via heightened exposure to poverty)?
8. Do different ethnic and racial groups have divergent experiences of statutory and voluntary sector homelessness services?
9. How do the homelessness experiences of BAME *people vary by gender, age, geography* (especially London v outside of London) *and other key variables*?
10. What are the *key policy levers* and practical tools that can be deployed to reduce risks of homelessness amongst BAME communities? What wider lessons can be drawn on reducing racial disparities in housing outcomes?
11. Are there policies or practices which have been shown to work to tackle BAME homelessness in particular areas and are these policies and practices transferable to other localities or communities?

In the first quantitative report, the main focus was on Questions 1, 2, and 4, with a first look at Questions 3, 6 and 7 also being attempted in some instances, and with the key geographical divide (Question 8) between London and the rest of the country also being drawn out. In the later reports the focus has been primarily on the Statutory Homelessness system in England, but with the quantitative work deepening the evidence on a number of these questions (1-4) but with a major new focus on outcomes (5) and geography (9).

3.1 Methods

We have undertaken a rapid analysis, or re-analysis, of *ten data sources*:

- The *official Homelessness Statistics* for England produced via the new H-CLIC system since 2018 (3 years' data), and equivalent data for Wales and Scotland.
- The *2011 Census of Population*, for various indirectly related housing indicators

- The *Labour Force Survey*, also badged as the Annual Population Survey, for 2010, 2015 and 2020, for concealed and sharing households measures.
- The *English Housing Survey* for the period 2016/17-18/19, which contains multiple indicators of aspects of homelessness
- The *Scottish Household Survey* 2012-15, questions on retrospective homelessness experiences, plus data for years up to 2018/19 on sofa surfing and affordability
- The ESRC-funded *PSE UK 2012* poverty and social exclusion survey, for questions on retrospective homelessness experiences as well as discrimination
- The *British Cohort Study* which tracked a representative 1970 birth cohort over the following 30-40 years.
- The *UK Household Longitudinal Survey* (UKHLS), for measures of related housing needs and a proxy measure of rehousing as homeless across UK, 2010-19.
- The *Kantar 'Public Voice' panel* survey of adults living in private households conducted across UK in 2020, using special questions on retrospective homelessness experiences
- A large panel dataset of *local authority level data from multiple official sources* for England, as used to support modelling of aspects of homelessness[2], in this case enhanced by including estimates of post-2011 ethnic population numbers.

In the later phase of the study, the main focus has been on the in-depth analysis of HCLIC administrative data for three annual cohorts of homeless applicants in England (who applied as homeless in the financial years 2019/20, 2020/21, 2021/22, and were followed through to recorded outcome of case for a period of up to 3 years), involving a total of c.750,000 households. This analysis was undertaken through the ONS Secure Research Service, involving a separate application and approval process, and stringent procedures to protect individual confidentiality of the research subjects. Unlike the normal form of published data on Statutory Homelessness, which comes in the form of tables which give breakdowns of one variable at a time by local authority or region, this SRS-based study could analyse relationships between multiple variables at individual household level in a flexible fashion, subject only to disclosure limitations affecting table cells with very few households in them. Two substantial tranches of additional data at Local Authority Level (pre and post 2021 Census results becoming available) were brought into the SRS and linked to the individual records to provide a stronger contextual basis in terms of local demography, economy and housing market conditions, and these play a particularly significant role when modelling risks or outcomes statistically.

3.2 Motivation

The underlying drivers for this study are concerns that, first, some minoritised groups may be experiencing adverse housing outcomes in the form of homelessness and related housing difficulties to a disproportionate degree, and second, that this may be the outcome of discrimination.

The first task for this research was therefore to explore whether there was evidence of disproportionate experience of homelessness for some or all minoritised groups. As shall be

[2] This dataset has been developed to support work for Crisis since 2017 on homelessness projections, as published in the Homelessness Monitors series; see particularly the 2021 Technical Report, Bramley [full reference and Link]; the work reported here is for England, but parallel datasets are available for Scotland and Wales.

seen below, this is readily demonstrable across a range of the data sources we analysed for several BAME groups, although not necessarily for all.

The second task – i.e. to test whether these poor outcomes were the result of discrimination - is much more difficult to accomplish from a statistical perspective. This is in part because homelessness outcomes are interrelated with other conditions experienced by the groups in question. Homelessness today may well reflect adverse experiences in earlier life, for example in education, leading to poorer levels of employment and earnings in adulthood, leading to financial difficulties with obtaining or maintaining housing tenancies. However, a positive recent development is that several surveys now ask direct questions about people's perceived experiences of discrimination, harassment or adverse treatment related to race or ethnicity, including in relation to housing, and these data are brought into the analysis.

The statistical analysis can get us some way in terms of apportioning the part of (variations in) homelessness experience which can be attributed to a range of factors, including age, marital /family status, educational qualifications, past and present employment, income, savings/debts, housing history, physical and mental health, criminal record and so forth. It can indicate whether ethnicity independently predicts a higher (or lower) risk of homelessness at the relevant life-stage, having controlled for these other factors. However, particularly in cross-sectional surveys, it cannot say how much of past background accumulated advantages or disadvantages themselves were affected by past instances of discrimination (or other manifestations of racism, such as low expectations, hostility or harassment).

Arguably, when looking at *outcomes* of homelessness experiences now/recently, the past background factors may be less of a confounding factor. Some of the most powerful evidence from this study has derived from the SRS analysis of homeless outcomes, where there are clear and systematically worse outcomes experienced by some minoritised groups. Again, we are able to use modelling to attempt to control for other factors when reaching this conclusion.

Additional statistical analysis has been undertaken at the level of local authorities across England to explore variations in the rates of statutory homelessness experienced by the main ethnic groups in different regional and local contexts, including differences in the drivers of these rates and what differences remain unexplained. Subsequently, working within the SRS, this modelling could be undertaken at individual household level but incorporating the local contextual factors.

We have also commenced a more challenging set of statistical analyses under the general rubric of structural modelling, to try to explore the potential indirect as well as direct causal influences on homelessness which lead to the higher levels experienced by some groups. This work has been somewhat exploratory but has, across several distinct datasets, established that indirect effects of ethnicity and related factors (discrimination, migrancy) can be as important as the direct effects.

4.1 Definition and scope of homelessness

For the purposes of this research we would suggest the following framework for defining homelessness which has informed our work with Crisis, including on the Homelessness Monitor series[3]. This framework distinguishes four partially overlapping categories of interest:

A. 'Core homelessness' - people experiencing the most extreme and immediate forms of homelessness, as described in Table 1 below.
B. 'Statutory Homelessness' – people who have applied to a local authority and been found to be homeless or at risk of becoming homeless in the next 56 days under the terms of the relevant homelessness legislation in each of the four UK jurisdictions.
C. 'Hidden homelessness' – that is, people who may be considered homeless but whose homelessness is not 'visible' either on the streets or in mainstream homelessness statistics. This can include 'overcrowded', 'sharing', and 'concealed' households. Not all are necessarily homeless, and some may be sharing through choice, but, particularly when associated with other negative outcomes, these situations may be considered a form of homelessness.
D. 'Others at risk of homelessness' – this category refers to people whose housing situation is so insecure or unsustainable that there is a significant likelihood of their moving into categories A, B or C in the fairly near future because, for example, of the financial pressures they face.

Table 1: Core Homelessness Categories and Definitions

Category	***Description***
Rough Sleeping	Sleeping in the open e.g. in streets, parks, carparks, doorways
Unconventional Accommodation	Sleeping in places/spaces not intended as normal residential accommodation, e.g. cars, vans, lorries, caravans/motor home, tents, boats, sheds, garages, industrial/commercial premises
Hostels etc.	Communal emergency and temporary accommodation primarily targeted at homeless people including hostels, refuges and shelters
Unsuitable Temporary Accommodation	Homeless households placed in temporary accommodation of certain types, viz Bed and Breakfast, Private Non-selfcontained Licensed/Nightly Let, and Out of Area Placements (half in London, all elsewhere)
Sofa Surfing	Individuals or family groups staying temporarily (expecting or wanting to move) with another household, excluding non-dependent children of host household and students, who are also overcrowded on the bedroom standard

The components of core homelessness and their definitions as applied in recent Homelessness Monitors are shown in Table 1 above[4]. A substantial proportion of households

[3] See https://www.crisis.org.uk/ending-homelessness/homelessness-knowledge-hub/homelessness-monitor/
[4] From 2025, estimates of core homelessness rates at local authority level have been included in the official Indices of Deprivation (ID25) for England.

who are accepted by local authorities as 'statutory homeless' are not 'core homeless' on our definition, because they have not yet left their previous accommodation or because they have been placed in temporary accommodation which is 'suitable', typically an existing self-contained social rented or private rental dwelling let on license. Conversely, a substantial share of people experiencing core homelessness are not in the statutory homelessness system and its associated data, because they have not applied to the local authority (particularly single people not treated as a priority in England or Wales) and/or because they would not be eligible for assistance (e.g. migrants with No Recourse to Public Funds).

4.2 Race, ethnicity and related indicators

There has been a degree of harmonisation in the ethnicity categories used in UK statistics, which has helped in getting this work started. However, most of the analyses presented here are based on broad classifications using, most typically, five categories

- White
- Black
- Asian
- Other
- Mixed (& 'multiple')

Sometimes the Mixed and Other are combined. Generally (though not universally) Chinese people are grouped with 'Other', whereas the Asian group may include South East Asian as well as South Asian origins. Some sources enable the Asian grouping to be divided, typically distinguishing Pakistani / Bangladeshi origins from Indian, while some distinguish sub-groups within the White including Irish, other EEA (new and/or old), and Gypsy Travellers. Sources providing a finer breakdown of 'Mixed' indicate that the most common situation is mixed Black and White ethnicity.

While there is interest in some of these sub-groups, many of the data sources which we are working with do not publish or release data at this level, whether or not collected, partly owing to small sample sizes in surveys, or very small numbers (raising disclosure issues) in data published at local level. We did not (in the early stage of this research) even have full ethnic minority population estimates for a large minority of local authorities for post-2011 period for this reason – we rectified this by imputing numbers, but later were able to substitute numbers derived from the 2021 Census.

Several of our sources also collect other information which may be related to ethnicity and have a significant bearing on the homelessness, housing and other experiences which people have. Examples include

- Country of birth (which may be grouped into broader regions, or simply into UK Born vs Migrant)
- Religion
- Language (including indicators of proficiency in English)
- Citizenship (including refugee/asylum status where applicable)

Analyses of differences between the circumstances of different ethnic minority groups still relies to a considerable degree on the Census of Population, which is still in UK only

conducted ten-yearly. While we now have results for 2021 for England and Wales (and later for Scotland in 2022), initially in this project we only had access to data from 2011, and some estimates for 2016. The importance of the Census stems from the fact that it is intended to provide 100% coverage of the population, in conjunction with the fact that some of the ethnic minorities of interest are quite small minorities.

The Labour Force Survey was also of value for revealing the migratory origins of the different BAME groups in 2020 (percent of adults).

- For the White group, 93% were born in the UK, 4.4% in the EU, and 1% in America and Old Commonwealth.
- For the Black group, 47% were born in UK, 37% in Sub-Saharan Africa, 7% in the Caribbean, 5% in Old EU and 2% in Middle East & North Africa.
- For the Asian Group, 47% were born in UK, 33% in South Asia, 12% in South East and East Asian and Pacific, and 4% in Sub-Saharan Africa
- For the Other group, 26% were born in UK, 23% in Middle East & N Africa, 10% in Latin America, 10% in Old EU, 8% in New EU, 7% in S E & E Asian & Pacific, 5% in Former USSR/S E Europe, 5% in South Asia and 4% in Sub Saharan Africa.
- For the Mixed group, 82% were born in UK, 4% each in Sub-Saharan Africa, Latin America and Old EU

The ethnic makeup of Scotland, reflecting a different history of migration, is different from England. The overall share of BAME in the total population is relatively small (c.4% vs 14% in England in 2011). There was no significant migration of Black Caribbean people to Scotland in the 1950s-70s, and the overall level of BAME migration in no parts of Scotland came close to that seen in London or the West Midlands. There is a significant South Asian settlement in Greater Glasgow with a rather thin scattering across the rest of the country, while Asylum/Refugee populations have also been particularly focused on Glasgow. Given its strong Higher Education sector, quite a significant part of the BAME population in Scotland derives from people coming to study and work in that sector, implying a relatively high educational and skill profile. Historically, the most significant migrations to Scotland have probably been from Ireland in the late 19th century and from new EEA countries in the period since 2004.

The ethnic population structure of Wales is not dissimilar to Scotland.

5. Disproportionate Experience of Homelessness

A range of key datasets demonstrate the disproportionate risk of various forms of homelessness faced by BAME groups in the UK. We look at each of our key categories in turn, drawing on relevant datasets.

A. Core homelessness

The Public Voice Panel Survey is a population panel set up by Kantar Public for diverse purposes, whereby specific suites of questions may be combined with a standard suite of socio-demographics. It's sample is designed to be well representative of the private household population of UK. We developed a specific set of 'housing experiences' questions focused on both the 'last 2 years' and 'ever', including detailed examples of unconventional accommodation types as well as the main core homelessness categories. We also asked

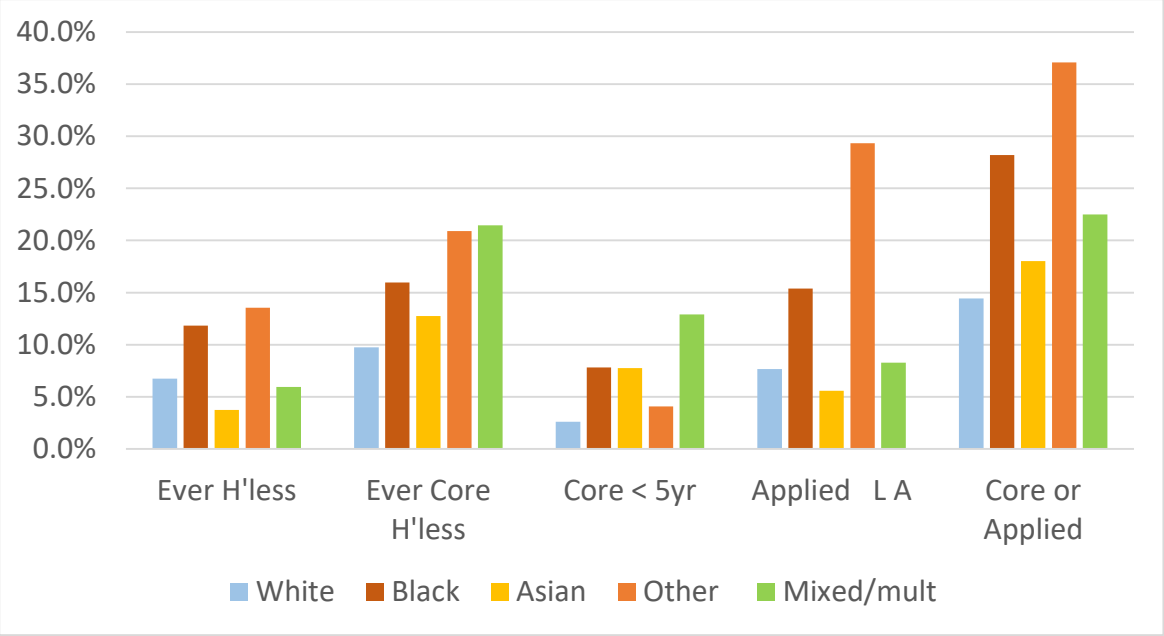
whether people had applied to the council for assistance because they had nowhere to live or were threatened with homelessness, and again found a high proportion of core homeless had not so applied at the time of the survey.

Table 2: Measures of subjective, core and statutory homelessness by broad ethnic groups in UK, percent of adults 2020 and risk ratios.

Ethnicity	Ever Homeless (subj)	Ever Core Homeless	Core Homeless last 5 yr	Applied Council	Core or Applied Council
White	6.8%	9.7%	2.6%	7.7%	14.4%
Black	11.8%	16.0%	7.8%	15.4%	28.2%
Asian excl Chinese	3.7%	12.7%	7.8%	5.6%	18.0%
Other single ethnic groups	13.5%	20.9%	4.1%	29.3%	37.1%
Mixed/multiple	6.0%	21.4%	12.9%	8.3%	22.5%
Risk ratios vs White					
Black	1.75	1.64	2.99	2.01	1.95
Asian excl Chinese	0.55	1.31	2.97	0.73	1.25
Other single ethnic groups	2.00	2.15	1.56	3.82	2.57
Mixed/multiple	0.88	2.20	4.95	1.08	1.56

Source::Author's analysis of Kantar Public Voice panel
Notes: Subjective homeless question was 'whether you had ever been homeless (that is, lost your home with no alternative accommodation)'. Core homelessness based on reporting any of each specific type of core homelessness. 'Applied council' based on two questions about applying to council because threatened with loss of home or actually homeless with nowhere else to live.

Figure 1: Selected retrospective measures of homelessness for UK by broad ethnic groups, percent of adults 2020



Source: As Table 2, Kantar Public Voice Survey of adults in private households across UK, 2020.

Table 2 and Figure 1 summarize the patterns of five measures of homelessness across the five broad ethnic categories mainly used in this report (the sample is not large enough to break these down further). We also show relative risk ratios compared with the White group. In most but not all cases the BAME groups show higher rates of homelessness experiences reported. Exceptions include Asian and Mixed on the first, subjective indicator, and the Asian group in respect of applying to the Council. The strongest differences, as indicated by the risk ratios, were for core homeless in the last 5 years in the cases of Black, Asian or Mixed groups, or applying to the Council in the case of the Other groups. However, not all of these differences are statistically significant.

Allowing for the complex sample, we can say the following differences are significant:

- Ever core homeless comparing all ethnic minorities with White
- Core homeless in last 5 years comparing all ethnic minorities with White
- Any core homelessness or council application comparing all ethnic minorities with White

B. *Statutory Homelessness*

England

The recent statutory homelessness data for England makes clear the disproportionate risk of statutory homelessness faced by BAME groups. Table 3a calculates a homelessness rate per 100 resident households in each region and ethnic group. The base numbers of households by ethnicity were an approximation, based on ONS published estimates for 2016. Table 3b expresses these as a 'risk ratio': how much more likely a household in a given ethnic group is to apply as homeless than a White British household in the same region. Table 3b contrasts London with rest of England and England as a whole, while Figure 2 uses three broad regions.

Table 3a: Homeless applications to Local Authorities by region and ethnicity, England 2020/21, as percentage of estimated number of households in relevant group/region

Region	Total	White British	All Other White	Mixed / Multiple ethnic groups	Asian / Asian British	Black / African / Caribbean / Black British	Other ethnic group
England	1.10%	0.89%	0.94%	1.96%	0.99%	3.17%	2.11%
London	1.38%	0.65%	0.75%	2.28%	1.03%	3.41%	2.19%
R o England	1.06%	0.91%	1.07%	1.82%	0.95%	2.87%	2.04%
North East	1.27%	1.17%	1.56%	1.60%	1.07%	2.94%	2.78%
North West	1.19%	1.04%	1.10%	1.69%	1.11%	3.19%	3.41%
Yorkshire and The Humber	1.12%	0.98%	1.16%	2.01%	1.25%	3.33%	2.66%
East Midlands	0.97%	0.83%	1.05%	2.50%	1.01%	2.98%	1.99%
West Midlands	0.98%	0.77%	1.14%	2.68%	0.78%	2.56%	1.77%
East of England	0.99%	0.82%	1.08%	1.33%	0.91%	2.39%	1.25%
London	1.34%	0.66%	0.76%	2.24%	1.05%	3.39%	2.19%

South East	0.95%	0.81%	0.92%	1.41%	0.86%	2.85%	1.36%
South West	1.13%	0.98%	1.10%	1.65%	0.75%	3.47%	1.54%

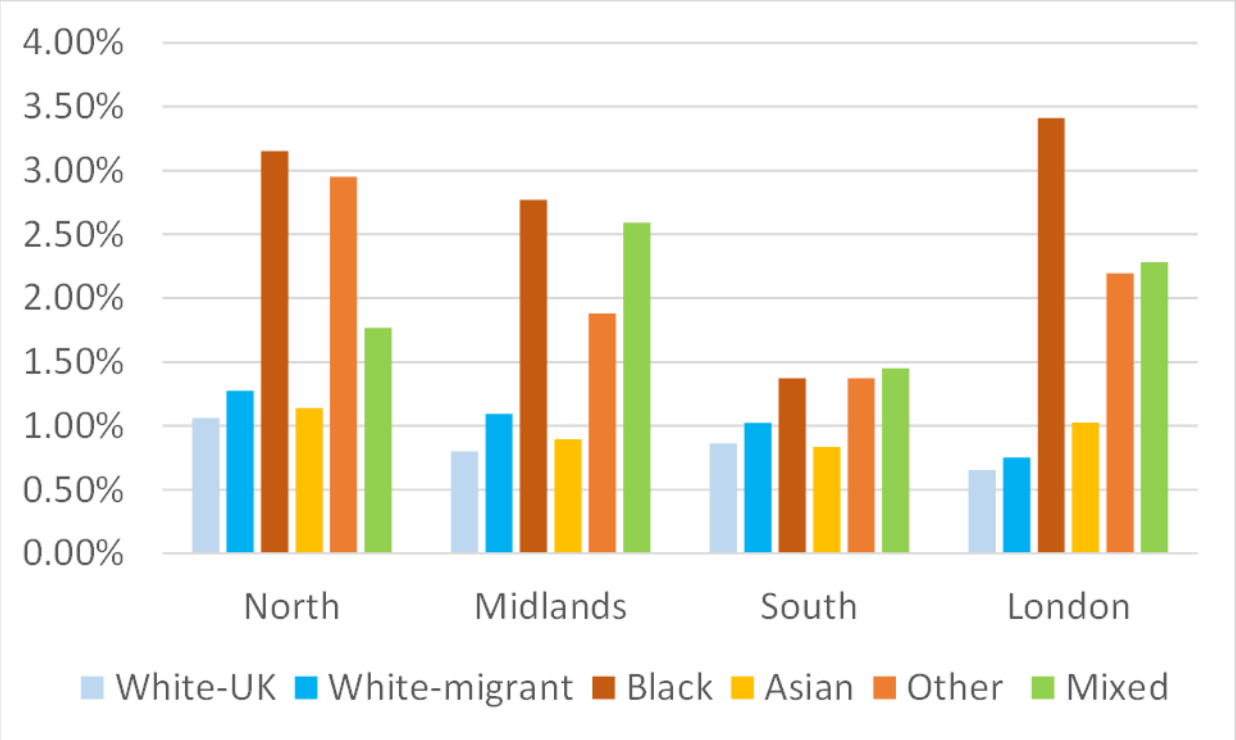
Source: DLUHC statutory homelessness returns from H-CLIC system, detailed local authority tables, 2020-21. Household denominators estimated by author from ONS population estimates by ethnicity for 2016 and survey based average household size by ethnicity data.

Table 3b: Risk ratios for homelessness application by broad region and ethnicity, compared with 'White British', England 2020/21 (based on Table 2a)

Region	All Other White	Mixed / Multiple ethnic groups	Asian / Asian British	Black / African / Caribbean / Black British	Other ethnic group
England	1.07	2.22	1.12	3.58	2.39
London	1.15	3.48	1.57	5.21	3.35
R o England	1.18	2.00	1.05	3.17	2.24

Source: As Table 3a.

Figure 2: Homeless application rates by broad region and Ethnicity, England 2020 (percent of estimated resident households by ethnicity)



Source: As Table 3a.

The tables and Figure 2 shows very much higher statutory homelessness rates for Black, Other and Mixed ethnic groups than for White British, with Asian households showing slightly higher than White British rates in Rest of England/England as whole but significantly higher rates in London, albeit well below those for the Black, Other and Mixed groups. The risk ratios of 5.2 in London and 3.2 elsewhere for Black households are especially striking, while those for Other and Mixed groups, especially in London (3.3-3.5), are also highly notable.

These differentials in risk ratios have been broadly stable over the three year life of the H-CLIC system. However, there was a noticeable fall in the risk ratios for Black and Other Ethnic Groups and a small fall for Asian, between 2019/20 and 2020/21, but the risk ratio for Mixed/multiple ethnicities group rose somewhat. Because of the substantial changes ushered in by the Homelessness Reduction Act from 2018, direct comparisons with earlier administrative data are difficult to interpret.

Scotland

Table 4 underlines the relatively small proportion of BAME groups in the Scottish population, with only the Asian group having a significant population share at 2.7%. Absolute numbers of BAME households applying to local authorities as homeless have not been very large, at 1,266 in 2011 (out of a total of 45,534), but they had risen noticeably, to 3,266 by 2019 (out of a smaller total of 36,855). This rise in the share of homeless has been noticeable in the Black and Mixed groups, and to some extent in the larger Asian group (where the relative risk is still well below the White or average figures), but the most spectacular rise has been in the 'other' ethnicity category. It is likely that this reflects a large and strongly growing share in asylum/refugee groups, particularly from the Middle East, although it might possibly be inflated by the way people respond to the wording of the ethnicity question in the Scottish survey.

Table 4: Shares of statutory homeless applicants in Scotland relative to shares of population, 2011 and 2019

Ethnic Groups	Share of total adult population 2011	Share of homeless applicants 2011	Share of homeless applicants 2019
White British	91.8%	91.3%	85.5%
White Other	4.2%	3.4%	5.2%
Black	0.7%	1.1%	1.7%
Asian	2.7%	1.4%	1.5%
Mixed	0.4%	0.2%	0.3%
Other	0.3%	2.6%	5.8%

Sources: *NRS Scotland's Census 2011, Table KS201SC; Scottish Government Homelessness in Scotland Equalities Breakdown: 2019 to 2020, Table 1. Note that no detailed population estimates by ethnicity are available in Scotland post-2011. Percentage shares of homeless households exclude those where ethnicity of applicant was refused or not stated.*

Wales

Table 5 presents a similar picture for Wales using the latest available data; again the shares of ethnic populations in Wales are relatively low. The relative risk of homelessness is markedly high for Black and especially for 'Other' ethnic groups, but this time slightly above average also for Asian and Mixed groups.

Table 5: Shares of statutory homeless applicants in Wales in 2021 relative to shares of population in 2016

	Population	Homeless	Relative Risk
Wales	2016	2021	2021
White	95.8%	88.0%	0.9
Black	0.7%	3.1%	4.6
Asian	2.0%	2.4%	1.2
Mixed	0.8%	1.4%	1.7
Other	0.7%	5.1%	6.9

Sources: Authors' estimates of 2016 ethnic populations based on ONS Research Report; Homeless applications from Stats Wales Homelessness Outcomes Table 2021-2.

Northern Ireland

Data on homelessness and ethnicity is especially sparse in Northern Ireland. However, it is possible to use some UK-wide datasets (for example, the Annual Population Survey and the UK Longitudinal Survey) to include Northern Ireland alongside analysis of the other UK jurisdictions. This data indicates that concealed and sharing households seem relatively prevalent for Mixed and Other ethnic groups in Northern Ireland.

C: Survey-based measures of homelessness risk

Other than the official statistics themselves, the *English Housing Survey* (EHS) is perhaps the most useful current source of data on statutory homelessness. It draws a new stratified random sample of c.13,000 each year so is not subject to attrition. In addition to a wide range of long-standing housing topics, additional questions on homelessness have been added in the 2-3 years up to 2019, so that it is now possible to identify eight distinct indicators of homelessness which can be individually tabulated by ethnicity.

Table 6 shows the eight individual indicators plus a summary 'any of the above' flag across four main ethnic groups (Mixed is here combined with 'Other'), giving the percentage of household incidence and the relative risk ratios. Whereas the first two indicators relate to forms of homelessness which affect households who may not be in touch with the statutory homelessness service, the remainder are all oriented to the statutory homeless system. In addition is should be noted that the Ever Homeless and Applied Homeless indicators are inexplicit about the period over which this occurred ('last few years').

Table 6: Homelessness Indicators in English Housing Survey 2016-18 by ethnicity, showing percentage of households and relative risk ratios.

Indicator	Rate % White	Black	Asian	Other	Risk Ratio vs White Black	Asian	Other
Sofa surf (usual resident)	0.2%	0.3%	1.3%	0.6%	1.35	5.54	2.29
Sofa surf (temp resid)	2.4%	4.4%	1.1%	2.2%	1.81	0.46	0.92
Ever homeless	2.5%	10.0%	2.8%	5.2%	4.05	1.14	2.12
Applied homeless	2.8%	20.9%	3.4%	9.9%	7.37	1.21	3.48
Previous in temporary accom	1.1%	1.7%	0.8%	1.9%	1.61	0.76	1.79
Currently in temporary accom	1.1%	4.5%	4.3%	2.9%	4.19	3.95	2.71
Offered temporary accom	0.3%	2.1%	0.5%	0.7%	7.07	1.84	2.53
Rehoused	0.2%	0.4%	0.3%	0.1%	2.15	1.40	0.61
Any of above	4.9%	14.0%	5.9%	8.3%	2.88	1.22	1.70

Note: the first sofa surfing indicator is defined for strict consistency with the core homelessness definition, whereas the second is somewhat broader. 'Ever homeless' is not based on same question as used in other surveys included in this review, as it is based on the question: 'In the last few years, have you ever contacted the council because you were homeless or about to be homeless'. 'Applied homeless' is based on the question 'Whether asked the council to consider respondent as homeless'

While the individual indicators range in incidence, among the White population, between 0.2% and 2.8%, the proportion reporting any of these amounts to 4.9% of all White-led households. In general, the incidence for the three main BAME groups listed tend to be higher than for the white group, that is much more clearly and consistently so for the Black group while applying more selectively to the Asian group, with the Other group situated somewhere in between. While the risk ratio for any of these instances of homelessness is 2.9 times higher for Black than for White, this ratio is 1.70 for the Other group and only 1.2 for the Asian group with the latter difference not being statistically significant.

For the Black group, there are particularly high-risk ratios for applying to the Council as homeless and for having 'ever' been homeless in that context, as well as being offered or currently staying in temporary accommodation. For this group the first sofa surfing category (as usually resident) is only moderately above the White rate.

For the Asian group, the forms of homelessness which are disproportionately reported are sofa surfing involving usually resident household members, currently staying in temporary accommodation and, to a lesser extent, being offered temporary accommodation or having been rehoused. The Asian group are only slightly above the White group on the ever homeless and applied as homeless categories, and below the White level on the temporary resident form of sofa surfing and on previously having been in temporary accommodation.

The 'Other' group tend to have a profile somewhat between those of the Black and Asian groups, but tending to be higher on previous temporary accommodation and lower on having been rehoused.

It is of interest to consider a slightly finer breakdown of ethnicity into eight categories, at least when considering the summary any homeless indicator. This shows rates significantly below those for the White group in the case of Indian households (RR=0.58), while the

Pakistani/Bangladeshi group show a risk ratio of 1.77 times White and the Other Asian 1.58 times, with the former difference being statistically significant. The Mixed group showing a ratio of 1.95 and the Other a similar 1.85 (both significant). All of these should be compared with the 2.88 ratio for Black households.

C) 'Hidden' homelessness: overcrowding, sharing and concealed households

UK

The *Labour Force Survey* (alias Annual Population Survey) is valuable as a continuously refreshed large scale sample survey of the adult population of UK . It provides useful measures of concealed households and sharing households. Concealed households are the broader group of which sofa surfers (who are core homeless) are a part[5]; and are also the group from which significant numbers of homeless applicants emerge. Sharing households display significant instability/insecurity, and often experience very poor conditions, and again homeless households often come from sharing situations.

Table 7 looks at values for these two indicators in 2020 by Ethnicity across the UK, expresses these as risk ratios relative to the White group rate, and also shows the change in the risk ratio for each group over the decade since 2010. For sharing the risk ratios look high for all BAME groups except Mixed, but particularly for Other, although for the Black group the difference from White is not statistically significant (for Mixed there are no observations of sharing in the sample). They also appear higher in all BAME cases for concealed, but this time the highest group is Asian, a significant difference which underlines the prevalence of extended family households in Asian groups. In fact the concealed rates for Black households are not statistically significantly different from the rate for White households, while the higher rate for Other is marginal in terms of significance. It should also be noted that these rates are much higher in London than in any other UK regions/countries, apart from an apparently high sharing rate in Northern Ireland

[5] We take those concealed households which are not non-dependent children of the parent household, i.e. unrelated singles and couple or lone parent groups, and apply additional filters (in other surveys like EHS, SHS or UKHLS) to select those indicating a wish or intention to move and who are overcrowded, and not all-student households.

Table 7: Sharing and Concealed Households, relative risk ratios vs White and change in Risk Ratios 2010-20, UK (% of households)

Ethnic Group	Any Sharing 2020	Fam or Unrel Concealed 2020	Risk Ratio Sharing 2020	Risk Ratio Concealed 2020	Risk Ratio Change Sharing 2010-20	Risk Ratio Change Concealed 2010-20
White	0.54%	5.87%	1.00	1.00		
Black	0.87%	6.77%	1.59	1.15	-1.88	-0.58
Asian	1.15%	12.65%	2.12	2.15	0.48	-0.81
Other	3.52%	8.28%	6.49	1.41	1.09	-1.47
Mixed	0.00%	11.14%	0.00	1.90	-2.66	-0.67
Total	0.61%	6.26%				

Source: Authors' analysis of Labour Force Surveys for 2020 and 2010. Note: concealed households here exclude nondependent children who are not part of a couple or lone parent family group.

The changes over the decade show a mixed picture for sharing, with falls for Black and Mixed but increases for Asian and Other. The picture for concealed households is more encouraging across the piece, with falls for all groups, particularly Other, although the level remains high for this group.

This survey permits a finer breakdown of the ethnic categories, and this reveals that for sharing there are exceptionally high rates for Bangladeshis with very low (zero recorded) for Pakistani and several other groups – but with a very low incidence, the sharing indicator may be less reliable now. For concealed households, the rates are high (2-3 times White) for all of Mixed, Indian, Pakistani, Bangladeshi, Chinese and Other Asian, but relatively lower (only 1.15 times White) for the Black group.

Crowding and underoccupancy in England and Wales

Table 8 looks at occupancy, contrasting underoccupancy with overcrowding as calculated in the *Census*. Overcrowding can reasonably be regarded as a risk factor for homelessness, as our definition of sofa surfing includes crowding as one of its criteria. It is also widely recognised as a characteristic of households presenting as homeless, where parents or others have asked them to leave, and also in some cases as a continuing problem when in temporary accommodation. The table shows that all of the BAME groups have much higher rates of overcrowding than the White group, with risk ratios over four times higher in three cases, including in this case the Asian as well as the Black and Other groups. While the risk ratios are somewhat lower in London, the actual rates are still higher in absolute terms, although the rate for the White group is also higher in London. It should be noted that the numbers are based on population, which gives much higher rates for overcrowding than when done in terms of households.

Table 8: Underoccupation and overcrowding by ethnicity in England and Wales and London, 2011 (number and percent of persons).

Census based occupancy standard 2011 England & Wales	Total Resid	White	Mixed	Asian	Black	Other
Underoccupying	29.1%	31.7%	14.6%	14.6%	9.9%	12.1%
Overcrowded	8.3%	5.7%	15.9%	25.8%	26.4%	24.3%
Rel Risk Ratio Crowd vs White			2.76	4.49	4.60	4.24
London						
Underoccupying	17.4%	22.5%	10.3%	11.4%	7.4%	8.9%
Overcrowded	19.2%	12.1%	23.7%	29.8%	31.9%	29.2%
Rel Risk Ratio Crowd vs White			1.96	2.47	2.65	2.42

Source: Author's analysis of Census of Population 2011, England and Wales
Note: The Census 'occupancy standard' measure counts the difference between number of bedrooms required, given household composition, and the number of bedrooms in the dwelling. This is similar to the 'bedroom standard' used in surveys such as the English Housing Survey. 'Underoccupying' implies two or more spare bedrooms, while 'overcrowded' means at least one less than required bedrooms.

Scotland

The Scottish Household Survey (SHS) is a survey with some similarities to EHS, although with less specialist housing content and more of a general local services focus. Table 9 presents four housing need problem indicators across the five broad BAME population groups, using data from pooling all SHS waves from 2012 to 2018. The concealed households shown in this table exclude non-dependent children of the parental household. The financial difficulties here are primarily related to basic housing costs and bills

Table 9: Housing need problems by BAME groups in Scotland, and associated risk ratios, 2012-18

Ethnicity	Concealed household	Overcrowd-Ing	Sofa Surfing	Financial/ debt	Risk Ratios Vs White Conceal-ed	Crowd-ed	Sofa Surfing	Finance / debt
White	4.8%	3.3%	0.20%	5.1%				
Black	10.6%	8.6%	0.33%	11.0%	2.21	2.64	1.65	2.15
Asian	17.1%	9.7%	0.40%	6.6%	3.56	3.00	2.03	1.30
Other	14.0%	8.5%	0.54%	6.5%	2.92	2.63	2.71	1.27
Mixed	8.9%	10.9%	0.52%	10.2%	1.86	3.34	2.61	2.00
Total	5.1%	3.5%	0.21%	5.2%				

Source: Author's analysis of Scottish Household Survey, 2012-18.
Note in this Table and in Table 10, the analysis is at household level but the ethnicity is recorded for randomly selected adult within the household.

For the first two categories of need and all BAME groups except Mixed, the risks of experiencing these are significantly higher than for White households. For concealed households the highest risk ratio is for Asian households, and the lowest is for Mixed (but still

approaching double). For crowding, all BAME groups are more than two-and-half times as likely than White households to experience this. For sofa surfing and financial difficulties, all BAME groups appear to have higher incidence than White, but the differences are not generally statistically significant, except in the case of financial difficulties and Black households.

D) Housing difficulties that increase homelessness risks

Scotland

Table 10 looks at another type of housing need/difficulty, namely having a relatively unaffordable level of housing costs, again using the SHS for Scotland. This is measured here by the ratio of housing costs (gross of any Housing Benefit) to income (gross), with two thresholds compared (30% and 50*%).*

Table 10: Housing affordability problems by BAME groups in Scotland, and associated risk ratios, 2012-18

Ethnicity	Gross afford'y Ratio	Afford'y >30%	Ratio >50%	Risk Ratio vs White >30%	>50%
White	19.3%	15.1%	6.1%		
Black	28.0%	24.9%	14.9%	1.65	2.45
Asian	26.1%	22.7%	9.6%	1.50	1.57
Other	30.6%	30.9%	18.1%	2.05	2.98
Mixed	25.2%	23.1%	8.1%	1.54	1.33
Total	19.6%	15.4%	6.3%		

Source: Author's analysis of Scottish Household Survey, 2012-18. 'Affordability ratio' is rent/mortgage cost divided by household income.

All BAME groups in Scotland face markedly higher risk of facing high/unaffordable housing costs, compared with the White group. At the more extreme level of 50%-plus, the Other Group are three times more likely than White to experience this, with Black 2.5 times , Asian 1.6 times and Mixed 1.3 times (this last difference is not statistically significant owing to small Mixed Ethnicity sample).

The UK Household Longitudinal survey also captures data on both overcrowded and concealed households. Table 11 shows that BAME-led households across the UK are almost five times more likely than White-UK-headed households to live in overcrowded accommodation, with Black-led households almost six times more likely, and Pakistani- and Bangladeshi-led households almost ten times more likely. While the risk ratios are not as extreme for concealed households, these still show Pakistani- and Bangladeshi-led households faring worst, albeit that in this instance Indian and Black-led households are not far behind. All groups (including non-UK-born White) are significantly more likely to be overcrowded than White-UK headed households.

Concealed households are a need category within which some people might be considered to be facing hidden homelessness. Here the differences shown in Table 11 are less striking but All BAME groups other than 'Mixed' are statistically significantly more likely to contain concealed household, with risk ratios of 1.7 for all BAME and Black and 2.3 for Pakistani and Bangladeshi.

Table 11: Indicators of hidden homelessness by ethnicity, showing relative risk ratios: UK households 2017-19, percent of heads of households.

Ethnic Categories (based on head of household)	Over- crowded	Concealed household
White British	2.5%	7.6%
White Other	4.1%	8.2%
Mixed	7.5%	8.2%
Black	14.1%	13.0%
Indian	7.6%	14.4%
Pakistani /Bangladeshi	23.6%	17.7%
Other	7.2%	11.3%
All BAME	11.8%	12.9%
Total	3.1%	7.9%
Risk ratios vs White British		
All BAME	4.8	1.7
Black	5.7	1.7
Pakistani/Bangladeshi	9.5	2.3

Source: Authors' analysis of UK Household Longitudinal Survey data, pooled for waves 9-11, using need categories as defined in Bramley (2021b); concealed households exclude non-family non-dependent children of main householder.

With regards to being ***'at risk of homelessness'*** in the near future through, for example, insecurity of tenure or financial difficulties, recent work by the Joseph Rowntree Foundation has highlighted indications of disproportionate risk affecting BAME groups (Rogaly *et al*, 2021). We can add to this evidence by again drawing on data from the UK Household Longitudinal Survey data, as summarised in Table 12. The indicators included here cover groups considered at risk of becoming homeless, particularly those experiencing affordability problems, but also a broader indicator of any housing need shortfall including with regard to housing condition or unsuitability. This shows that for the affordability indicators the risk of experiencing these issues is higher, often much higher, for most BAME groups (except Indian), with particularly high risks for Pakistani/Bangladeshi as well as Black-headed households (the values of the first affordability indicator for 'Other', Indian and White-Other groups are not significantly different from the White-UK values, while this is also the case for Mixed and Other groups with the second affordability indicator). For the broad 'any need' indicator, all BAME groups (including Indian) report markedly (and statistically significantly) higher incidence than White British (or White Other). Consistent with this, the analysis by Rogaly *et al* (2021) found that, on average, Black African renters spend 39% of their income on their rent, Black Caribbean renters 34% and Arab renters 46%. White British renters spend 30% of their income on rent on average. (pg. 3).

Table 12: Indicators of risk factors by ethnicity, showing relative risk ratios: UK households 2017-19, percent of heads of households.

Ethnic Categories	Affordability problem[6]	Private rented tenant with unaffordable rent[7]	Any housing need[8]
White British	2.1%	1.4%	11.3%
White Other	2.3%	2.3%	12.9%
Mixed	4.8%	0.9%	17.9%
Black	10.4%	2.4%	29.6%
Indian	1.8%	0.7%	20.0%
Pakistani /Bangladeshi	9.6%	2.6%	37.8%
Other	3.3%	1.6%	17.8%
All BAME	6.1%	1.6%	27.4%
Total	2.3%	1.4%	24.7%
Risk ratios vs White British			
All BAME	2.9	1.2	2.4
Black	4.9	1.8	2.6
Pakistani/Bangladeshi	4.5	1.9	3.4

Source: Authors' analysis of UK Household Longitudinal Survey data, pooled for waves 9-11, using need categories as defined in Bramley (2021b);

[6] 'Affordability problem' = households whose ratio of housing costs (rent/mortgage payment) to gross household income exceeds 25% or for whom residual net income less housing costs exceeds their housing benefit applicable amount by less than 20%, and who report any difficulty meeting housing payments or other related bills (e.g. Council Tax, utilities) in the last year.

[7] 'Private rented tenant with unaffordable rent' = private renting households not reporting difficulty whose ratio of housing costs (rent/mortgage payment) to gross household income exceeds 27.5% or whose net equivalised household income after housing costs (AHC) would fall short of 60% of the national median.

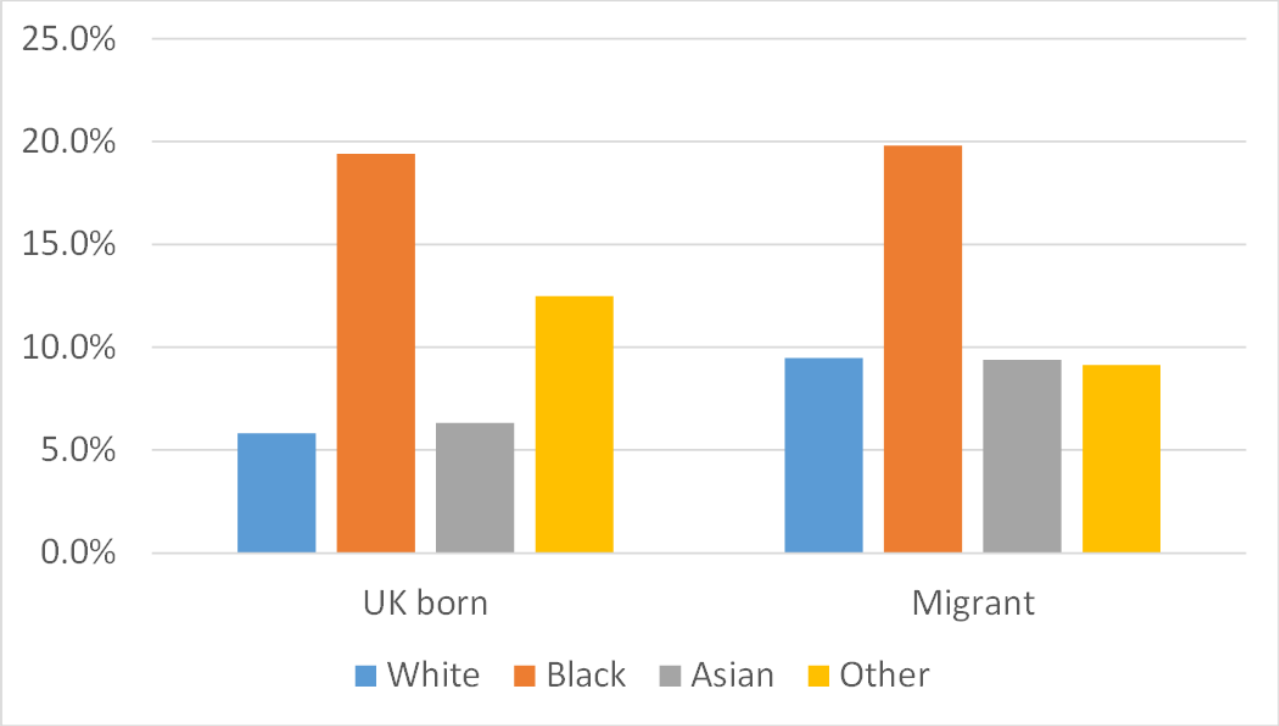
[8] 'Any housing need' = households experiencing any of following housing need problems: overcrowding (bedroom standard); concealed household wanting to move; affordability problem (as above); private renters in unsuitable housing for age or health condition who want to move; external condition problem and household wants to move.

E) Migrant experience vs ethnicity in homelessness risks

We showed earlier that high proportions of a number of BAME groups had migrated to Britain, based on country of birth data in the Labour Force Survey. Being a recent migrant can compound homelessness risks, whether through issues of citizenship, limited eligibility for publicly funded benefits or social housing, unfamiliarity with language and systems, or lack of support networks. While one might expect that recent migrancy would increase homelessness risk, the evidence on this is actually quite mixed.

Figure 3 shows the picture using the broad indicator of any recent homelessness in the English housing Survey. Black households in England appear equally highly likely to experience homelessness whether they are a migrant or UK born. However, for Asian respondents there is apparently a positive association with being a migrant, although this raises risks more or less in line with the rise for White migrants (vs White UK-born). For the Other/Mixed group, the relationship apparently goes the other way; for this group, UK born have relatively high homelessness experience, while migrant 'Other' have similar overall risk to migrant White and Asian. However, none of the differences between migrants and UK-born within the ethnic groups, other than White, are statistically significant. One might, tentatively, infer from this that, while there appears to be a general tendency for migrants to face higher homelessness risk (as expected), this seems to be overlaid by a strong tendency for UK-born Black and Mixed-Other groups to experience significantly heightened levels of homelessness risks, offsetting any migrancy effect for them.

Figure 3: Homelessness by ethnicity and migrant status, percent of households England 2016-18.

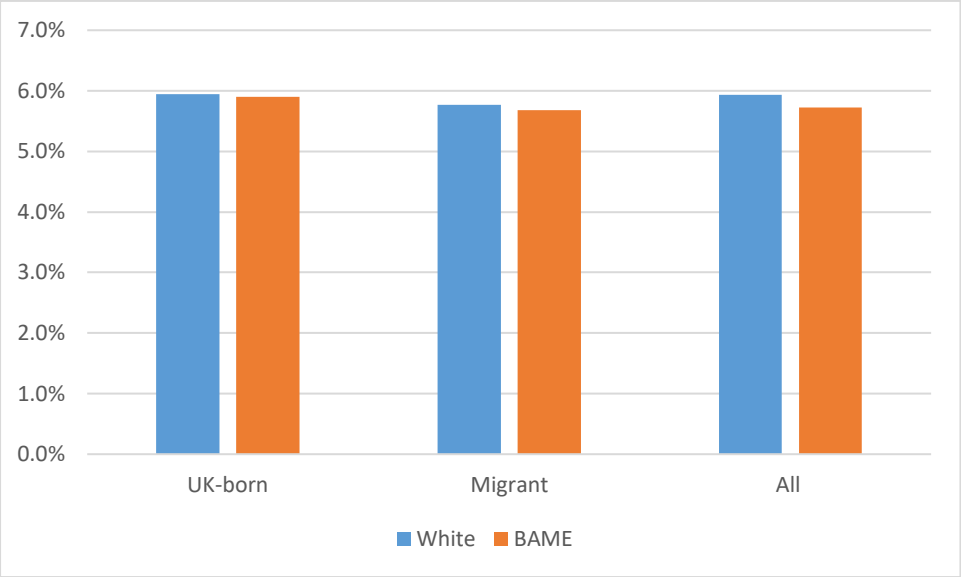


Source: English Housing Survey, 2016-18; any recent homelessness reported.

This is an example where the Scottish experience is significantly different again, reflecting the lower overall levels of migration to Scotland of BAME groups, and the differing character

of some of the recent migrant flows. Based on retrospective self-reported homelessness in the Scottish Household Survey in the years up to 2015, there was no significant difference between any of the four groups: UK-born White, UK-born BAME, Migrant White or Migrant BAME adults in Scotland (Figure 4).

Figure 4: Homelessness by ethnicity and migrant status, percent of households, Scotland 2012-15.



Source: Scottish Household Survey, retrospective homelessness experience questions.

Our comments on this would include the observation that New Commonwealth migration to Scotland was much less, in post-WW2 period, than in parts of England, with relatively few Afro Caribbean migrants settling in Scotland. The main group have been South Asian, particularly focused on Glasgow, and including significant proportions engaged in business and professions. Recent migrant flows have included asylum populations (particularly in Glasgow) and substantial White 'New EU' nationals, while significant parts of the BAME migration to Scotland actually relates to higher education including postgrad, postdoc and staff.

As Table 4 showed earlier, BAME populations in Scotland remain relatively small, with only the Asian group having a significant population share at 2.7%. However, increases in the share of BAME groups in statutory homelessness applications were noted in recent years up to 2019, particularly in the 'Other' ethnicity group, which is thought to reflect recent migration including asylum cases.

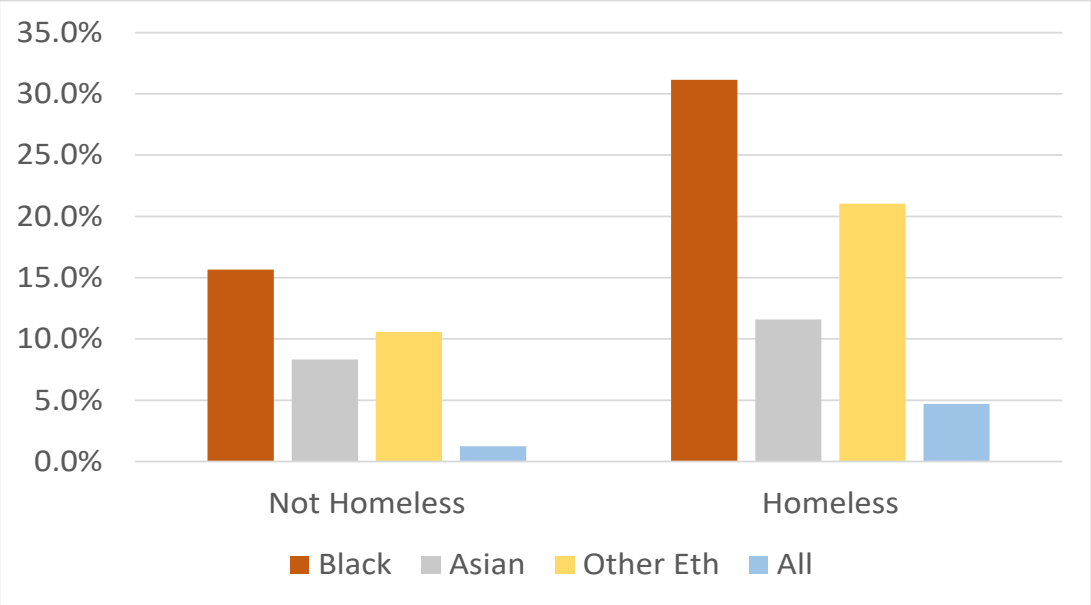
F) Indicators of discrimination and homelessness

Subjective indicators in English Housing Survey

In some recent waves of the English Housing Survey a pair of questions have been asked to capture the subjective expectation of encountering discrimination, either from a local authority or social landlord or from a private landlord. Rates at which BAME people report either or both of such expectations are shown in Figure 5, contrasting those who have

reported any recent homelessness experience with those who have not. Quite large proportions of Black (18%) respondents report such expectations, with the figure for Asian respondents being 9% and for 'Other' ethnicities 12%. It is clear from Figure 5 that these proportions are doubled in the case of Black-led households who report homelessness. There is a large apparent difference also for Other ethnic respondents who report homelessness, although sample numbers here are small, with the one-third apparent increase for homeless Asians not being statistically significant. Expectations are not the same as actual experiences, but may be shaped by own or others' experiences.

Figure 5: Subjective perception of discrimination



Source: English Housing Survey, 2016-18.

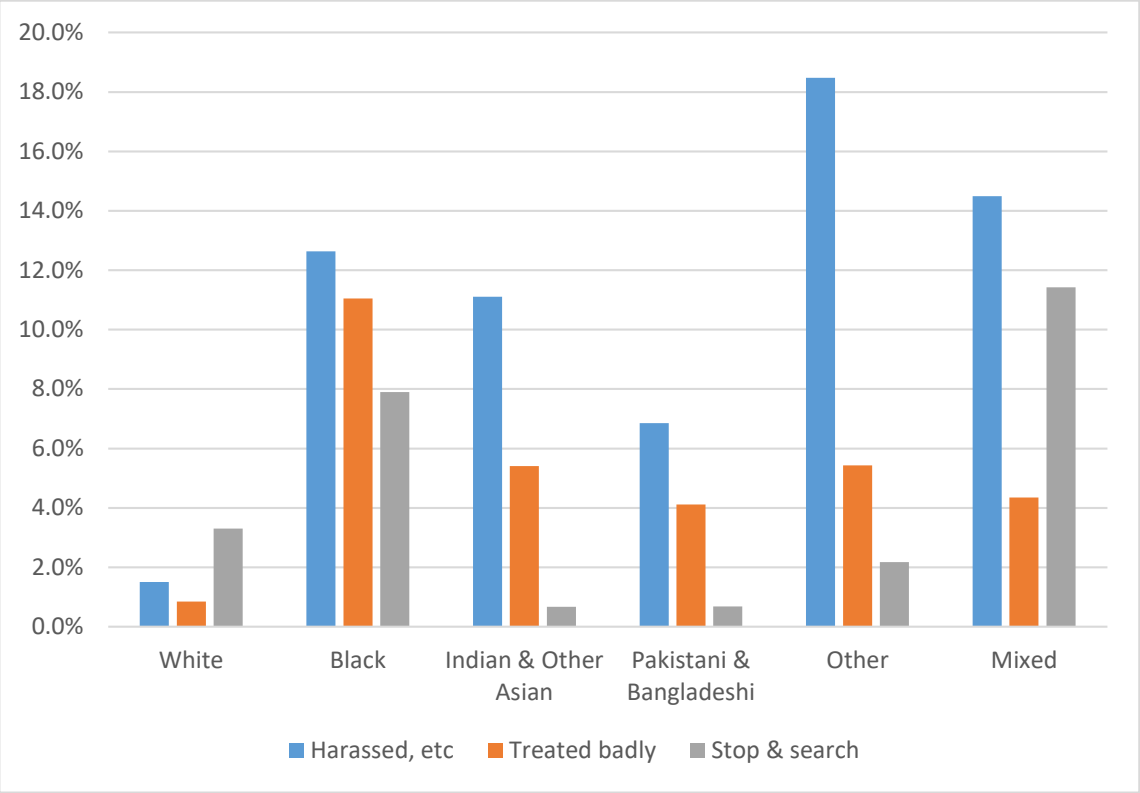
In the Poverty and Social Exclusion (PSE) survey 2012 reported later, we were able to identify certain potential indicators of harassment or bad treatment relating to ethnicity. These flag variables were:

- Being harassed, abused or made to feel uncomfortable in last year for reason of ethnicity
- Being treated less favourably by those in authority (e.g. including landlord) in last year, for reason of ethnicity
- Having experienced 'Stop and Search' by police in last year.

The first of these indicators was reported by 12% of Black 10% of Asian, 19% of Other and 15% of Mixed ethnic respondents. Rates for the second indicator were rather lower, as were Stop and Search, although this was still reported by 8% of Black and 11% of Mixed ethnicity respondents. The differences in harassment and being treated badly between the main BAME groups and the White group as shown in Figure 6 were all statistically significant allowing for complex sample design. For Stop and Search only the differences for the Black group were significantly different on that basis, although the Mixed group difference was on the margins of significance.

Our statistical modelling work reported on below indicates that both harassment, etc. and Stop and Search experiences were significant predictors of increased homelessness risks[9].

Figure 6: Experience of harassment, bad treatment or Stop and Search in last year by ethnicity, adults in UK 2012

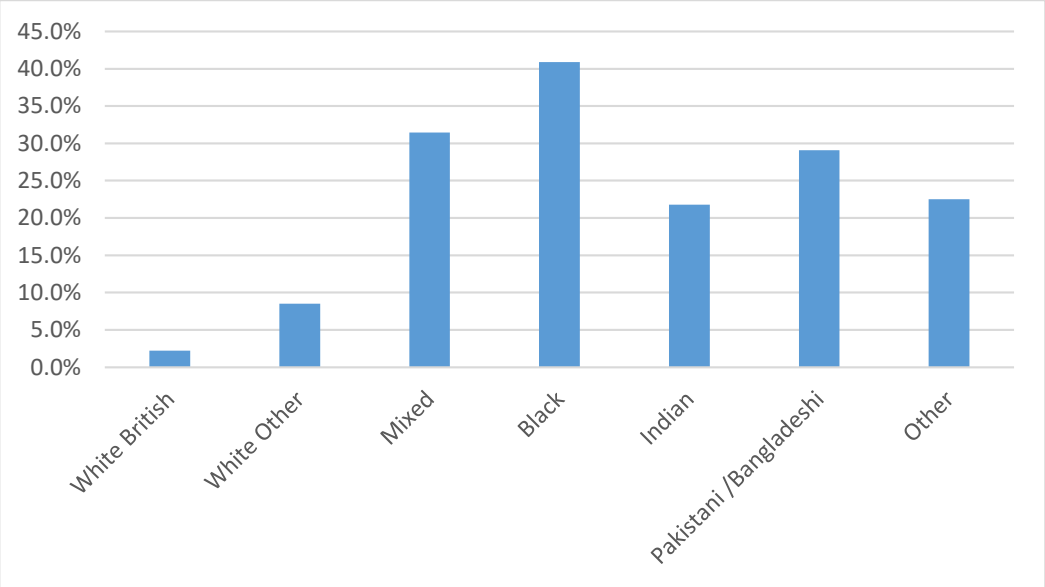


Source: UK Poverty and Social Exclusion Survey 2012

Further statistical weight is given to this potential link between discrimination and homelessness by our analysis of the most recent wave of the UK Household Longitudinal Survey. In this survey, respondents are asked whether they 'identify as a member of a group discriminated against in this country', including optional categories of colour or race, nationality, religion, language or ethnic group. As shown in Figure 7, those reporting any of these range from 2% of White British through 9% of White Other, 22% of Indian and of Other ethnicities, 29% of Pakistani/Bangladeshi, 31% of Mixed and 41% of Black ethnicity (all of these differences being statistically significant). Using a summary indicator from this source, our modelling analysis reported below indicates an (indirect) effect heightening the risk of homelessness.

[9] It should be acknowledged that causality might run in either direction in this case, given that these experiences were reported in the year before survey while homelessness experiences were as reported over a longer preceding period. For example, people who slept rough might be more likely to be harassed or subject to Stop and Search.

Figure 7: Experienced any group-based discrimination by ethnicity, adults in UK 2019-20



Source: UK Household Longitudinal Survey, Wave 11.

6. Exploring the Explanation of the Disproportionate Experience of Homelessness

At this point we are able to take a first step beyond the purely descriptive, to offer an attempt at statistically modelling the potential determinants of homelessness risk in various datasets. How homelessness is defined (ie the dependent variable) differs for each dataset

Public Voice Panel Survey (UK)

We can use the combination of socio-demographics, other experiences, and some limited geographical banded indicators, to fit predictive (logistic regression) models for core homelessness and/or applying to the Council. Other variables included in the better fitting models included 'migrated to UK in last 10 years', unemployed, aged under 45, retired (negative), low income (bottom 40%), financial/debt difficulties, destitution level (LA level, banded). Cases where ethnic indicators were significant in these models included:

- The combination of Black/Mixed/Other had a significant positive association with ever having been core homeless
- Any ethnic minority *or* Black/Mixed/other had significant association with reporting core homelessness in the last 5 years
- Any ethnic minority *or* Black/Mixed/other had significant association with applying to the Council

- Any ethnic minority *or* Black/Mixed/other had significant association with either applying to the Council or ever having been core homeless

In general, the Black/Mixed/Other group had a stronger and more significant association than Any Ethnic Minority.

While the general association of homelessness with indicators of poverty and younger ages is consistent with other analyses reported here and elsewhere, it is noteworthy that the indicator of having migrated to UK in the last 10 years is also positive and significant in many of these models, although in some cases it interacts with ethnic variables if included.

English Housing Survey

We report the analysis of the EHS in more detail as it is a good exemplar of an approach which we have developed to shed light on the main factors driving differential homelessness experience across ethnic groups.. The approach to developing and presenting this model follows Bramley & Fitzpatrick's (2017) *Housing Studies* article ('Homelessness in the UK: who is most at risk?). It uses an appropriate statistical technique (logistic regression) to establish a predictive model for the chosen homelessness indicator, in this case reporting any of the homelessness flags shown in Table 6 above. It groups the 25 explanatory variables into blocks representing five main types of influence on homelessness outcomes, namely

- Demographics
- Ethnicity, migrancy & discrimination
- Employment/labour market
- Housing system/market
- Poverty

We posit that there is some logic in using this sequential order when presenting the impact of groups of variables in this context. Demographic attributes are more basic in the sense that they are either fixed over a lifetime or fairly established by early adulthood, and also basic in the sense of determining the kind of housing needed. Ethnicity and migrancy are aspects of demography but we can also incorporate a subjective indicator of having experienced discrimination in relation to housing. Employment and occupational levels stem from earlier educational attainment and the process of entering adulthood and the labour market, and have a strong bearing on later ability to afford and sustain market housing. The housing system including local regional market conditions then come into play to generate tenure outcomes and experiences of insecurity. All of these factors come together, along with state welfare systems, to influence the experience and persistence of poverty, which we have shown in our past work to be often the most powerful predictor of homelessness.

The data are mainly micro household-level indicators, primarily yes/no flags (known as dummy variables) but including some continuous variables (mainly regional values for housing market indicators of house prices, rents, and lettings, as well as unemployment rates and small area deprivation levels). With the 'any homeless' flag as the dependent variable we use the standard technique of bivariate logistic regression to fit this model to the EHS data for the 2016-18 pooled data set (N=36,672). Having tested a broader set of approaching 40 variables we weed out those which are insignificant to arrive at a model with 25 variables retained, which has a reasonable fit to the data for this type of micro model (Nagelkerke R-square value of 0.205).

When fitting this model we included ethnic group flags where they were significant, grouping these within the demographic block of variables. In this case, only the Black group flag was a significant predictor, with the expected positive effect on any homelessness (odds ratio 1.36, signif p=0.001)[10]. Although this is saying that being Black increases your odds of experiencing homelessness by 36%, after allowing for the effect of the other 24 variables in the model, that is less than the crude risk ratio described above (2.88). That implies that quite a bit of the excess risk of Black households is attributable to other factors in the model. Similarly, the fact that the other Ethnic group flags are not significant in this model implies that the main explanation offered by the model is via other variables.

In our *Housing Studies* paper we used the blocks of variable technique to examine how much of the *variance* explained by the model was attributable to each block, given an assumed sequencing of blocks. In this application we are trying to show what predicted level of homelessness incidence would arise from the application of each block of variables in turn, for each of the ethnic groups. We also show to what extent, after applying all these blocks of predictors, the model predicted rate of homelessness corresponds to that actually observed, for each ethnic group. We do this by calculating predicted values using mean values of all of the predictors except the demographic, for which we use actual values (step 1); then substitute actual values for the employment variables (step 2); then substitute actual values for housing variables (step 3); and finally substitute actual values for the poverty variables (step 4). The results of this exercise are shown in Table 13 and graphically in Figure 8.

[10] The odds ratio is the most common way of reporting the sensitivity of a variable in a logistic regression. The 'odds' of a particular state or event is similar to a probability but is actually the ratio of the probability of being true (e.g. homeless) over the probability of not being true (e.g. not homeless) – like betting 'odds'. The odds ratio for a particular explanatory variable (say, being Black) in these models is the ratio of the odds of being homeless if you are black compared with the odds in a base case (say, White).

Table 13: Actual and predicted rates of 'any homelessness' adding blocks of variables sequentially, English Housing Survey household sample 2016-18, based on logistic regression model including 24 variables.

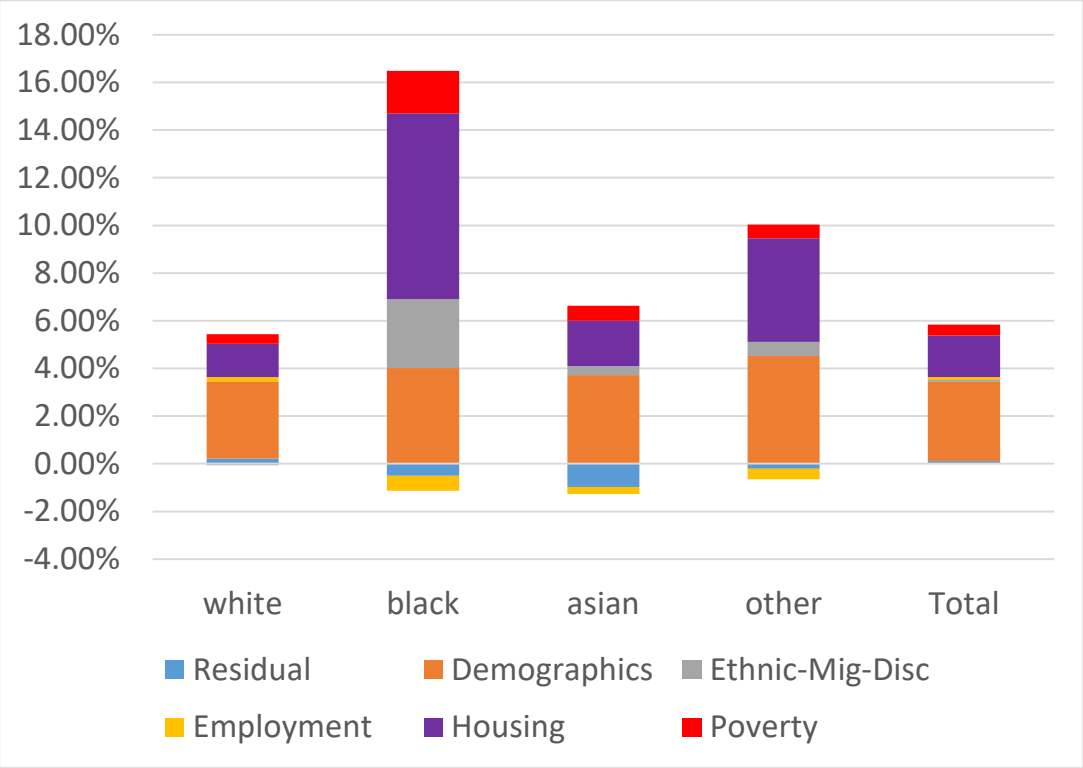
(a) predicted rates at each step

Ethnicity (4)	Any homeless (actual)	Step 1 Demog-raphics	Step 2 Eth/Mig/ Disc	Step 3 Employ't	Step 4 Housing	Step 5 Poverty	Residual
White	5.37%	3.23%	3.17%	3.35%	4.75%	5.16%	0.22%
Black	15.35%	4.01%	6.92%	6.28%	14.07%	15.85%	-0.50%
Asian	5.36%	3.72%	4.09%	3.80%	5.71%	6.34%	-0.98%
Other	9.38%	4.52%	5.11%	4.65%	9.01%	9.58%	-0.20%
All	5.84%	3.33%	3.41%	3.52%	5.26%	5.73%	0.11%

(b) Incremental effects

Ethnic Origin (4 Cats)	Actual	Step 1 Demog-raphics	Step 2 Eth/Mig/ Disc	Step 3 Employ't	Step 4 Housing	Step 5 Poverty	Residual
White	5.37%	3.23%	-0.07%	0.19%	1.40%	0.40%	0.22%
Black	15.35%	4.01%	2.90%	-0.63%	7.79%	1.78%	-0.50%
Asian	5.36%	3.72%	0.38%	-0.29%	1.91%	0.63%	-0.98%
Other	9.38%	4.52%	0.58%	-0.45%	4.35%	0.58%	-0.20%
All	5.84%	3.33%	0.08%	0.11%	1.74%	0.47%	0.11%

Figure 8: Incremental contribution of different groups of factors to generation of 'any homelessness' rate, based on English Housing Survey household sample 2016-18, based on logistic regression model.



Source: Table 13(b).

Focusing on the majority White group first, just applying demographic variables produces a relatively low predicted rate of homelessness, compared with the average and particularly the situation of the BAME groups. This reflects features of group demography reviewed earlier (White group has more retired, married couples and couple families). Adding the employment variables makes only a very marginal difference, but taking account of housing factors (which vary quite a lot regionally) raises the predicted rate by about a third. Adding the poverty variables beyond that raises it a bit more, by about a tenth, but still leaves the final predicted value below the average. It can be seen that the predicted value (4.94%) is quite close to the actual value (4.88%).

The Black group shown next in the table and figure is the most strongly contrasting story. In this case the demographic variables predict somewhat higher level of homelessness than in the White group case; this is expected because factors including age (younger) and household type (more singles, lone parents, multi adult) are more associated with homelessness. However, the Ethnic-Migrancy-Discrimination block imparts a significant upward push to the Black any homelessness score (+2.9% points). The next block of variables (employment related) actually appear to slight reduce the predicted homeless rate. However, the housing variables have a massive extra effect in pushing up homelessness; these factors include rental tenures, having been 'asked to leave' a tenancy, living in a flat, high house prices and rents exceeding LHSA. This group of factors has a larger positive impact (over 7.8% points) for Black households than for any other ethnic group or for any other block of variables. These factors are particularly concentrated in London, where there is also a concentration of Black households. The final block is poverty, and this also raises homelessness by Black households by a further 1.8% points. Again, the predicted value for Black households is relatively close to the actual level, and as already stated very much higher than any of the other Ethnic groups identified.

For the Asian group as a whole, the story is much less dramatic. Their demographics predict slightly higher than White or average homelessness, as does the ethnic/mig/disc block, while the employment variables do not change the position much. Housing factors increase predicted homelessness but by a moderate 1.9% points, with poverty making a modest addition of 0.6% points. Again the predicted rate is somewhat (1%) above the actual.

For the broad 'other' group, the story includes somewhat adverse demographics, significantly adverse housing factors, and a bit of an additional effect from poverty. The overall prediction is close to the actual.

However, the stories diverge somewhat when we disaggregate the Asian group into its three main sub-components, as in Table 13(c) below.. The Indian group starts with slightly more favourable demography, with again slightly favourable employment and only a limited increment for housing and very little for poverty, giving it the lowest predicted probability of homelessness of any of the 8 groups. However, the Indian group's actual score undershoots the predicted level by a significant margin, implying some additional factors which are favourable for this group beyond those captured by the variables included in the model. The Pakistani/Bangladeshi group start with a less favourable demography, not helped by employment, with increased risk stemming from housing (2.1% points) and poverty (+1.1% points). The Other Asian grouping seems to have slightly better employment effects but noticeably worse housing impacts than the previous group, with a similar increment from poverty. In this case the prediction is quite close to the actual.

The Chinese group have a less favourable demography and housing situation but do better on employment and less poverty, with an outturn actual homelessness rate which is well below predicted. As with the Indian group, there are some unaccounted for factors at work here in a favourable direction.

The Mixed group have a slightly adverse demography, quite significant housing adversities, and a moderate additional poverty effect, and their actual outturn somewhat exceeds their predicted rate, which is second only to the Black group.The Other ethnicity group has somewhat similar pattern to the Mixed group, ending up with rate just below the latter, mainly driven by adverse housing circumstances.

This analysis is still somewhat provisional and raises further questions. It can be refined, for example by including additional variables, by more careful designation of the dependent variable, and ideally more geographically disaggregated contextual variables (one senses that London is playing a significant part for several of these groups). This dataset is essentially 'flat', without a time dimension, which is clearly a limitation. We are, however, able to compare findings with several other similar cross sectional surveys, as well as with some longitudinal survey evidence, as reported below.

Table 13(c) Incremental effects on homelessness across additional sub-categories of ethnicity (England 2016-18)

Additional Sub-Categories	Actual	Demog-raphics	Eth/Mig/ Disc	Employ't	Housing	Poverty	Residual
Indian	2.96%	3.51%	0.35%	-0.44%	1.26%	0.07%	-1.79%
Pakistani or Bangladeshi	6.55%	3.91%	0.45%	-0.18%	2.05%	1.06%	-0.73%

Other Asian	8.76%	3.79%	0.28%	-0.15%	3.28%	1.03%	0.54%
Chinese	3.48%	4.86%	0.50%	-1.01%	2.82%	-0.35%	-3.35%
Mixed	10.97%	4.57%	0.65%	-0.09%	4.50%	0.97%	0.36%
Other	10.49%	4.32%	0.55%	-0.57%	4.91%	0.60%	0.68%
Total	5.84%	3.33%	0.08%	0.11%	1.74%	0.47%	0.11%

Source as Table 13 (a)-(b)

Poverty and Social Exclusion Survey (UK)

The UK Poverty and Social Exclusion Survey was carried out in 2012 as the central part of a major ESRC-funded research programme involving multiple universities and the National Centre for Social Research. The survey involved follow up interviews with households which had already participated in the 2011 Family Resources Survey, and attempts were made to interview all adult household members. Information was collected on a comprehensive range of measures of material deprivation as well as indicators of social exclusion across a dozen domains identified through earlier research. Within the housing domain information was collected on past experiences of homelessness, ever or in the last five years, distinguishing key categories of core homelessness as well as some aspects of wider homeless risk, together with other indicators of housing problems including with physical conditions as well as affordability and debt. All data from the FRS for the responding households was available in the dataset, with income information being updated from this base. The sample was boosted in Northern Ireland, Scotland (particularly rural parts), and areas with high levels of poverty and BAME populations, but with appropriate weightings was shown to be representative of UK (n=4119 households).

This dataset was used for the development of a model for 'ever experienced homelessness' comparable to those reported in this paper from the EHS and the SHS. It is worth noting that this question was only answered by those adults who completed the 'self completion' section which covered sensitive topics where respondents answered directly on the laptop rather than verbally to the interviewer. Although like EHS and SHS the PSE is basically a cross-sectional survey, it did ask some questions about past experiences of things which could impact on subsequent risks of homelessness, particular poverty but also some other factors like offending. Together with the availability of recent previous incomes, benefits etc. from FRS, this gave some elements of a longitudinal perspective. Also, when taken in conjunction with the wide range of information collected, particularly on health and life events, it was possible to include a block of variables capturing these and thereby picking up some of the support and complex needs often associated with homelessness.

Before reviewing the modelling results in terms of sequential blocks of factors impacting on different ethnic groups, we can review the basic bivariate descriptive patterns revealed for some key indicators of homelessness, as in Table 14. Four indicators are reported here: Ever homeless, homeless in last five years, ever homeless including experiencing rough sleeping, and wider homelessness in the last five years[11]. It can be seen that there is a broadly similar pattern across the first three indicators, whereby risks are substantially higher for Black and Mixed ethnicity groups, but lower for Asian and Other groups. The Mixed group are less

[11] Homelessness excluding rough sleeping or staying in emergency or temporary accommodation, but also including expecting to move because of unaffordability or eviction.

distinctly higher risk in the case of ever experiencing rough sleeping, while the Asian group have a higher risk of wider homelessness as defined here than the White Group.

Table 14: Key retrospective homelessness measures and risk ratios by ethnicity in the UK Poverty and Social Exclusion Survey 2012.

					Risk Ratios vs White			
Ethnicity	Ever Hless	Homeless last 5 yr	Ever Hless incl R S	Wider hless 5 yr	Ever Hless	Homeless last 5 yr	Ever Hless incl R S	Wider hless 5 yr
White	7.4%	1.8%	2.4%	1.0%	1.00	1.00	1.00	1.00
Black	13.3%	5.5%	5.5%	3.2%	1.80	3.13	2.25	3.14
Asian	3.1%	0.2%	1.2%	1.4%	0.42	0.12	0.50	1.40
Other	6.0%	1.0%	2.0%	1.0%	0.81	0.57	0.82	0.97
Mixed	10.1%	3.8%	2.5%	2.5%	1.36	2.17	1.04	2.48
Total	7.3%	1.8%	2.4%	1.1%	0.99	1.01	1.00	1.08
					0.00	0.00	0.00	0.00
Indian & Oth Asian	3.3%	0.3%	1.2%	1.5%	0.45	0.17	0.49	1.47
Pakistani & Bangladeshi	3.1%	0.0%	1.3%	1.2%	0.42	0.00	0.53	1.17

The lower part of the table looks at the Indian/Other Asian and Pakistani/Bangladeshi groups separately. However, it turns out that their risk ratios for these indicators are not very different.

The PSE sample design is relatively complex given the various boosts overlaid on the original FRS design. However, the disparities in homelessness experiences reported between different ethnic groups are so great that they are mainly statistically significant even allowing for complex sample statistical procedures. For example the confidence interval for Black ever homeless is above and non-overlapping with that for White, which itself is above and non-overlapping with that for Asian (see Figure 9 below). However, the confidence intervals for Other and Mixed groups are wider, with the former straddling Black, White and Asian and the latter straddling Black and White (but not Asian).

Figure 9: Ever homeless rates by main ethnic groups showing confidence intervals based on complex sample design, UK PSE Survey 2012.

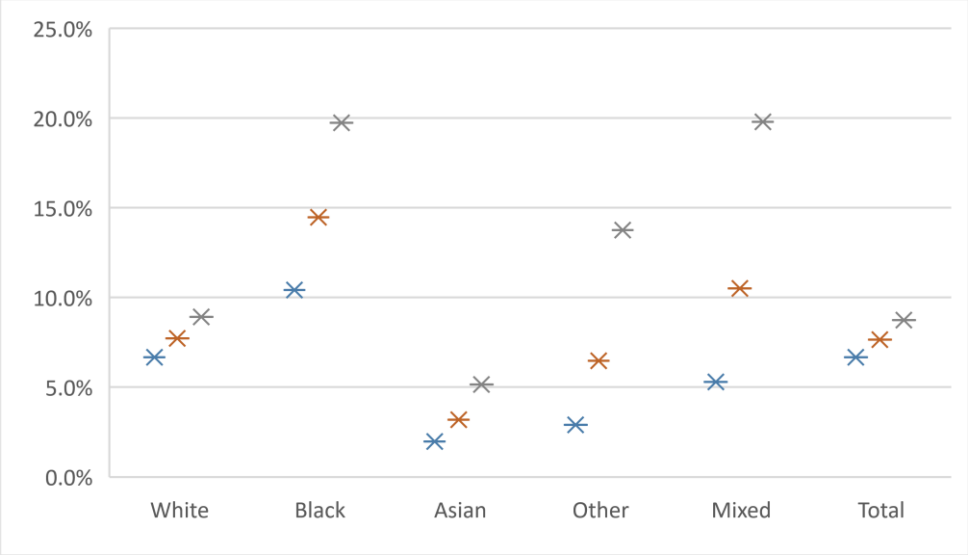


Table 15 looks at the results of the model to predict the odds of having ever been homeless presented in terms of the predicted outcomes when entering actual values for successive blocks of variables in place of average values. Unlike some analyses of other datasets, with PSE we have an extra block, labelled 'health and life events', which is inserted between demographics and employment/labour market. The first column shows the actual observed rate, which may be compared with the final predicted rate. This model is similar to that reported in Bramley & Fitzpatrick 2017, but including the explicit discrimination factors. Part (b) of the table shows the incremental contribution of each block of variables to the homelessness rate. Figure 10 shows these incremental contributions graphically.

Table 15: Actual and predicted rates of 'ever homeless' adding five blocks of variables sequentially, UK PSE survey 2012, based on logistic regression model including 17 variables (England and Scotland)
(a) homelessness rate at each stage

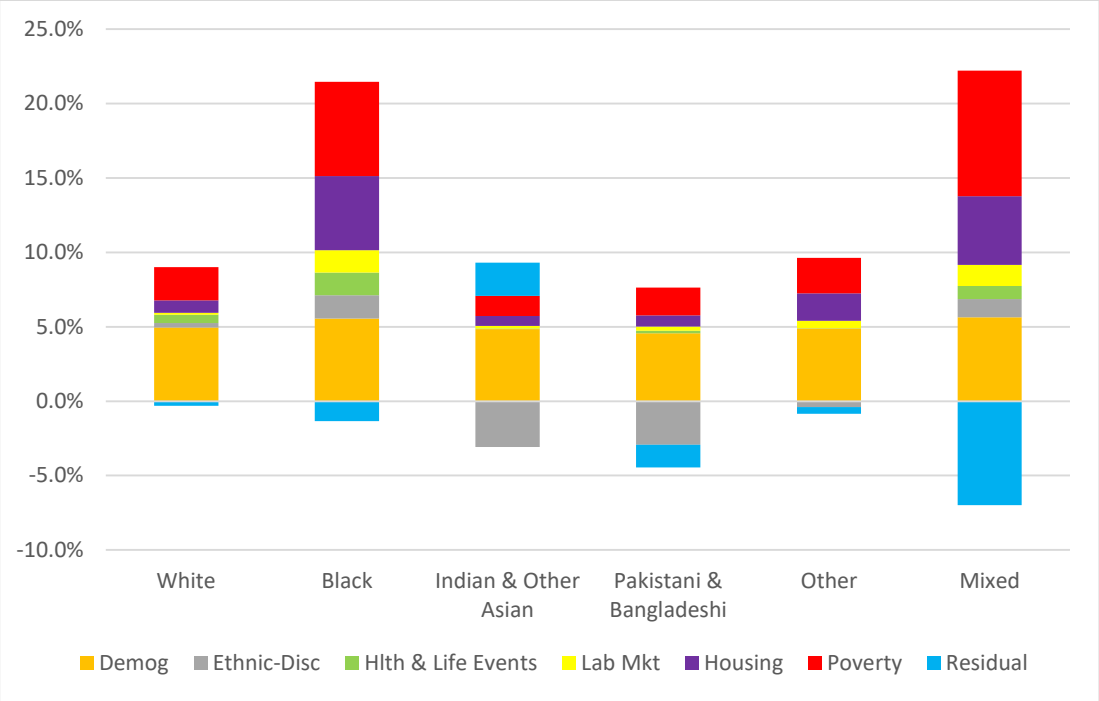
Ethnic Group	Ever Hless Actual	Demog	Ethnic-Disc	Hlth & Life Events	Lab Mkt	Housing	Poverty
White	8.7%	5.0%	5.2%	5.8%	5.9%	6.8%	9.0%
Black	20.1%	5.6%	7.1%	8.7%	10.1%	15.1%	21.5%
Indian & Other Asian	6.2%	4.8%	1.8%	1.8%	2.0%	2.6%	4.0%
Pakistani & Bangladeshi	3.2%	4.6%	1.6%	1.8%	2.1%	2.8%	4.7%
Other	8.8%	4.9%	4.5%	4.5%	5.0%	6.8%	9.2%
Mixed	15.2%	5.6%	6.9%	7.7%	9.2%	13.8%	22.2%
Total	9.0%	5.0%	5.1%	5.6%	5.9%	6.9%	9.4%

Source: authors' analysis of PSE UK 2012 survey data for England and Scotland, with some added locality variables, using model as reported in Bramley & Fitzpatrick (2017). The table shows the actual rate of homelessness and then the predicted rate at each stage when substituting actual values for mean values for each block of variables in turn .

(b) Incremental homelessness risk associated with blocks of variables

Ethnic Group	Demog	Ethnic-Disc	Hlth & Life Events	Lab Mkt	Housing	Poverty	Residual
White	5.0%	0.3%	0.6%	0.1%	0.8%	2.2%	-0.3%
Black	5.6%	1.6%	1.5%	1.5%	5.0%	6.3%	-1.3%
Indian & Other Asian	4.8%	-3.1%	0.0%	0.2%	0.7%	1.4%	2.2%
Pakistani & Bangladeshi	4.6%	-2.9%	0.2%	0.3%	0.7%	1.9%	-1.5%
Other	4.9%	-0.4%	0.0%	0.5%	1.8%	2.4%	-0.4%
Mixed	5.6%	1.2%	0.9%	1.4%	4.6%	8.4%	-7.0%
Total	5.0%	0.1%	0.6%	0.2%	1.1%	2.4%	-0.4%

Figure 10: Contribution of different blocks of variables to 'ever homeless' rate, England & Scotland 2012



Source: Table 15(b) above, based on PSE 2012 survey.

Incremental effects

For the White majority group, we find that employment does not make much difference, whilst both housing and poverty each add somewhat to the risks of homelessness. The only additional element, health and life events, slightly increases predicted homelessness for this group. The overall prediction is quite close to the actual.

The demographic variables in the model include ages, marital status, but these do not appear to make much difference between the ethnic groups. The one ethnic flag variable in the model, Asian, has a significant and substantial negative effect (OR=0.295, p=0.002), but this is included in the Ethnic-Disc block. Given the association of harassment and Stop and Search with the Black and Mixed groups, there is a contrast between higher impacts of this block for these groups and the lowering effect for Asian groups.

Health and life events do have some differential effects, raising risks for Black and Mixed groups (by 1.5% and 0.9% respectively). This time the employment/labour market block also significantly raises the risks for Black and Mixed groups particularly (by 1.5% and 1.4% pts). Housing has a large positive impact on the risks for Black and Mixed (+5.9% and +4.6% pts) and moderate impact on Other (+1.8%) and only a small impact on the Asian groups (+0.7%). Last but not least, poverty increases risks for all groups, but especially Black and Mixed (+6.3% and +8.4% pts), while only increasing risks moderately for Other (2.4% pts) and even less for Asian (1.4%-1.9%), which is slightly less than the impact on the White group (+2.2%).

For most groups the final predictions with all blocks included are generally quite close to the actual outturn, although for both Black and Mixed the predictions somewhat overshoot the (high) outcome values. In Table 15(b) and Figure 9 we disaggregate the Asian group into two

components, but there is not much difference in the predicted contributions of different blocks of variables. One feature of note is that whereas for Indian and Other the outturn is somewhat above the prediction, for Pakistani and Bangladeshi the outturn homelessness rate is very low, well below the relatively low predicted value. This is a different finding from the comparable model results using EHS reported above. Such differences suggest that there is not complete consistency between the positioning of groups revealed by these models, possibly due to the lapse of time (2012 vs 2016-18), differing geographical coverage, differences in the definition of the homelessness flag variable, and/or differences in the predictive models.

British Cohort Study (GB)

We now turn to a classic longitudinal study, the British Cohort Study which follows the representative group of people born in Britain in 1970. The main analysis here focuses on homelessness experiences up to the age of 30 in 2000: although we have examined data from the subsequent wave (c. 2013) this does not reveal much difference in relation to the patterns of homelessness. Therefore we stick to the dataset and model as reported in Bramley & Fitzpatrick (2017). A couple of key implications of this choice of dataset should be obvious but merit stating clearly. The BAME subjects of this study were second or subsequent generation descendants of earlier migrants, while the homelessness experiences modelled occurred in the period 1985-2000, 21-36 years ago. It is possible that there have been substantial changes since that time, for example in the extent or virulence of racism, prejudice and discrimination, whether in the private housing or labour markets, in local authorities administering homelessness legislation, or the everyday life on the streets.

Given the longitudinal structure where successive waves of data were collected for this cohort at roughly 5 year intervals, we have the opportunity to structure our blocks of variables differently from in the cross-sectional studies. In the event, we used a structure with six blocks, as follows

- Demographics (including ethnic indicators where significant)
- Childhood poverty (in rented housing, lack of consumer durables, income)
- Geography (rather lamely represented by dummies for regions or rurality)
- Teenage experiences, including significant adversities like care, school exclusion, drug use, not living with natural parents, trauma, or parental mental health problems
- Early adult economic challenges (age left full time education, unemployment, rented housing, living with parents)
- Adult family and life events (illness/disability, relationship, own children)

Table 16 presents the results of this exercise based on the final model used in the aforementioned published paper, with the above six blocks of variables, which can be clearly seen to be sequential in time. In the lower part of the table the incremental changes in predicted homeless risk associated with adding each block are shown.

Before discussing that, one key point to draw out is that in this dataset the relative risk of homelessness faced by this cohort of young second generation Black people in Britain was exceptionally high, with a risk ratio of 4.23 times the risk for White people in the same cohort. This is one of the highest disparities recorded in any of the analyses presented in this paper for a sizeable group. The risk ratios for Mixed were also quite high at 2.56, with 2.10 for the Other group. Again as in other analyses the Asian group showed lower risk that the White group. We did test whether Black should have been a predictor but this did not pass the test

of significance for inclusion (p=0.24). This goes with the fact that the sample number of Black respondents was on the low side (23 cases, compared with 38 Mixed and 56 Other). But this finding, and the large positive residual in the model for this group, suggests that this cohort of Black young people may have had a particularly hard time in that period 1985-2000.

Turning to the model findings in Table 16, it can be seen that for White cohort members the only block of factors which made a noticeable difference in increasing homelessness risk was early adult economic difficulties. However, for the Black group every block contributed to their adverse homelessness risk, although the largest contributions came from early adult economic difficulties and teenage experiences. Again, there are similarities with the Mixed group, and the pattern is indeed similar, apart from the much higher starting score from demography due to the inclusion of Mixed as a significant predictor in the model. It is only early adult economic difficulties that are much less of a problem for the Mixed than for the Black group. The Asian group show some increased risk resulting from childhood poverty , geography, and adult family and life events, but their teenage experiences had only marginal impact and in early adulthood their economic experiences were favourable in net terms. The Other group also start with a high demographic factor, which is somewhat enhanced by modest additional impacts from the teenage and early adult experiences.

Table 16: Actual and predicted rates of 'ever homeless' adding six blocks of variables sequentially, British Cohort Study 1970-2000, based on logistic regression model including 22 variables

(a) Predicted rates

Ethnicity	Actual	Demog	Childhood Poverty	Geography	Teenage Experiences	Early adult econ diffic's	Ad Family & Life Events	Residual Act-Pred
White	6.2%	5.1%	5.1%	5.2%	5.4%	6.0%	6.2%	0.0%
Black	26.1%	5.2%	5.8%	6.7%	8.7%	11.9%	13.4%	12.7%
Asian	4.8%	5.1%	5.3%	5.9%	6.1%	5.5%	6.7%	-1.9%
Other	13.0%	10.6%	10.8%	10.7%	11.4%	12.3%	13.1%	-0.2%
Mixed	15.8%	11.4%	12.0%	12.8%	14.3%	15.0%	16.5%	-0.7%
Total	6.3%	5.2%	5.2%	5.3%	5.5%	6.1%	6.3%	0.0%
Increments								
White	6.2%		0.0%	0.1%	0.2%	0.6%	0.1%	
Black	26.1%		0.7%	0.8%	2.0%	3.2%	1.5%	
Asian	4.8%		0.3%	0.6%	0.2%	-0.6%	1.2%	
Other	13.0%		0.2%	-0.1%	0.7%	0.9%	0.8%	
Mixed	15.8%		0.6%	0.8%	1.5%	0.7%	1.5%	
Total	6.3%		0.0%	0.1%	0.2%	0.6%	0.2%	

Source: Authors' analysis of British Cohort Study (1970 birth cohort) data up to 2013, based on model developed in Bramley & Fitzpatrick (2017).

Scottish Household Survey

Moving on to modelling and quantifying the impact of different types of factors on homelessness outcomes in Scotland, we are able to perform an analysis similar to that performed on the EHS for England and reported in Table 13 above. The dependent variable is a more straightforward and open question about whether the adult respondent had ever experienced homelessness – 'Have you ever been homeless, that is, lost your home with no alternative accommodation to go to?'. In Scotland in the period 2012-15, 6.4% of adults responded positively to this question (N=41,678). The model used was again a logistic regression with 22 significant explanatory variables included, of which 13 are binary, two were continuous household level, and seven were area-based (mainly LA level) continuous variables. These variables can again be divided into the same four groups whose effects can be considered sequentially. The approach here closely follows the Bramley and Fitzpatrick (2017) paper but using updated data, and the results presented in Table 17 may be compared with those in Table 13 above.

Table 17: Actual and predicted rates of 'ever homeless' adding blocks of variables sequentially, Scottish Household Survey random adult sample 2012-15, based on logistic regression model including 22 variables
(a) Predicted rates

Ethnicity	Actual	Demog	Lab Mkt	Hsg Mkt	Poverty
White	6.43%	2.62%	2.82%	3.47%	5.81%
Black	10.30%	3.77%	3.82%	5.57%	9.66%
Asian	3.31%	3.27%	2.96%	3.13%	4.27%
Other	7.53%	3.31%	3.37%	4.44%	7.80%
Mixed	12.20%	3.26%	3.14%	3.47%	6.00%
Total	6.41%	2.64%	2.83%	3.49%	5.81%

Note: The regression model here is closely equivalent to that reported in Bramley & Fitzpatrick (2017) but applied to more recent data

(b) Incremental effects from Table 17 (a)

Ethnicity	Actual	Pred Demog	Pred & Lab Mkt	Pred & Hsg Mkt	Pred & Poverty	Resid Act-pred
White	6.43%	2.62%	0.20%	0.65%	2.34%	0.62%
Black	10.30%	3.77%	0.05%	1.75%	4.09%	0.64%
Asian	3.31%	3.27%	-0.31%	0.17%	1.14%	-0.96%
Other	7.53%	3.31%	0.06%	1.07%	3.36%	-0.27%
Mixed	12.20%	3.26%	-0.12%	0.33%	2.53%	6.20%
Total	6.41%	2.64%	0.19%	0.66%	2.32%	0.60%

Source: Authors' analysis of Scottish Household Survey 2012-15.

In this instance, none of the individual ethnicity flag variables were significant, so the demographic component only reflects factors of age, household type and size, and the presence of disability. To an even more marked extent than in the EHS analysis, just predicting on the basis of demographics, with all the other variables set at mean values, gives a generally low predicted level of homelessness incidence, well below the actual in all cases except the Asian group, where it is close. As in the English models, the employment/labour market factors do not appear to have very marked effects in differentiating the groups or deviating from the demographic predictions. The housing market/system factors again play a significant role, but this time it is poverty which seems to have the biggest impact in pushing up homelessness, both for the majority White group and for most of the BAME groups, although to the least extent for the Asian group.

For the White group, housing factors push risks up slightly, but poverty has a more marked effect (+2.3% points), while the actual outcome is somewhat higher than the prediction. For the Black group, demography is again something of a positive factor, then a sizeable effect (1.8% pt) from employment and then a major increase from poverty (4.1% points). Even after all of these effects the outturn for Black adults in Scotland was slightly worse than predicted.

For the Asian group, demography is middle of the road, employment is favourable, housing gives only a slight worsening and poverty adds a relatively modest 1.1% pt. Yet the outturn is 1% point lower than the predicted incidence, which is not much more than half of the national average. So the Asian group in Scotland looks more like the Indian group in England in terms of homelessness risk.

The 'Other' group in Scotland does somewhat worse than the Asian group on demography, employment and housing (1% pt worse), but a lot worse on poverty (+3.4% pt). This group probably includes quite a few of the asylum/refugee cohort. The mixed group presents a somewhat contradictory story, with relatively favourable demographic, employment and housing influences, somewhat adverse poverty (+2.5% pt), but an outturn actual homeless risk higher than any other group and double the model predicted value (12.2% vs 6.0%). It is not clear why this should be the case but this is a small sample which appears relatively untypical, compared with its English equivalent.

7. Exploring Local Level and Multi-level Models

The foregoing analysis has essentially been conducted at the micro level of individual households or adults, using data derived from surveys of various kinds, mainly cross-sectional and interview-based, but in some cases following individuals over time. We have not exhausted this approach and we anticipated being able to access individual-level data from the Statutory Homelessness system in England (H-CLIC) in due course for such analyses[12]. However, there is another level of analysis, using data and indicators at the intermediate aggregated level of local authorities. This is facilitated by the fact that virtually all of the data collected by the H-CLIC system is published as counts or percentages at the level of the c.315 local authorities across England on an annual (and in some cases quarterly) basis. In addition, a wide range of data covering the demographic, social, economic, housing and environmental conditions are also routinely published or obtainable for the same set of local authorities, mostly on an annual basis. We have extensive experience of utilising these data to calibrate and apply models to predict a wide range of relevant variables, particularly in the context of a 'sub-regional housing market model ' (SRHMM) which we routinely use to generate forecasts of core and statutory homelessness, subject to different policy assumptions[13].

Existing model findings

Of particular interest here are regression models used to predict the relative intensity of homelessness represented by the rate of applications (per 100 resident households) across local authorities and over time. We routinely test to see whether different socio-demographic

[12] We were subsequently able to access a large scale download of H-CLIC data from DLUHC through the ONS Secure Research Service (SRS), to facilitate both flexible cross-tabulations of homelessness statuses, backgrounds and demographics, including ethnicity, and also multi-variate modelling of selected outcomes or statuses within that data, as described in later chapters.

[13] The projections of core homelessness are routinely published in the Crisis 'Homelessness Monitor' series, most recently for England in November 2025 (Watts et al 2025); Fuller details of these models are given in the 2021 technical report (Bramley 2021a).as well a Appendix 3 of the 2022 Monitor. The latest iterations of these models are described in Bramley (2025) *Homelessness Monitor Research Programme: Technical Report on Core Homelessness Baseline Estimates and Scenario Projections for England, 2025.* Edinburgh: Heriot-Watt University.

indicators, including ethnicity, appear to make a statistically significant contribution to explaining rates of homeless applications, temporary accommodation, rough sleeping/no fixed abode indicator, and homelessness due to loss of private tenancy. Referring to recently updated and recalibrated models in this suite, we can draw attention to the following specific findings regarding ethnicity and/or migrant experience.

- The proportion of Black ethnicity in the local population had a significant and quite strong positive effect on the rate of homeless applications over the period 2014-20 (standardised regression coefficient 'beta' value[14] of 0.173, t=8.9, p<0.000, N=2136 obs). However, in the more recent 2014-23 analysis, the Black ethnicity variable ceased to be significant.
- Ethnicity indicators per se were not significant in the H-CLIC based model for the rough sleeping indicator (including share of no fixed abode), 2018-20 (and again as updated to 2023), although the 'born overseas' indicator was positive and on margins of significance (in the earlier model);
- The proportion of black ethnicity in the local population had a significant and quite strong positive effect in the model for households applying as homeless because of loss of a private tenancy over period 2014-20 (beta =0.169, t=8.70, signif p<0.000, N=2214); when the model was extended to 2023, the black ethnicity variable was still included in the model but with a weaker effect (beta=0.033, t=1.80, p=0.073).

These models take account of the influence of other variables including poverty, unemployment, welfare benefit related indicators, Local Housing Allowance shortfalls, local housing tenure mix and social lettings supply, broader socio-economic factors, and some local policy factors (e.g. emphasis on prevention). Refinement of these models over time may have had an effect on the significance of the ethnicity variables, as other better measures of socio-economic disadvantage have been included.

It is noteworthy that indicators of Asian ethnicity were not significant in this context. 'Mixed' and 'other' ethnicities were also not significant in these tests, but it is possible that they may be partly indirectly captured through being associated with the Black indicator (collinearity of such variables tends to be more of an issue in aggregated locality or regional models such as this, which means that not all variables in an associated group will show as significant).

A limitation of the above models is that the ethnicity variables are essentially cross-sectional, as well as somewhat out of date (in the earlier tests), being based on the 2011 Census of Population. A further point is that these analyses predated our ability to use in modelling of the fact that H-CLIC provides a picture of homelessness disaggregated by ethnicity at local authority level, as reflected in work reported in the next sub-section.

New ethnic-specific local authority level analyses.

Therefore, we initially sought to overcome these limitations, by constructing indicators at local authority level of homeless of application rates by ethnicity based on estimates of the ethnic population in each local authority in each year up to 2020. The latter estimates were only approximate, because ONS had only published local estimates of population by ethnicity for one point of time since 2011, namely 2016, and in rounded form, with many specific entries

[14] Standardised regression coefficient 'beta' measures the change in the dependent variable, homeless application rate, in standard deviation units for one standard deviation increase in the explanatory variable, in this case the percentage of black population locally.

suppressed due to small numbers and disclosure issues. We went through a specific exercise to fill all the holes in the ONS data using reasonable proxies (for example, county level figures for smaller shire districts, other nearby districts which are similar in terms of known general characteristics and overall while/nonwhile split). The new 2016 values derived for percentage of population in each broad ethnic group were then compared with the 2011 Census values, and values for intervening or following years up to 2020 were infilled by simple extrapolation (i.e. assuming smooth gradual change).

Having gone through this process, we took the view that it would be prudent to exclude some authorities from the analysis for some ethnic groups (particularly Black and Mixed/Other) because the estimated share was below a threshold level and this would impart too much noise to the estimates of rates. Effectively this excluded 30% of the (size-weighted) cases from the analysis of Black homelessness rates, 6% of the cases from the Asian analysis, and 37% of the Mixed/Other analysis. It should be emphasized that all London boroughs and met districts and nearly all Unitary authorities were included.

We present below some simple descriptive analyses, some ethnic-specific models to predict homeless application rates, and some descriptive profiles of the predicted values from those models compared with the actual observed values. Table 18 shows the risk ratios for homeless application rates by broad ethnic group as a multiple of the rate for White households, across different regions, types of locality and year. However, we would significantly caveat these findings in view of the limitations of the underlying pre-Census 2021 data on local ethnic populations, and we go on below to undertake more refined analyses using both micro HCLIC outcomes cohort data and the full range of 2021 Census locality data.

Table 18: Risk ratios for homeless application rates by households from three broad ethnic groups relative to White households, England 2018-20

Broad Region	Black	Asian	Mixed/other
North	2.75	0.89	2.51
Midlands	2.69	0.60	3.14
South	2.73	0.68	1.75
London	4.87	1.23	2.80
England	3.04	0.81	2.38

Region	Black	Asian	Mixed/other
North East	1.12	0.80	3.12
Yorks & Humber	3.49	1.00	2.39
North West	2.15	0.81	2.54
East Midlands	2.35	0.66	3.26
West Midlands	3.15	0.73	3.77
South West	2.43	0.60	1.73
East England	2.20	0.71	1.97
South East	2.92	0.82	1.94
London	4.91	1.30	3.09
England	2.95	0.84	2.54

Local Authority Type (ONS)	Black	Asian	Mixed/other
Business and Education Centres	2.88	0.82	2.84
Coastal Resorts and Services	1.25	0.58	1.49
Growth Areas and Cities	3.85	0.96	2.60
Heritage Centres	2.00	0.47	1.82
London Cosmop Central	5.18	1.96	3.73
London Cosmop Suburbia	5.07	1.02	3.63
Manufacturing Traits	2.14	0.84	3.07
Mining Heritage	1.92	0.79	2.09
Multicultural Suburbs	4.20	1.04	2.31
Prosperous England	3.16	0.85	2.05
Rural Coastal and Amenity	0.45.	0.40	1.51
Rural England	0.88	0.57	1.87

Rural Hinterland	1.26	0.42	1.12
Total	2.96	0.84	2.54

Year	Black	Asian	Mixed/other
2018	3.05	0.80	2.38
2019	3.10	0.88	2.61
2020	2.72	0.83	2.63
Ave	2.96	0.84	2.54

Note: Pink shading indicates risks ratios which are markedly higher than average, and brown showing somewhat higher ratios, while green shading indicates markedly lower risk ratios.

Overall, and consistent with findings shown earlier in Table 3b, the risk ratios for Black and Mixed/Other ethnic groups are relatively high, around 3.00 and 2.5 times the risks for White households. However, for Asian households at national level the risk ratios are generally below 1.00. It is clear that in London the risk ratios are markedly higher for each of the main groups, with Black strikingly high at around 4.9 times the White rate, while the Asian rate is at about 1.3 times and the Mixed/Other at around 2.8. Other regions which show higher than average risk ratios for Black households are Yorks & Humber and West Midlands, while for Mixed/Other it is Midlands and North East which are relatively high.

Using the ONS typology of Local Authorities at Group level, there are wide variations, with a concentration of very high values (over five times the White rate) for Black households in the two London Cosmopolitan groupings and 4.2 times in the Multicultural Surburbs grouping. By contrast, these risk ratios for Black (vs White) homelessness are as low as 0.88 to 1.26 in Coastal Resorts and Services and in Rural England and Rural Hinterland. It is likely that Black populations are relatively small, and perhaps untypical, in the latter area types, whereas in the coastal resorts there is perhaps a higher concentration of poorer white residents with poor health or complex needs. The Asian group also shows a higher risk ratio in London Cosmopolitan Central and a similarly lower rate in the coastal resorts and rural areas. Some similar variations can be seen with the Mixed/Other group, with more emphasis perhaps on the higher risks in the Business and Education Centres (large provincial core cities), manufacturing towns and Growth Areas and Cities (e.g. former new towns), which also have quite high risk ratios for Black households.

The figures for the three individual years do not show any clear trends over this recent short period.

. ***New Multi-Level Ethnic Specific Models of Homelessness Risk***

In this section we discuss an approach to modelling the risk of homelessness separately for each main ethnic minority group, using a combination of some information in the HCLIC micro cohort dataset and (primarily) attached measures of the characteristics of populations and housing markets in the locality where they are located. This is a development of an approach tested earlier, with updated ethnic base populations and some new ethnic-specific demographic predictors and interaction terms. It may be characterized as a form of multi-level modelling (MLM) given the explicit emphasis on both micro individual household level factors, locality-level factors, and interactions between the two. It also may be compared with the local authority level short panel models used to predict homeless applications and

temporary accommodation numbers in the homeless projections part of the regular Homelessness Monitor series, as discussed in the previous section. These analyses were conducted in the ONS Secure Research Service (SRS) at a later stage in the research programme and made full use of extensive local authority-level data from the 2021 Census, including a number of 'multivariate count' variables giving specific local level scores for factors like unemployment of particular relevant ethnic minority groups.

White homeless applications

Table 19 below presents a baseline model for White ethnicity households, with the dependent variable expressed as a percentage rate over the white adult population of the local authority area in 2021 as a denominator. The models are fitted as ordinary least squares (OLS) regressions for a continuous dependent variable without explicit weighting, but the implicit weighting is given by the relative number of homeless cases in a locality. The first model contains 18 explanatory variables, all significant at the 10% level and all bar one at the 5% level. The relative strength and direction of relationships is generally best taken from the standardized 'beta' coefficient.

In these models we generally include the share of the relevant ethnic group, or sub-groups, in each locality as a predictor. In the case of the White population, a higher share of UK-born White population is associated with a lower homelessness rate, whereas a higher share of non-UK born White population is associated with higher homelessness rate. Two in-migration indicators, one referring to mainly within-UK movement and the other to international in-migration, both have negative effects in the White homelessness model – more/most White migrants are relatively better off, whereas more of the non-White migrants may be in more vulnerable categories. Demographic predictors also include lone parent households (small positive effect on applications), but single person households has a much stronger negative association. Areas with more adults with no qualifications have a lower homelessness rate (slightly unexpectedly, but possibly a regional north-south effect). Higher white employment rates reduce homeless applications, while higher white unemployment is associated with higher homelessness, as expected. Areas with a higher incidence of the benefit cap see lower homeless applications from White households, other *things* equal (somewhat unexpected – but see below).

Table 19: Regression model for White-led household risk of homelessness as a function of local characteristics including selected ethnic-specific attributes, England 2019-22

Variable description	Varname	Coeff B	Std Coeff Beta	t stat	signif p value	collinear VIF
	(Constant)	3.114		164.670	<.001	
White British (UK born)	pwhitebrit21	-0.011	-0.437	-138.323	<.001	12.169
White other	pwhiteoth21	0.030	0.299	116.844	<.001	7.943
Single person hhd	pallsing	-0.037	-0.212	-127.294	<.001	3.377
Lone parent household	palllpfam	0.005	0.022	8.969	<.001	7.062
Gross in-migration rate	ginmr	-0.053	-0.213	-105.714	<.001	4.940
Internationl in-migrn rate	intinmr	-0.259	-0.335	-116.306	<.001	10.118
No qualifications	pnoqual	-0.008	-0.047	-33.124	<.001	2.436
White employed	pwhiteemp	-0.003	-0.026	-13.300	<.001	4.787
White unemployed	pwhiteunem	0.130	0.252	99.781	<.001	7.763
Benefit cap % hhd	pcbencap	-0.781	-0.286	-153.798	<.001	4.198
White social renters	pwhitesr	-0.006	-0.058	-32.207	<.001	3.880
White private renters	pwhitepr	0.000	0.005	1.667	0.095	11.775
Housing vacancy rate	pvac	-0.076	-0.107	-89.803	<.001	1.737
Destitute complex need	pdestsmd	2.107	0.613	300.214	<.001	5.077
Hostel residents % hhd	phostelnew	-0.460	-0.294	-237.502	<.001	1.869
Sparsity (hectares/person)	laspars	0.231	0.121	92.548	<.001	2.097
London dummy	londdum	-0.642	-0.424	-207.800	<.001	5.062
Core cities dummy	BECent	0.247	0.177	118.271	<.001	2.714

a Dependent Variable: phlwhite

Model Summary

Model	R	R-sq	Adj R-sq	S E Est
1	0.615	0.378	0.378	0.44389

ANOVA

	Sum of Sq	deg frdm	Mean sq	F ratio	Sig.F
Regression	90735	18	5040.845	25583.27	<.001
Residual	149033	756374	0.197		
Total	239769	756392			

Source: Author's analysis of HCLIC cohort outcomes data for homeless applicants in England where case was closed with known outcome over period 2-3 years from application, including attached local authority level data from Census and other sources, some of which is ethnic-specific..

Social renting by white households is associated with lower homelessness, implying a generally preventative role , while private renting is positive but barely significant. The housing vacancy rate, indicative of a slacker housing market, is associated with lower homelessness rates. An index of destitute adults with complex need has a strong positive effect. However, more hostel places in a locality seems to be associated with lower levels of homeless applications. Slightly unexpectedly, but after allowing for all other factors in the model, more rural areas have higher rates of White homeless applications, as do core cities ('Business and Education Centres), but London itself has a negative effect. The latter finding is surprising on the face of it, but may reflect the deterrent effect on applications of the very

tight housing market and the associated low prospects perceived for getting a good housing solution, particularly for single would-be applicants. However, the lower White homelessness application rate in London, controlling for all the above, may also reflect the recent history of social and ethnic geography in London, where ethnic minorities are increasingly a majority of the overall population, 'gentrification' has proceeded strongly across many previously mixed or working class areas, and longer-standing white populations on moderate incomes may have increasingly migrated out to the wider region. Lastly, there is also a technical measurement factor which affects this analysis, as well as more descriptive outputs from the SRS cohort analysis, which is that because of the tight housing/homelessness situation in London, homeless cases take longer to be resolved; because this analysis is based on the cohort whose cases were closed within 2-3 years, this may somewhat bias London rates downwards.

In discussing the model results for the various minoritized groups, we refer to the summary Table 20 which follow this section. For each ethnic group we generally highlight the more distinctively different findings on the role of particular variables.

Black homeless applications

For Black homeless applications, some of the effects in the model are similar to those for White households, but some are different. Similar effects are found with qualifications, ethnic-specific employment and unemployment, social renting, vacancies, hostels, rurality, London and core cities.

Different effects are found in a number of cases, however. Black single person households are quite strongly positively associated with homeless applications, and the lone parent effect is stronger as well. Black homelessness is positively associated with gross(internal) in-movement to the LA, while still having a (weak) negative association with international migration[15]. The benefit cap variable changes from a strong negative to a strong positive effect on homeless applications, suggesting that this measure may indeed be discriminatory. Private renting now has a more significant negative effect in this model (implying less association with homelessness). Lastly, destitute complex need rates are no longer strongly positive, but now more weakly negative (implying that homelessness + complex needs is more of a problem in the White population).

Several additional variables come in as significant in the Black homeless applications model, including the child poverty indicators with a moderate negative effect. The same applies to the affordability ratio (private rent/income) variable. However, crowding affecting black households has a very strong positive effect in boosting homelessness in this model.

Asian homeless applications

This model has a somewhat poorer fit with less variables found to be significant. The first two variables in the table in this case are Indian and Pakistani/Bangladeshi populations. The proportion of Indians within the population is positively associated with Asian homelessness rates, whereas the proportion of Pakistani/Bangladeshi is (more strongly) negatively associated with homeless applications. This on-the-face of it surprising finding, given the latter group's general image as more deprived, may be possibly explicable by the claim that

[15] Black international migrants may be more likely to be initially in groups not eligible for public funds, including homelessness support, e.g. asylum applicants, irregular migrants.

the latter group are more likely to experience hidden homelessness (crowding and concealed/sharing household status). Within the Asian group, single person Asian households have a positive association with homelessness, as do Asian lone parents (more marginally), whereas older Asian households are associated with lower homelessness, as expected.

Similar effects to those in the models just described apply in the case of no qualifications, Asian unemployment, Asian private renting, vacancies, hostels, rural, London and core cities. The benefit cap factor is positive as in the Black homelessness model, but less strongly.

Several effects are different from the preceding models. Social renting levels among Asian households are positively associated with Asian homeless applications – this apparent effect probably reflects at least in part a reverse causation effect (previous homeless application flows having boosted the Asian social tenant proportion). Destitute complex need levels are positively associated with homeless applications, which makes this group more like the White population than the Black population – this is likely to include a significant amount related to DVA.

Mixed ethnicity homeless applications.

This model has a better fit than the two preceding ones, but not quite as good as the White homeless applications model. Most variables have effects consistent with previous models, with a limited number of differences. The positive association with the in-movement of population is similar to the Black model, but not the others. The positive association with international in-migration is different from the three previous group models, but more similar to the 'Other' ethnic group. The negative association with child poverty is similar to the Black applications model. The negative association with the LHA-market rent gap is not significant in any of the other models. The positive association with destitute complex needs is consistent with all of the other models except that for Black applications.

Other ethnicity homeless applications

This model has a rather poorer fit to the data than most of the other models in this set, except for the Asian one, and less variables are significant than in any of the others. A majority of variables remaining in the model have effects consistent with those reported across the other groups (where significant). International in-migration is positive in this model, as it is in the model for mixed ethnicity, but not the other ethnic group models – this ethnic group is quite associated with recent migrants, albeit including many who may not have immediate access to public funds or homelessness support. The specific variable 'Other Ethnicity and Born Overseas' is included in this model, with a significant positive effect.

In this model, unlike the others which included the variable poor children, that variable has a positive association with homeless applications, albeit not very strong. Complex needs are no longer significant, unlike all the other models except for Black ethnicity, but instead the general destitution indicator shows up as significant, highlighting areas with high levels of extreme poverty generally. Lastly, this is the one model where rurality has a negative effect. This may reflect likelihood that relatively few recent migrants from the typical origins of Other ethnicity people (e.g., Middle East and Africa) do in fact go to rural areas.

Table 20: Summary comparison of regression models for ethnic-specific household risk of homelessness as a function of local characteristics including selected ethnic-specific attributes, England 2019-22 (standardized 'beta' coefficients and significance levels)

	White		Black		Asian		Mixed		Other	
Variable description	Beta	Signif	Beta	Signif	Beta	Signif	Beta	Signif	Beta	Signif
Eth Group % popn 2021	-0.44	***	0.05	***	0.07	***	0.29	***	0.11	***
Eth Sub-Group % popn	0.30	***		***	-0.18	***				
(Eth) single person hhd	-0.21	***	0.22	***	0.04	***	0.15	***	0.29	***
(Eth) lone parent	0.02	***	0.13	***	0.01	***	0.41	***		
(Eth) older (65+)					-0.14	***	-0.07	***		
Gross in-migration rate	-0.21	***	0.12	***			0.04	***	-0.12	***
Internationl in-migrn rate	-0.34	***	-0.01	**	-0.11	***	0.11	***	0.29	***
(Eth) born overseas									0.06	***
No qualifications	-0.05	***	-0.03	***			-0.02	***		
Eth employed	-0.03	***	-0.01	***						
Eth unemployed	0.25	***	0.01	***	0.24	***	0.03	***		
Benefit cap % hhd	-0.29	***	0.23	***	0.04	***				
Mkt rent-LHA gap							-0.12	***		
Poor children % AHC			-0.08	***			-0.10	***	0.03	***
Affordability ratio			-0.26	***					-0.19	***
(Eth) social renters	-0.01	***	-0.08	***	0.18	***			0.05	***
(Eth) private renters	0.01	*	-0.11	***	-0.08	***	-0.03	***	-0.25	***
Eth crowded hshlds			0.43	***			0.11	***		
Housing vacancy rate	-0.11	***	-0.17	***	-0.16	***	-0.10	***		
Destitute general (UK)									0.26	***
Destitute complex need	0.61	***	-0.02	***	0.28	***	0.02	***		
Hostel residents % hhd	-0.29	***	-0.10	***	-0.07	***	-0.06	***	-0.28	***
Sparsity (hectares/person)	0.12	***	0.11	***	0.12	***	0.11	***	-0.07	***
London dummy	-0.42	***	-0.27	***	-0.04	***	-0.44	***	-0.11	***
Core cities dummy	0.18	***	0.05	***	0.09	***				
Summary model statistics										
Mean dep var	1.16		2.13		0.72		0.92		1.86	
Adj R-square	0.38		0.31		0.27		0.35		0.29	
Std Error Estimate	0.44		0.95		0.39		0.56		1.06	
	2558		1548		1708				2183	
F ratio	3		6		7		23399		0	
Signif F	<.001		<.001		<.001		<.001		<.001	

Source: as Table 19.
Note: significance levels of individual coefficients: *** 1% level ** 5% level * 10% level.

Summing up, and possible further steps

To sum up this section, it may be claimed that these models represent some enhancement and development of earlier LA-level models, including those reported in the earlier *State of the Nation* report and in the Crisis Homelessness projections, by offering more insights into differences between the main ethnic groups in terms of key drivers or risk factors. However, there may be scope for further refinement of the models.

A further, and more ambitious step, could be to break the predicted levels of homeless applications down according to blocks of variables, in a similar fashion to what has been done in the earlier section using various micro household survey data sets. One difference here, in this, LA-level modelling case, we would have taken the further step of allowing the coefficients showing the direction and strength of each effect to vary between the main ethnic groups.

8. Exploring Structural Models and Mediation

The kinds of (logistic or OLS) regression models presented in the preceding section provide a valuable early step towards quantifying the effects of different factors, including ethnicity itself and indicators of discrimination/prejudice where available, on the differing homelessness outcomes of different ethnic groups in the UK. However, the results presented beg many more questions. In particular, insofar as different factors associated with homelessness may be interpreted as potentially causal, this begs the question as to what are *the causes of these causes*, and whether ethnicity plays a part *earlier in the causal chain*. In fact, there is already plenty of evidence that ethnicity is systematically related to factors which we have shown to be very important in accounting for higher homelessness risk, such as housing tenure and poverty. Furthermore, significant parts of this evidence relates to earlier key stages in the life course, for example childhood, educational outcomes, and early employment experiences. Given the controversies surrounding the Sewell (2021) report, which focus significantly on the failure to fully consider these types of effects, it is very important that we develop approaches which enable us to explore such hypotheses.

There are various techniques of analysis which are increasingly used to engage with these issues, including 'Structural Equation Modelling' (SEM) and 'Mediation Analysis'. The idea of distinguishing 'structural relationships' from simple predictive models based on multiple correlation and regression has long featured in economics approaches to statistical analysis, and techniques such as 'instrumental variables' (IV) or 'two stage least squares' (2SLS) have been used to tease out the parameters of theoretically specified functions, such as 'demand' and 'supply' (Cunningham 2021) . Such methods can work reasonably well in contexts where the theoretical specification is sound and the data (typically aggregated, not micro) fit the model pretty well. SEM has become popular in more exploratory social applications where the data may be based on large scale micro-surveys which collect many indicators. Here the approach tends to involve stages of first reducing the data using factor analysis to arrive at a few key underlying measures of hypothesized phenomena and then looking at the relationships between these factors.

Mediation involves the essentially simple idea that causal processes work partly directly and partly indirectly, through third factors which 'intervene' in the relationship between the background causal factor and the outcome of interest. For example, poverty and housing tenure may be intervening factors between ethnicity and other demographics, regional factors, and homelessness outcomes. The posited structure of relationships assumes a reasonable presumption of causal links in the directions specified, based on wider understanding of the phenomenon and different kinds of evidence. A key difference between

mediation and SEM or IV is that we simplify by assuming a 'recursive' structure, meaning that we assume causal arrows move in one direction through the model.

Through most of the twentieth century, statisticians were reluctant to talk about causality in the context of observational data (as opposed to data from controlled experiments). However, in recent decades there has been an intellectual counter-revolution and it is now increasingly respectable undertake statistical modelling of observational data informed by a view of the causal structure underlying the data. (Pearl & Mackenzie 2019, Blalock 1963; MacKinnon 2008, VanderWeele 2015, Cunningham 2021) .

Thus it seems that mediation looks like a logical next step for our analysis of BAME homelessness, but to make it work coherently we may need to engage in some 'data reduction', whether of the kind exemplified by SEM or in a way more structured by prior understanding of the phenomenon.

For our initial extension of our analysis of three datasets (EHS, PSE, BCS) in this direction, it is appropriate to shift from a focus mainly on binary (yes-no) measures and logistic regression to a focus on composite variables which can take a range of values, and revert to ordinary least squares linear regression (or some variant on this). This is because the classic approaches to mediation assume a linear model, i.e. that the effect of variable x on variables z or y is constant p]er unit of change, regardless of the level of x or of z or y.

We have created an initial set of composite variables to represent ethnicity (including discrimination and, where appropriate, migrancy), homelessness outcomes, poverty, housing circumstances, health and life events, and so forth – i.e. for the key variables of interest, the key outcome, and expected mediating factors. Other variables in these models are treated as 'exogenous' (i.e. determined outside the model system), and for these it is not necessary to transform them. The weighting used when combining components into composites are partly determined by judgement, partly by initial evidence (e.g. on homelessness risks of different ethnic groups), or by default simply giving equal weighting to each component. This can be an area for further refinement.

<u>English Housing Survey</u>

For our initial exploration of this approach we construct a *simple index of homelessness* based on the sum of the flags (1 vs 0) for each of seven indicators: concealed hhd; concealed temporary resident at risk of homelessness last year; ever homeless in recent years (double weight); previously in temporary accommodation; offered temporary accommodation; rehoused following homelessness. This indicator can take values between 0 and 8. This is the target 'dependent' variable which we are trying to explain, and is represented by the green box at the bottom of the Figure 10 below.

Our *index of poverty* has a similar structure based on eight flags for the following: low AHC income; below 60% median equivalent income after and before housing costs; receiving means tested benefits, income related benefits; finding rental payment very difficult; being in worst 10% and worst 20% of small areas in Index of Deprivation. Poverty is one of two 'intervening variables' which feature in this model, sitting between our EthMigDisc indicator (top left of Figure below, shaded light blue) and the homelessness outcome indicator. The intervening variables are shaded in light brown.

Our *index of housing insecurity and unaffordability* is again based on eight flags or ratios (centred on 1.0 at mean values), covering social rent tenure, private rent tenure, having been asked to leave, living in a flat, relative house price, relative rent level, excess rent above LHA, and inverse of (social sector lettings rate). The price, rent and lettings variables are regional level values. This housing index is the other intervening variable, shown with light brown shading in the Figure 9 below.

Our *index of ethnicity-migrancy-discrimination* is a simple score sum of flags for Black and Mixed ethnicity and for having migrated in last 10 years and for having experienced discrimination in housing. This index is 'exogenous' in our model – it is determined outside the system represented by our model. Causal arrows may run from this to other variables, but not the other way.

Other exogenous variables in this model include ages (under 30, 30-44, over 65), household types (single, lone parent, multi-adult), socio-economic class (high and low), unemployment rate (region), bad general health, limiting disability ('a lot') and a London flag. These 'exogenous' variables appear along the middle and top right of Figure 11 below, with blue backgrounds. Clearly, this is a fairly crude apportionment between exogenous and endogenous (intervening) variables, partly to keep it relatively simple. It might be argued that ethnicity affects socio-economic class via education and the labour market; and even that it affects household types. These possibilities are explored further in the second approach to mediation, using PSE, and later in a revised approach to using the EHS. Arrows (in pale blue) flow from these exogenous variables to influence the key intervening and outcome variables; our regression model takes account of (controls for) these other influences by including them in the regression models when estimating the effects linking the key variables of particular interest to us, which are the direct and indirect effects flowing from EthMigDisc. (thicker black lines with arrows).

Figure 11: Schematic causal diagram for homelessness index involving two mediating factors showing strength of links in key pathways: based on English Housing Survey.

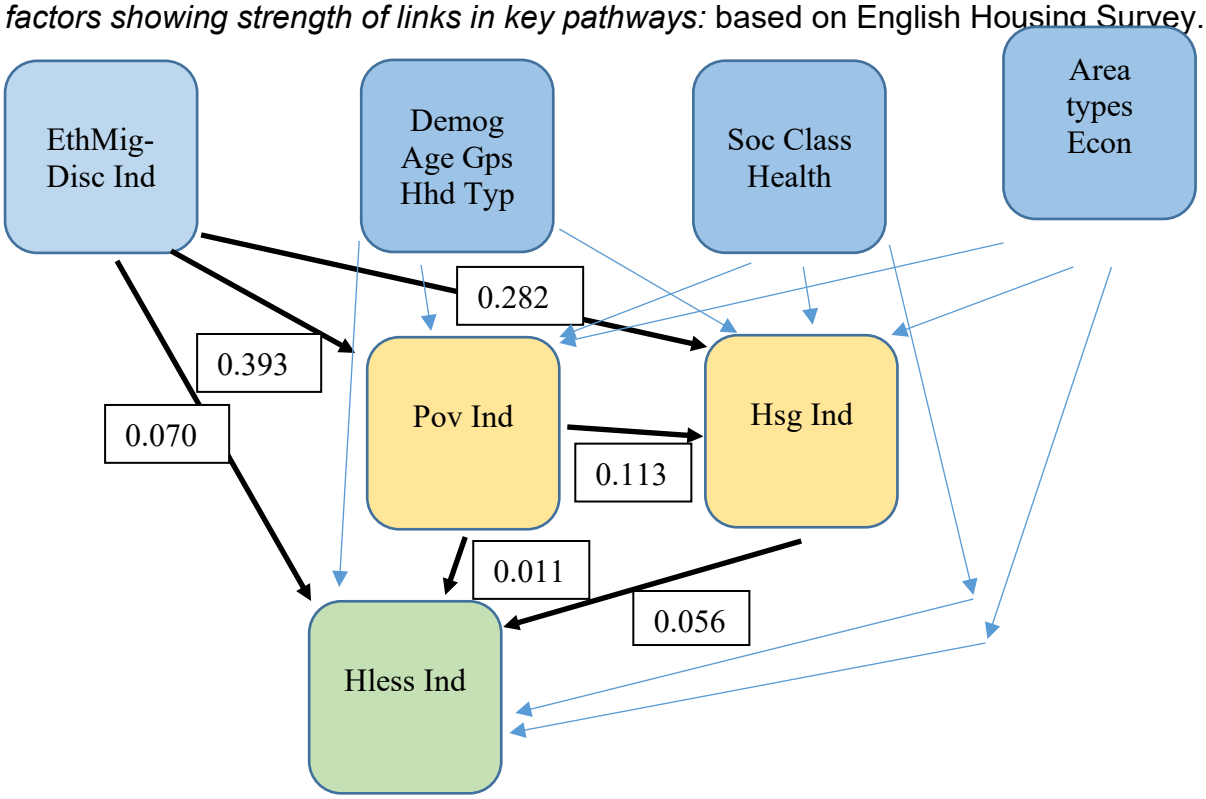


Table 21 shows the results of this first rather crude analysis based on EHS. The numbers in the tables are regression coefficients showing the effect of one unit change in the index variable listed across the top on the variables listed down the left hand side[16]. It shows that the EthMigDisc composite has quite strong effects on poverty (0.393) and housing disadvantage (0.282), but only a moderate direct effect on homelessness (0.070) when poverty and housing are already in the model. However, the second column shows that poverty has effects on housing, particularly, but also on homelessness, while housing has an impact on homelessness as well, while allowing for the other variables. These relationships are the ones shown with heavy black lines in Figure 10 above.

[16] In this instance, these are the actual regression coefficients, not standardised beta coefficients. Since the key indices have similar scaling that is not problematic.

Table 21: Summary of simple mediation analysis for relationship between ethnicity-migrancy-discrimination and homelessness index, based on English Housing Survey 2016-18. (coefficients in OLS regression models)

Simple Results Table	From these variables				
To these variables	EthMigDisc	Poverty	Housing	Poverty-Hsg	Sum total
Poverty	0.393				
Housing	0.282	0.113			
Homeless direct	0.070	0.011	0.056		
Mediated effects (products)		0.004	0.016	0.002	0.023
Total effects (EthMigDisc)	0.070	0.004	0.016	0.002	0.093
Total /direct					1.323

The mediated effects are shown in the fourth line of numbers. These are the products of the relevant coefficients. So the effects of ethnicity via poverty are the product of the effects of ethnicity on poverty (0.393) and that of poverty on homelessness (0.011), making an effect via that pathway of 0.004. Similar calculations are shown for the ethnicity-housing pathway and for the ethnicity-poverty-housing-homeless pathway. The overall indirect effects are the sum of these three components, 0.023 in this case. Thus the total effect of ethnicity on homelessness in this illustration is the direct effect of 0.070 shown in the first column and the 0.023, making 0.093 overall. Thus it can be seen that allowing for these mediated effects increases the overall impact of ethnicity on homelessness by around 32%, in this illustrative example. Clearly, this analysis is relatively crude and probably incomplete, but serves to illustrate the approach.

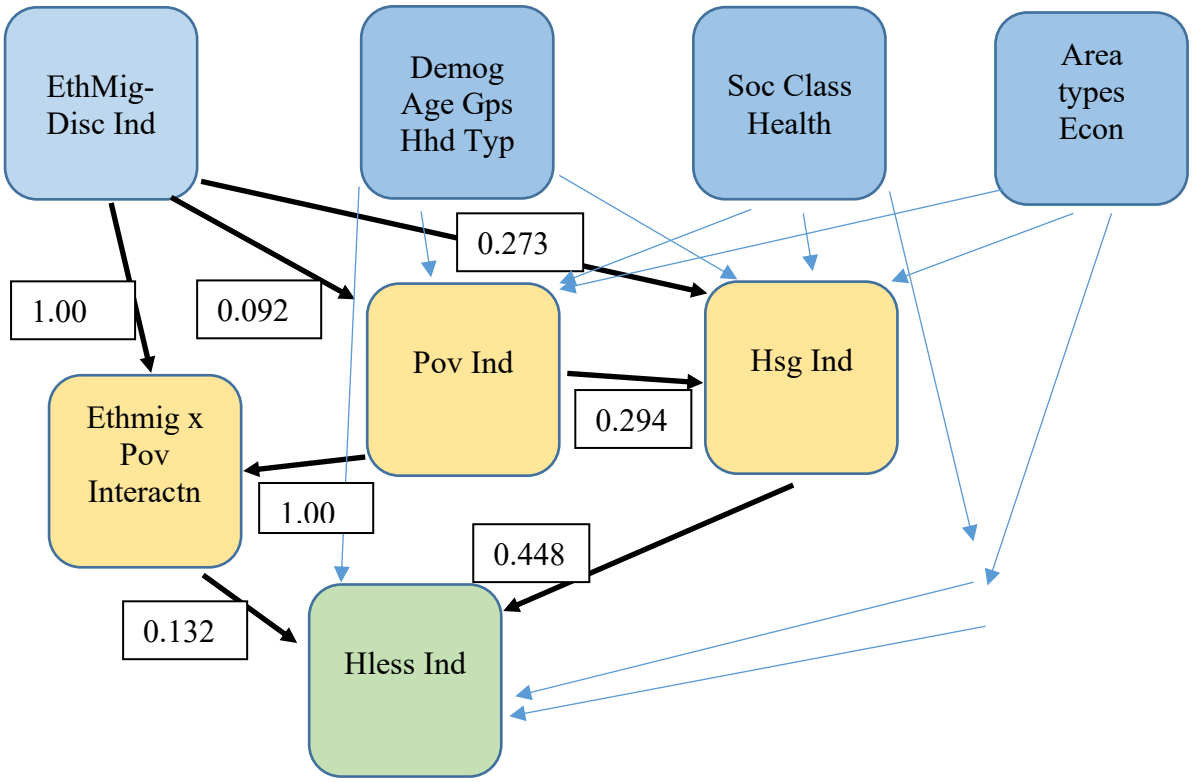
Later in this report, including through Tables 23 and 26, we report a modified approach to mediation using the same EHS dataset, but modifying the variables somewhat and using a different form of regression analysis more suited to the characteristics of the indices being used (models summarised in Table 23). Figure 12 presents this modified model.

As can be seen, the composite indicator capturing ethnicity, migration and/or discrimination ('EthMigDisc') has both indirect influences on homelessness, mediated through housing and through poverty-housing, and also a direct but moderated influence through an interaction with poverty[17]. These influences act through pathways shown by thick black arrows in the Figure[18]. These indirect or 'mediated' pathways increase the total impact of EthMigDisc on homelessness by varying amounts, relative to the direct effect alone, depending on the circumstances of the case. Across a range of cases, the impact was increased by proportions in the range from 57% to 321% (see Table 26). Evidence of this kind may be important, as it can provide a robust means of challenges the apparently naïve emphasis in Sewell on direct effects only.

[17] An 'interaction' in this context simply means that the two variables are multiplied together.

[18] The numbers associated with the thick black arrows are the regression coefficients ,which express the change in the variable at the end of the arrow for one unit change in the variable at the beginning of the arrow. In this model the variables at the end of the arrow are measured in natural logarithm units.

Figure 12: Modified schematic causal diagram for homelessness index involving two mediating factors and an interaction effect, showing strength of links in key pathways: based on English Housing Survey.



Poverty and Social Exclusion Survey

The PSE survey allows a rather more sophisticated model structure which takes account of rather more variables, both exogenous and intervening. While it remains a cross-sectional survey, it has some variables which capture past experiences, notably poverty in childhood. We therefore have attempted a rather more ambitious approach involving five potential mediating factors: adverse health and life events; household composition risk; socio-economic class; current poverty; and rental housing tenures. The essential structure involves endogenous relationships within adult life but treats everything before that, including ethnicity and associated indicators of prejudice/discrimination, as exogenous.

The *homelessness index* is based mainly on retrospective experiences including any homelessness ever, homeless in last five years, rough sleeping, emergency accommodation, staying with friends and relatives, insecure accommodation, facing the probability of eviction, and having made a house move owing to unaffaordability (range 0 to 8).

The *ethnicity indicator* is scored between 0 and 4 based on the descriptive evidence of homelessness risk: White – 1; Black – 4; Indian & Other Asian – 0; Pakistani/Bangladeshi – 1; Other – 3 Mixed – 3. To this is then added 1 for each of being a migrant, experiencing harassment or bad treatment on account of ethnicity, or experiencing Stop and Search, to give the ethmigdisc index (0-8).

The *health and life events index* scores 1 each for general health bad, had major health problem last year, and has a criminal record (0-3). It was decided not to include mental health problems in this, but to treat as part the exogenous background variables.

The *household composition composite* aims to capture the prevalence of household types with relatively high vulnerability to homelessness, vs those with low vulnerability. Scores range from lone parents (9) and working age singles (8) down to couples without children, of whatever age (1).

The *socio-economic level indicator* is a simple ranking of NS-SEC levels from 1 to 8.

Current poverty scores 1 for each of: receives any income-related benefit; 3 or more consensually agreed material deprivations; living in the most deprived 10% of neighbourhoods; below 60% of median equivalised income BHC; months unemployed last 5 years/30 (0 to 6.4).

Renter is simply a 1-0 dummy for being either a social renter or a private renter.

In a recursive model structure, five regressions are fitted to each successive endogenous variable, including all exogenous variables, the ethmigdisc index, and preceding endogenous variables in the above sequence.

The exogenous variables include a measure of *past poverty* going back to childhood – 'Looking back over your life, how often have there been times in your life when you think you have lived in poverty by the standards of that time? (Scale: 1 Never to 5 Most of the time). In addition to this, and the ethmigdisc index, there are indicators of mental health problems, age groups, and local area housing market characteristics (relative house price level, social housing % share). A qualifications index is also used in the prediction of socio-economic level.

The model linking these variables in a recursive structure is much more complicated, with many pathways through it. With five endogenous variables there are up to five 'two-step' pathways between ethnicity and homelessness, in addition to the direct pathway. In theory allowing for all pathways of up to five steps, there are 24 potential pathways to consider. In practice, it is only the two-step pathways and a small number of three step pathways which appear to be significant, while one of the two-step pathways (that via SEL) is not significant (no relationship from ethmigdisc to SEL, rather surprisingly, albeit after controlling for qualifications).

Our test of this more complicated model (using OLS regression) suggests that taking account of all indirect mediated effects increases the size of the effect of ethmigdisc by 68% compared with its direct effect. However, the crude alternative of omitting all of the endogenous intervening variables suggests that the effect of ethmigdisc would be doubled.

Of the four two-step pathways, the ranking in terms of relative size is

1. Via poverty
2. Via health and life events
3. Via renter
4. Via household composition

Of the three-step pathways which have any significant effect, the ranking is

1. Via household composition and renter
2. Via household composition and poverty
3. Via poverty and renter
4. Via health and life events and poverty.

All of this is highly exploratory. These models should be checked using different ways of scoring the indices or transforming them before analysis (e.g. taking log of 1+ index), or possibly using a different form of regression. However, it does suggest that having a richer array of variables to take account of, including variables relating to the past as well as the present, can reveal more about the complexity of the pathways linking ethnicity to homelessness outcomes.

British Cohort Study (BCS)

As explained in a previous section, the BCS is a birth cohort study which follows at periodic interviews a randomly selected group of c.10,000 individuals born in the UK in 1970. An obvious consequence is that by definition this cohort excludes all migrants (born overseas) and thus narrows the focus to essentially second generation BAME people. A further second-order consequence is that, insofar as critical processes of disadvantage arose in particular lifestages, such as the teenage years, those processes were as they were operating in UK in a particular time period, in that instance the early 1980s. Systems such as education, training, youth services, care services, youth justice, etc. may (or may not) have changed significantly since then. In different waves of the survey, different questions may be asked, so we are piecing together information from different life stages with different emphasis at different stages. This analysis uses information up to the age of 42 (in 2012) although the most useful and detailed homelessness information was collected in 2000 at age 30.

The *composite homeless index* includes: the basic reporting of any homeless experience since age 15 (to age 30), score 1; multiple episodes of homelessness; duration of homelessness (1= <1 yr; 2= > 1 yr); any rough sleeping (score 3); any hostel/shelter/B&b (score 2); squat or stay with friends (1); any homelessness reported by wave 9 (1), aged 42; household crowded and dissatisfied with home at wave 6 (1) and/or wave 9 (1); having needed to move for reasons to do with affordability (1); having made frequent moves, >4 times between waves (1). This index takes values between 0 and 14. For the following analysis we take the natural log of 1 + the homeless index.

A composite indicator of *poverty in childhood* (povind5) takes account of five factors: free school meals age 10; renting household age 10; lacking several key consumer durable goods age 10; household with no car age 10; low equivalised income age 16 (with missing income cases imputed). Values are scaled from 0-1.

An *index of teenage difficulties* includes the following factors (with weights based on previous logistic regression models for any homeless experience): truanted from school by age 16; ever in care; excluded from school; serious drug issues by age 16; not living with both natural parents at 16; convicted or cautioned for a criminal offence by 16; experienced other trauma by 16. It will be noted that this set of factors overlaps quite strongly with commonly-used in indicators of 'Adverse Childhood Experiences' (ACEs) and/or factors identified in earlier studies (e.g. MEH) as precursors of adult complex needs accompanying homelessness.

An *index of early adult economic difficulties*, weighted in the same way, is based upon whether subjects had left education at age 26 (-ve), whether they had never had a full time

job by 26, whether experienced any unemployment by 26, renting at age 26, or still living with parents at 26 (-ve).

So the regression models used here predicted the (log of) the homelessness index on the basis of a small number of exogenous variables (female gender, rural dummy, selected regional dummies for North and Scotland and an *ethnic i*ndex (ethind2=1 - 0.6*indian+1.36*blackafcar +1.26*otheth +1.25*mixedbw), based solely on broad ethnicities and weighted partly on the basis of evidence from modelling homelessness in this dataset.

Table 22: Summary of simple mediation analysis for relationship between ethnicity and homelessness index, based on British Cohort Study 1970-2012. (coefficients in OLS regression models for log of homelessness index +1)

	Simple Results Table	From these variables	Pov as child	Adult Ec Diff	Ad Reln & LE	
	To these variables	Ethind2	povind5	teendiff	Adecdiff	aflev
povind5	Poverty as child	0.057				
Teendiff	Teenage diffics	0.007	0.018			
Adecdiff	Adult Ec Diff	0.008	0.014	0.079		
Aflev	Adult Reln & LE	-0.020	0.100	0.282	3.120	
Lhlessind	Homeless direct	0.100	0.063	0.989	0.960	0.050
	Mediated effects (products)		0.004	0.007	0.008	0.000
	Total effects (EthMigDisc)	0.118				
	Total /direct					1.183

Notes: Ethnic index in this model does not include migrancy, as no migrants in sample, and no indicators of discrimination or harassment. The endogenous indices in the model have ranges of variation between 0.22 (aflev) and 0.98 (povind5), the ethind2 variable has a range of 1.96 and the log homelessness index a range of 2.71.

The results of the model summarised in Table 22 show that ethnicity does have a significant direct impact on homelessness. It also shows that indirect or mediated effects are detectable, particularly through teenage difficulties and early adult economic difficulties, and also through childhood poverty (some of which is further mediated through teenage and early adult difficulties). However, the extent of the markup from direct effect to total effect is rather smaller than in the two other surveys considered, as shown in Table 22. This indicates that the total effect is only 18% higher than the direct effect. This finding is approximately confirmed by simply running the model for homelessness index without any of the intervening variables, which yields a coefficient of 0.120, implying a markup of 20% from including mediated effects.

Why might this cohort study based model give a finding of less mediated indirect effects from ethnicity? It may be partly because the overall fit of the model is not great, even though many of the effects taken account of are highly plausible. Perhaps more important is the restricted nature of the sample ('second generation' BAME born in a particular period) and the fact that we are consequently not taking account of migrancy, and nor are we able to include indicators of perceived/reported discrimination, prejudice or harassment.

This work on mediation is preliminary, and somewhat rough in a technical sense. We need to explore further ways of modelling these datasets in a way which takes fuller account of the nature of the measures being used. Within that, the types of indicators used for different

dimensions of the problem can be improved. However, the work so far supports the general proposition that the total effect of ethnicity, and potentially associated issues of migrancy and/or discrimination etc., exceeds the direct effect on homelessness typically shown in regression models, because these indirect effects are mediated by a number of well recognised socio-economic phenomena.

Further exploration of mediation and interaction

The preceding section described some exploratory modelling to see what the scope might be for mediation analysis in the context of BAME experiences of homelessness, seeking to expose the role of potential 'intervening' variables. While the models reported have a degree of plausibility, they are not wholly satisfactory from either a statistical point of view or from a view of claiming them as evidence of causality. The statistical problem is that the key composite indices being used are mainly based on count data and do not have anything like a normal distribution. This generally infringes the assumptions underlying ordinary least squares regression (particularly, that there should be normally distributed residuals). The causality problem is that some of the elements within some of the composite indicators are neither clearly correctly ordered temporally nor free of the suggestion of potential reverse causation or 'selection effects'.

The solution to the former problem is clearly to adopt a form of regression model which is designed to apply to count data. There is a group of such techniques, of which the most suitable (because it is most flexible regarding the distribution of the variable and the residuals) is the Negative Binomial model, which fits a predictive model to the log of the count index plus one, using a maximum likelihood process. The fact that there is the log transformation means that we have moved away from a straightforward linear setup, so calculation of the indirect and combined effects is not a simple case of multiplying the two coefficients together. As with other non-linear models, like logistic regression, one has to calculate these effects for different representative examples with different characteristics. Therefore, this approach fits well with the idea of using such models to present vignettes, i.e. particular cases of households with different combinations of attributes and experiences.

The second issue raised, that of causality, is best illustrated by examples. So, in the EHS model the poverty index includes a measure of poverty *after housing costs*, but arguably that is partly an outcome of housing circumstances (supposedly further down the causal chain). Including it in the mediating factor 'poverty', which is part of what affects housing situation, infringes the rule that there should not be a causal effect running from mediator 2 to mediator 1 (see MacKinnon 2008, Pearl & MacKenzie 2018). It also included indicators of being in the worst or next to worst neighbourhoods for deprivation, based on IMD/ID. There is a plausible argument that homeless households, lacking bargaining power in the housing allocation process, and also being poor, tend to be rehoused disproportionately in the most deprived neighbourhoods, so leading to a reinforcement of the concentration of poverty and deprivation in those areas. Again, there is a reverse causation (or 'selection') effect here from homelessness to poverty, as measured by IMD. Having considered these arguments, we consider it prudent to remove these indicators from the composite indicator of poverty used in the mediation analysis.

Appropriate temporal ordering of variables in terms of their point of observation is generally considered highly desirable, even essential, in advancing claims of causality in the analysis of observational data. Essentially cross-sectional surveys like EHS make this difficult to achieve, although some variables may have a degree of restrospection. Panel surveys are

clearly an attractive option here, because one may use as predictors the values of variables from earlier waves of the survey than the target wave. The UK's premier household panel survey (UKHLS) does not contain direct, overt indicators of homelessness, unfortunately, but we have found it possible to develop one plausible proxy, so enabling us to carry out such an analysis.

A different kind of case arises with the housing circumstances indicator in EHS. The original version of this contained terms which referred to the regional level housing market context. It seems clear on reflection that these should be treated as exogenous and not part of a mediating variable, in what is essential an individual household level model.

A third consideration in undertaking this slightly more refined approach to mediation is to allow for the possibility that a particular intervening variable of interest may be, not (just) a mediator but also possibly an interactor with ethnicity. Interaction, in the world of linear regression models, means generally that the effect of one variable on the outcome is influenced by the value of another variable. This is typically represented by having a term consisting of the product of the two variables multiplied together. So, for example, ethnicity might interact with poverty in generating higher risk of homelessness; if poverty is absent, ethnicity might have only a weak or non-significant effect on homelessness, whilst if poverty is present the ethnicity effect is more noticeable, and if poverty is severe then the ethnic effect on homelessness is very high indeed. It turns out that in one of our datasets the evidence supports such an interaction effect. (In some of the mediation literature interaction is referred to as 'moderation', but it is essentially the same thing).

English Housing Survey

The models developed to implement this modified approach within the recent English Housing Survey data are summarised in Table 23. The notes below the table summarise the method and show the composition of each of the composite count indices. The table shows the regression coefficients linking the log of each dependent variable (+1) to each explanatory variable, with asterisks to indicate significance levels, and a column on the right to indicate the range of variation for each variable (in practice, the maximum score on the homelessness index is 4, not 6). The first model predicts the homelessness index score. The second model predicts the modified poverty index, while the third column predicts the modified housing circumstances index. These two variables act as mediators and/or (in the poverty case) interacting factors.

The final version of the homelessness index model does not have a separate effect from the ethnic-migrant-discrimination variable, but does have an interaction term between this and poverty, as well as a mediating effect from housing circumstances. Since, as can be seen in the third column, poverty does affect housing conditions, there is also a mediating pathway from ethnicity through poverty and housing, as well as directly from ethnicity through housing. These pathways are shown in Figure 12 above. Other factors in the homelessness model include ages (older age reducing risk), household type (lone parent and multi adult), lower socio-economic group, regional unemployment, health and disability, and regional rents relative to LHA. Interestingly, allowing for all of the above, homeless scores in London are actually lower than elsewhere.

Table 23: Count regression models for homelessness index with mediation and interaction involving poverty and housing circumstances indices – English Housing Survey, 2017-19

Dependent Variable		*hlessind*		*povind4*		*hsgind4*		Range
Explanatory variables	Varname							
		(0-6)						
Constant	(Intercept)	-2.742	***	-1.028	***	-1.513	***	
Ethnic-migrant-discrim	ethmigind			0.092	***	0.273	***	0-3
Current poverty index	povind4					0.294	***	0-4
Curr Poverty x ethmigind	povethint	0.132	***					0-9
Housing circ's index	hsgind4	0.448	***					0-3
Aged under 30	ageu30	-0.091	.	0.086	***	0.672	***	0-1
Aged 30-44	age3044	-0.290	***	0.052	**	0.316	***	0-1
Aged 65 or over	age65ov	-0.979	***	0.440	***	-0.012		0-1
Single person hshld wkg age	sing	0.052		0.530	***	0.523	***	0-1
Lone parent family	lpfam	0.768	***	1.233	***	0.028		0-1
Multi-adult hshld	mult	1.363	***	0.172	***	0.191	***	0-1
High socio-economic group	hisec	-0.374	***	-1.572	***	-0.438	***	0-1
Low socio-economic group	losec	0.152	**	-0.468	***	0.082	***	0-1
Regional unemployment %	punem	0.085	*	0.160	***	0.044	*	2.6-4.9
London region	london	-0.766	***	0.004		-0.165		0-1
Bad self-reported health	badhealth	0.118	**	0.409	***	0.154	***	0-1
Disability/health limits 'a lot'	LimDisLot	0.331	***	0.511	***	0.078	***	0-1
Relative excess rent>LHA	relexrent	0.417	***					0.35-2.63
Relative regional house price	relprice					0.338	***	0.43-2.57

Coefficients measure impact of 1 unit difference in each variable on log of dependent variable (+1)

Asterisks indicate signficance level based on Wald test *** p<0.01; ** p<0.05; * p< 0.10

Model fitted is negative binomial with log link function

Composition of indices:

hlessind= conceal1+sofasurf2+famhlessd+2*everhlessd+prevtemp+offta+rehoused

povind4=jobhrsloss +bhcinceqv60h +mtbentc +irben.

hsgind4=tensr+tenpr+askedleave+flat.

ethmigind = black +mixed + migrant10+ dischsgbame.

The models for poverty and housing circumstances are not dissimilar, with some detailed differences. Poverty is more associated with both young and old, and with single households. Housing circumstances reflect the general housing market measured by regional house prices, while the effect of lone parenthood is less marked.

As already noted, in this form of model, which is non-linear and includes an interaction effect, there is not a single measure of the effect of ethnicity on homelessness; it depends on the household circumstances and context. For this reason, as well as to make things a bit more concrete, we use a series of vignettes of particular households with particular circumstances. This enables us to reveal the range of excess risk of homelessness, highlighting particularly vulnerable cases, while also showing the extent to which mediation and interaction increase

the impact of ethnicity (along with migration and discrimination) on homelessness. Table 26 shows a standard set of ten vignettes based on this EHS analysis.

In each of the five pairwise comparison vignettes, the ethnic minority case is predicted to experience a markedly higher incidence of homelessness, although the risk ratios (vs White UK with similar circumstances) range widely between 1.33 and 5.35. The contribution of mediated effects to total effects on homelessness also ranges widely across these cases, accounting for between 36% and 76% of the total increment to homelessness. In general these findings tend to suggest that mediation (and interaction) make for a greater effect of ethnicity (and related migration and discrimination experiences) on homelessness than we derived from the simpler OLS regression approach reported above. The overall risk ratios do look high for some groups, but not out of line with the simpler bivariate analyses reported earlier.

Poverty and Social Exclusion Survey

We have undertaken a fairly closely comparable analysis using the PSE UK Survey of 2012, data referring to England and Scotland combined. Table 24 summarises the results of the key count regression models, this time involving current poverty and housing renter as mediators and no interaction term. The homelessness index is mainly based on past experiences of homelessness with more severe or different types of experience increasing the score. The 'ethmigdisc' index has a wider range and includes stronger differentiation between Black, Mixed and Other groups as against Indian and other Asian groups, as well as indicators of relatively recent harassment or adverse treatment including Stop and Search. Current poverty is similar to the EHS indicator, except for the inclusion of material deprivation, while there is also a good subjective indicator of past experiences of poverty on a scale 1-5 (treated as exogenous). There is no significant disability effect but there is a recent health condition event and also one particular indicator associated with complex need homelessness, having a criminal record, which although it has a fairly low incidence, has a strong impact on homelessness risk.

The effects on homelessness shown in column 3 are broadly in line with expectations and with the EHS model. The ethmigdisc index and both mediators (current poverty and renter) are significant positive predictors, while the other effects are generally in line with expectations, including quite strong effects from single households, past poverty and criminal record, and some effect from housing market, as well as negative effects from older ages. Young adults, high qualifications and sparsity are not significant in terms of direct effects on homelessness.

Table 24: Count regression models for homelessness index with mediation involving poverty and renter indices – Poverty and Social Exclusion Survey, England & Scotland, 2012

Dependent Variable		*hlessind8*		*currpov4*		*renter*		Range
Explanatory variables	Varname							
Final outcome	hlessind8							0-7
Constant	(Intercept)	-3.181	***	-0.678	***	-1.968	***	
Ethnic-migrant-discrim	ethmigdisc	0.102	**	0.039	**	0.042		0-8
Current poverty index	currpov4	0.249	***			0.363	***	0-4
Housing renter	Renter	0.605	***					0-1
Aged under 25	aageu25	0.345		0.383	***			0-1
Aged 50-64	aage5064	-0.239	**	-0.274	***	-0.298	***	0-1
Aged 65 or over	aage65ov	-0.533	***	-0.373	***	-0.406	***	0-1
Single person hshld wkg age	Sing	0.434	***	0.279	***	0.112	*	0-1
High (degree+) qualifications	Hiqual	0.179		-0.631	***	-0.496	***	0-1
Lived in poverty in past	Lvinpov	0.311	***	0.248	***	0.114	***	1-5
Social renting tenure LA level %	Lapsocr	0.009	*	0.001		0.011	***	0-1
Log of sparsity of popn (ha/head)	lspars01	0.034		-0.080	***	0.154	***	-4.9 - +2.5
Recent life event health condition	lifeev10	0.274	**	0.284	***	0.078	***	0-1
Criminal record	crimrecd	0.682	***	0.251	***			0-1
Relative regional house price	relhprice2	0.261	**	-0.035		0.095	.	0.49-1.85

Coefficients measure impact of 1 unit difference in each vaaiable on log of dependent variable (+1)
Asterisks indicate significance level based on Wald test *** p<0.01; ** p<0.05; * p< 0.10
Model fitted is negative binomial with log link function
hlessind8= anyhless+hless5yr+hlrough +hlemerg +hlfrrel + hlinsec +probevict+ unaffmove.
currpov4=anyirben+md3hh+low60bhcpse + unem6m.
renter is social or private rent
ethmigdisc=ethgpscr+migrant+harrabeth+treatbadeth+stopsearch.
where ethnic scores are: Indian & Oth Asian=0 White=1 Pak/Bang=1; Black=4; Mixed=3 Other=3.

The model for current poverty shows some positive effect from ethmigdisc, as well as expected significant effects from age (young +, older -), single households, qualifications, past poverty, rurality (-), health events and criminal record.

The model for renter shows a non-significant effect from ethmigdisc but a significant (mediating) effect from current poverty. Expected effects are found for older ages (-), singles (+, but more marginal), qualifications, past poverty, local social renting, and health events, but an interesting positive association with rurality.

The vignettes associated with this PSE model are shown in Table 27. Although the cases are intended to be as near the same as possible, differences in the models developed in the two surveys do mean that the results are not exactly the same. There is broad similarity in terms

of the resulting risk ratios for the BAME cases vs their White UK counterparts; in two cases the PSE ratios are rather higher than the EHS ratios, while in the other three cases the EHS ratios are higher. In general, the EHS analysis shows mediation contributing a larger share of the total markup for BAME cases. This is because the housing mediator variable has more content in it and plays a larger role, as well as because of the BAME-poverty interaction effect, which gives a stronger markup in more extreme cases.

From both analyses we can say that the extra risk of homelessness attributable to ethnicity-migration-discrimination effects are quite large, with risk ratios which approach in magnitude those shown in simple bivariate analyses (ranging between 1.33 and 5.35 in the case of EHS and 1.56 to 2.09 in the case of PSE.

UK Household Longitudinal Survey (UKHLS)

The UKHLS is the premier longitudinal annual panel survey conducted on UK households on a long term basis. In its present form it dates from 2009, but its predecessor BHPS went back to 1991 albeit with a smaller sample. Of the order of 20-30,000 households participate in the survey, with all adult members tracked and interviewed where possible, and the range of question topics is wide, although not all questions are asked every year. In the current context, the survey has two potentially significant advantages: (1) it is possible to identify transitions in housing and household circumstances, and homelessness is in general such a case of transition; (2) because of the time dimension of the panel survey it is possible to ensure an appropriate temporal order of variables interpreted as potentially causal within the models used (for example by using lagged values).

While the survey has a wide range of information on housing circumstances, it does not have a particular section with explicit questions on homelessness. However, through exploration undertaken in previous studies exploring the potential for modelling homelessness incidence, it was established that one reasonable proxy could be developed for the key transition of having been rehoused (into social housing) on (probable) grounds of homelessness. This proxy refers to the actual move into the tenure of social housing from other accommodation or as a newly forming household (between two annual waves) and to the presence of indicators of likely homelessness grounds (e.g. relationship separation/divorce/split to move away from family, having been evicted, ‘council offered new accommodation’, having made multiple moves, or previous dwelling type being ‘institution’ or other). The numbers of cases generated by this proxy are of the same order, when grossed up, as the numbers of households actually rehoused through the homelessness route across the country, including those helped through prevention and relief as well as main duty. The data covers all of UK and the period 2010-19, although in practice limitations associated with some other explanatory variables, particularly the attached local market characteristics, limit this to England over a somewhat shorter period.

This dataset clearly has significant value as a tool for analysing the drivers of housing need and homelessness, particularly because of its individual/household level of detail, its repeating panel structure, and the wide range of individual and household circumstances captured (e.g. physical and mental health conditions, employment type and history, mobility, income and deprivation, ethnicity and nationality). A further feature of value is that we are able to attach to the micro panel data the local authority area code of each household in each wave, and thereby attach to the dataset ‘market area level’ variables such as house prices

and rents, earnings, and unemployment rates. This helps us to develop models which reflect geographical structural factors which affect risks as well as purely individual or household level factors. For this reason we regularly use the data for modelling and projecting certain measures of housing need, for example overcrowding, concealed households and sofa surfing, which feed into regular projections of 'Core homelessness' published in the Crisis Homelessness Monitor series, as well as in occasional wider studies of housing need (Bramley 2021).

At the same time it is necessary to acknowledge the limitations of UKHLS in the present context. First, in common with other household surveys, it does not capture all of the people experiencing homelessness around the time when they are homeless, because they are either not in private households at all or they have only a tenuous connection with households they may be staying with temporarily. This applies particularly to single persons in the 'core homeless' category, (most of whom do not have 'priority need' status in England and Wales and thereby lack the general right to or expectation of rehousing in the social sector). Secondly, in common with all panel surveys, but arguably to a greater extent, UKHLS suffers from the process of attrition of the sample over time. Unlike some other well-designed panel surveys, the UKHLS does not have a regular annual refresh new sample addition, so gradually over time its sample is shrinking, and the biases arising from this (against particularly more mobile households, including private renters, and individuals, such as those with unstable family or partner relationships) grow progressively over time. Investigation in a recent project on EEA nationals and homelessness suggested an alarming degree of attrition among this group.

Notwithstanding the limitations just noted, we believe that the positive virtues of this dataset render it to be still of value for analyses of certain relevant groups, particularly those formally accepted as homeless by local authorities and rehoused, as well as a some wider elements of core homelessness including sofa surfing, or of hidden homelessness such as those suffering overcrowding. A recent addition to the survey, a question on subjective perceptions of discrimination on a range of grounds related to ethnicity and other factors, gives added value to the analysis we are able to carry out for this project.

The structure of model used to analyse the risk of being rehoused as homeless is deliberately similar to those applied to the EHS and PSE surveys. Again two intervening or mediating (/moderating) variables are used, one capturing household-level economic difficulty and the other combining private rental tenure (double-weighted) with six indicators of housing need in previous accommodation. Both of these variables do indeed appear to act as mediators, to varying degrees. In this instance, following initial descriptive and exploratory regression analyses, we choose to enter three ethnic indicators (Black, Pakistani/Bangladeshi, Mixed/other) individually into the models and retain when and where significant, while also using as a separate variable a single dummy composite indicator of reporting any discrimination in relation to ethnicity, colour, nationality, language or religion.

Because of the somewhat differing properties of the three key variables the models are predicting, we use three different forms of regression analysis to correspond with this. The proxy homelessness indicator is inherently binary (yes/no) so for this we use logistic regression, translating predictions back from log-odds to probabilities. The economic difficulties index is continuous, not integer, but normally distributed, so we use OLS

regression for this. The private renting and housing need index is an integer count taking values between 0 and 6, so for this we use the same negative binomial regression with log link function as was used in Tables 23 and 24. Because again the mediation involves some non-linear relationships, we continue to use vignettes of particular cases to illuminate the findings.

Table 25 shows the regression coefficients and significance levels for the three key models. Because of the different units involved the absolute values cannot be directly compared but the general direction and relative scale of effects of the variables may be compared. All variables retained in these models were significant at the 5% level or better.

Table 25: Regression models for probability of being rehoused as homeless with mediation involving economic difficulty and renting/housing need indices, based on UK Household Longitudinal Survey data for England, 2010-19

	Description	Probability rehoused as homeless		Economic difficulty index		Priv rent & housing need	
	Dep Var name	*proxhless2*		*ecdiff5b*		*prevprneed8*	
Variable description	Model Type	Logit		OLS		Negative	
	Varname	coeff	signif	coeff	signif	Binomial	signif
Constant	(Intercept)	-9.026	***	6.804	***	-4.224	***
Black ethnicity	Black	0.514	**	0.250	***	0.058	**
Pakistani/Bangladeshi	Packbang	0.753	**	0.321	***	0.205	***
Mixed or Other ethnicity	Mixoth					0.252	***
Any discrimination (subj)	Anydiscrim			-0.020	***	0.171	***
Economic difficulty index (0-5)	ecdiff5a	0.865	***			0.460	***
Priv rent & hsg need index (0-8)	prevprneed8	0.347	***				
Aged under 30 (HOH)	ageu30	0.855	***	0.206	***	0.754	***
Married	Prevmar	-1.222	***	-0.361	***	-0.302	***
Became unmarried	Getunmar	2.835	***	0.205	***	0.359	***
Acquired child	Getchild	0.914	***	0.148	***	0.248	***
Number of children	Prevnkids	0.144	***	0.202	***	0.155	***
Couple family hhd	Prevcfam	0.636	***	-0.057	***		
Multi-adult hhd	Prevmult	0.519	***	0.035	***	0.907	***
Long term sick/disabled	Prevltsd	0.650	***	0.456	***		
Became mentally unwell	gotMHprob			0.157	***		
Log unemployment rate (LA level)	lapunem_1	-0.041	**	0.010	***	0.044	***
Log median earnings (LA)	lmede_1			-0.345	***	-0.339	***
Log relmedian house price (LA)	lrlmdpricelp_1			-0.153	***	0.368	***

Notes: in table and following, prefix 'prev' refers to variable value for previous year.
Asterisks indicate significance level based on Wald or t test *** p<0.01; ** p<0.05; * p< 0.10
ecdiff5a=1.03*reloinc_12+0.946*lostjob+0.826*prevunem + 1.235*prevmdp. (reflecting relative low income, jobloss, unemployment and material deprivation)

prevprneed4=2*prevpr+prevcrowd+previndconc+prevconcfam+prevaffprob.
prevprneed8=prevprneed4+prevunsuith+prevunsuitf+prevcond+prevnhprb.
(reflecting private renting tenure, overcrowding, concealed households, affordability problems, unsuitability of homes for health conditions or children, poor house condition or neighbourhood problems)

Without commenting in detail on the specific effects of most of the variables in these models, there are a few points worth drawing out. The basic mediation structure seems to be justified, in that both mediating variables have strong and significant impact on the homeless rehousing proxy, while at least two of the ethnic variables continue to have direct effects on homelessness after allowing for the mediators. Two of the specific ethnic categories (Black, and Pakistani/Bangladeshi) have consistent positive effects on both mediators and on the homeless rehousing proxy itself. The mixed/other group only shows a significant positive effect on the private rental/housing need mediating variable. The flag for perceived discrimination does not have a significant direct effect on the homeless rehousing proxy, but it does have a significant positive effect on the private renting/housing need mediator, although it also appears to have a weak negative impact on economic difficulty.

The demographic variables are mainly as expected, most increasing risk except for being married which appears to be protective. The local area-based economic effects tend to work mainly through the mediators, although unemployment rate has a modest apparent negative effect on homeless risk itself. High house prices are associated with less economic difficulty (because they capture the general prosperity of an area) but with greater housing need problems.

The vignettes associated with this UKHLS model are shown in Table 28. Although the cases are intended to be similar to those reported from EHS and PSE analyses, differences in the data available and models developed in surveys do mean that the results are not exactly the same. Broadly, the UKHLS models show similar but somewhat larger overall impacts of ethnicity (and/or discrimination) on homelessness risk than the PSE models, but somewhat less than the EHS in some cases. As part of that, the UKHLS models show mediation playing a somewhat larger part than in the PSE models in some cases. The interaction effect included in the EHS model setup accounts for the wider range of variation in that case.

Table 28 shows that the average Black household reporting discrimination has over 4 times the risk of being rehoused as homeless than the average White UK household. The proportion of the higher risk which can be accounted for by our mediation model ranges between 39% and 100%, depending on the circumstances of the case. That suggests that other systematic factors which are associated with homelessness, independent of the economic and housing mediator factors, are more prevalent among Black and some other BAME groups. These include demographic factors included in the model (age, marital status, presence and number of children) and also health/disability factor.

Table 26: Vignettes comparing BAME households with otherwise comparable White UK households, showing effects of poverty and housing factors as mediators or interactors in contributing to predicted homelessness, based on EHS count regression models in Table 18

Case number	Case Description	ethmigind	predicted povind4	predicted hsgind4	interaction povethint	predicted hlessind	Risk Ratio vs White UK	Risk Ratio excl mediation	% of increment due ot mediation
0	Minimal Risk	0	0	0	0	0.093			
1	Average White Brit	0	0.55	0.57	0	0.127			
2	Average Black UK Discrim	2	0.84	0.93	1.68	0.186	1.47	1.16	66%
3	Younger White single renter London	0	1.26	2.42	0	0.313			
4	Younger Mixed single renter London	1	1.38	3.27	1.38	0.550	1.76	1.18	76%
5	Mid-aged White poorer, health prob, renter	0	1.45	1.5	0	0.299			
6	Mid-aged Black poorer, health prob, renter	1	1.52	1.69	1.52	0.398	1.33	1.21	36%
7	Adult White poorer, South, rural, renter	0	1.5	1.5	0	0.215			
8	Adult, Other, Mig, poorer, South, rural, renter	2	1.58	2.25	3.16	0.458	2.13	1.49	57%
9	Younger White single, poorer, London, renter	0	3	1.5	0	0.142			
10	Younger Black Disc single, poorer , London, renter	2	3.05	3.44	6.1	0.762	5.35	2.21	72%

Table 27: Vignettes comparing BAME households with otherwise comparable White UK households, showing effects of poverty and housing factors as mediators or interactors in contributing to predicted homelessness, based on PSE count regression models in Table 19

Case number	Case Description	ethmmigdisc	predicted currpov4	predicted renter	predicted hlessind8	Risk Ratio vs White UK	Risk Ratio excl mediation	% of increment due ot mediation
0	Min Risk	0	0.00	0.00	0.081			
1	Average White Brit	0	0.75	0.24	0.149			
2	Average Black UK Discrim	5	0.92	0.31	0.270	1.81	1.67	17.3%
3	Younger white single renter London	0	1.92	0.58	0.753			
4	Younger Mixed single renter London	3	2.16	0.71	1.174	1.56	1.36	35.7%
5	Mid-aged White poorer past, health prob, renter	0	1.45	0.36	0.321			
6	Mid-aged Black poorer past, health prob, renter	4	1.69	0.47	0.547	1.71	1.50	29.6%
7	Adult White poorer past, South, rural, renter	0	1.02	0.38	0.319			
8	Adult, Other, Mig, poorer past, South, rural, renter	4	1.19	0.48	0.531	1.67	1.50	40.3%
9	Younger White single, poorer past, crimrec, London, renter	0	3.08	0.90	2.557			
10	Younger Black Disc single, poorer past, crimrec, London, renter	5	3.75	1.00	5.345	2.09	1.67	38.5%

Table 28: Vignettes comparing BAME households with otherwise comparable White UK households, showing effects of poverty and housing factors as mediators contributing to predicted risk of being rehoused as homeless, based on UKHLS regression models in Table 20

Case number	Case description	Predicted poverty index 0-5	Pred priv rent & hsg need 0-8	Pred rehoused as homeless	Risk ratio vs White UK	Risk ratio excluding mediation	Proportion of effect mediated
0	Min Risk	0.000	0.000	0.01%			
1	Average White Brit	1.759	0.499	0.08%			
2	Average Black UK Discrim	2.182	1.034	0.32%	4.07	2.35	56%
3	Younger White single renter London	1.750	2.000	0.73%			
4	Younger Mixed single renter London	1.750	2.500	0.87%	1.19	1.00	100%
5	Mid-aged White poorer, health probs renter	2.330	2.000	0.28%			
6	Mid-aged Black poorer, health probs, renter	2.580	2.032	0.58%	2.09	1.67	39%
7	White fem, kids, poorer, reln b'down, South, rural, renter	3.000	2.500	14.42%			
8	Pakistani fem, kids, poorer, reln b'down, South, rural, renter	3.300	3.200	37.16%	2.58	1.83	48%
9	Younger White single, poorer, London, renter, poor cond	3.000	4.000	4.02%			
10	Younger Black, discrim, single, poorer, London, renter, poor cond	3.230	5.130	11.22%	2.79	1.63	65%

9: Outcomes of Statutory Homelessness Process

9.1 Disparities in Outcomes

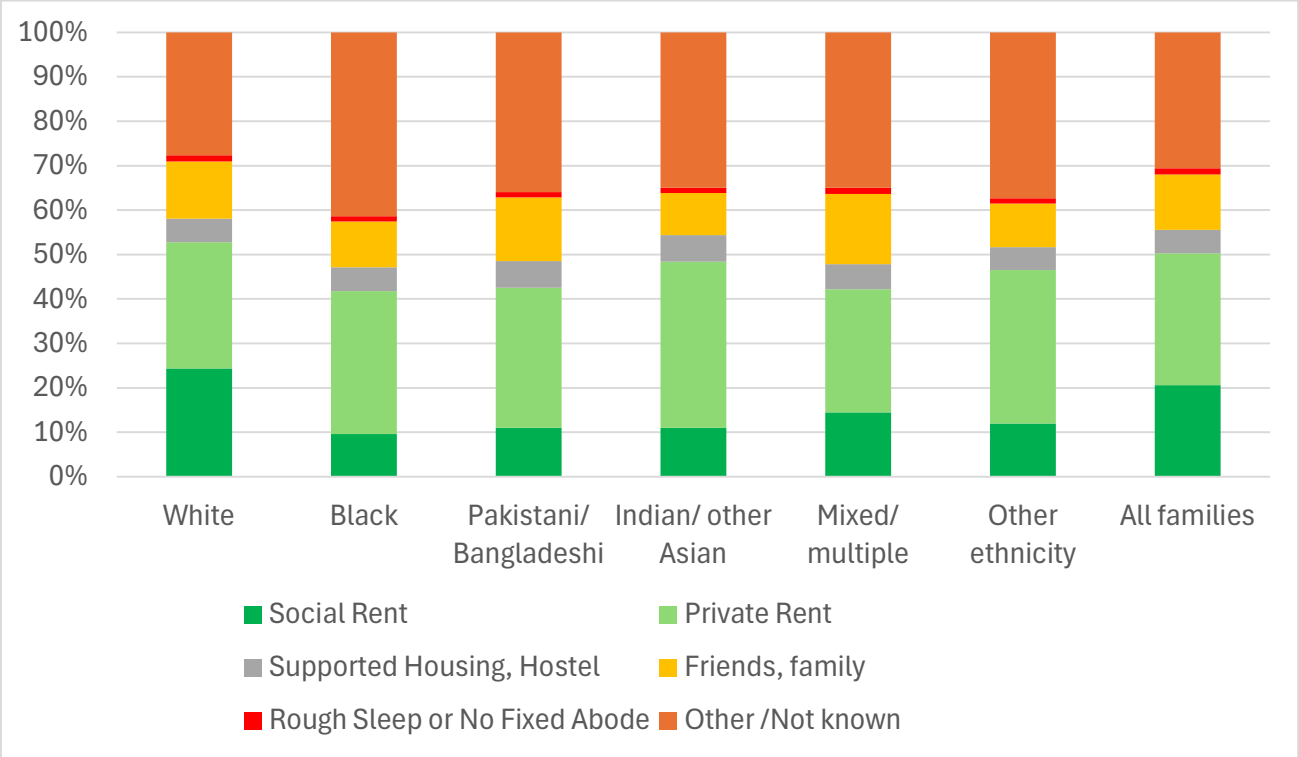
In this section we report on research carried out in the latter part of the overall programme, relying essentially upon the analysis of cohort outcome data from the HCLIC system for England accessed through the ONS Secure Research Service (SRS). First we look at descriptive data on the types of rehousing outcomes recorded across different ethnic groups, and also at the experiences of temporary accommodation (T A) by ethnicity, both whether T A was experienced and also for how long a period. These descriptive tables can also be broken down by broad region, as well as by the broad household type, distinguishing families from non-family households (i.e single person and childless adult households). The latter distinction is crucial given the fact that in England there is a clear difference in homelessness duties between families, who have 'Priority Need', and other households who generally do not[19]. Thus we would expect to find 'better' housing outcomes, particularly being rehoused in social rented housing or in private renting, being achieved by families, and also a greater likelihood of getting into TA. Of course, for families in particular, prolonged stays in TA, especially congregate or other 'unsuitable' forms of T A, are undesirable. For non-family households, being able to get TA may be interpreted as a more positive outcome.

It is important to underline, that although these analyses cover the large majority of households entering the statutory homelessness system in England in the three years 2019/20,2020/21 and 2021/22, including prevention, relief and main duty stages as applicable, they do not cover absolutely all of the cases because the data capture process applied a cutoff at a certain date. This date was on average two-and-a-half years from the date of application but could range between two and three years – if a case had not been closed at the cutoff it is not included in this dataset, which links background circumstances to outcomes. For these three cohorts, 86% of total applications in this period were included in the analysis. This means that, if the remaining 14% had a markedly different ethnic and/or outcome profile then our findings will not give a precise estimate of final outcomes, and the discrepancy may be greater in a region where homeless pressures are more extreme, leading to longer case durations (e.g. London).

Figure 13 shows the pattern of outcomes by ethnic groups for homeless family applicants who had a recorded outcome within 2-3 years of applying over the period 2019-2022. While it may be widely believed that most homeless applicants get access to social rented housing, this was far from being the case in this period, with only just over one-fifth achieving this within the 2-3 year period over which outcomes were recorded. It should be underlined that the denominator here is all applicants, including those 'at risk' of imminent homelessness who would normally be initially eligible for prevention efforts, as well as those already homeless. There was a striking ethnic disparity, with White applicants being substantially more likely to achieve this than any of the minoritised groups. In proportional terms, the disparity is somewhat less dramatic when we also include rehousing in the Private Rented Sector, PRS, but it should be noted that this would be a less secure and more expensive (potentially unaffordable) option, with many of these tenancies being only for the minimum 6 months.

[19] Some individuals or non-family households may have support needs which warrant a priority designation, but the bar to this tends to be set fairly high, especially in the most pressurised markets.

Figure 13: Accommodation outcomes at any stage for families applying as homeless or at risk of homelessness in England, by ethnicity, 2019-22.

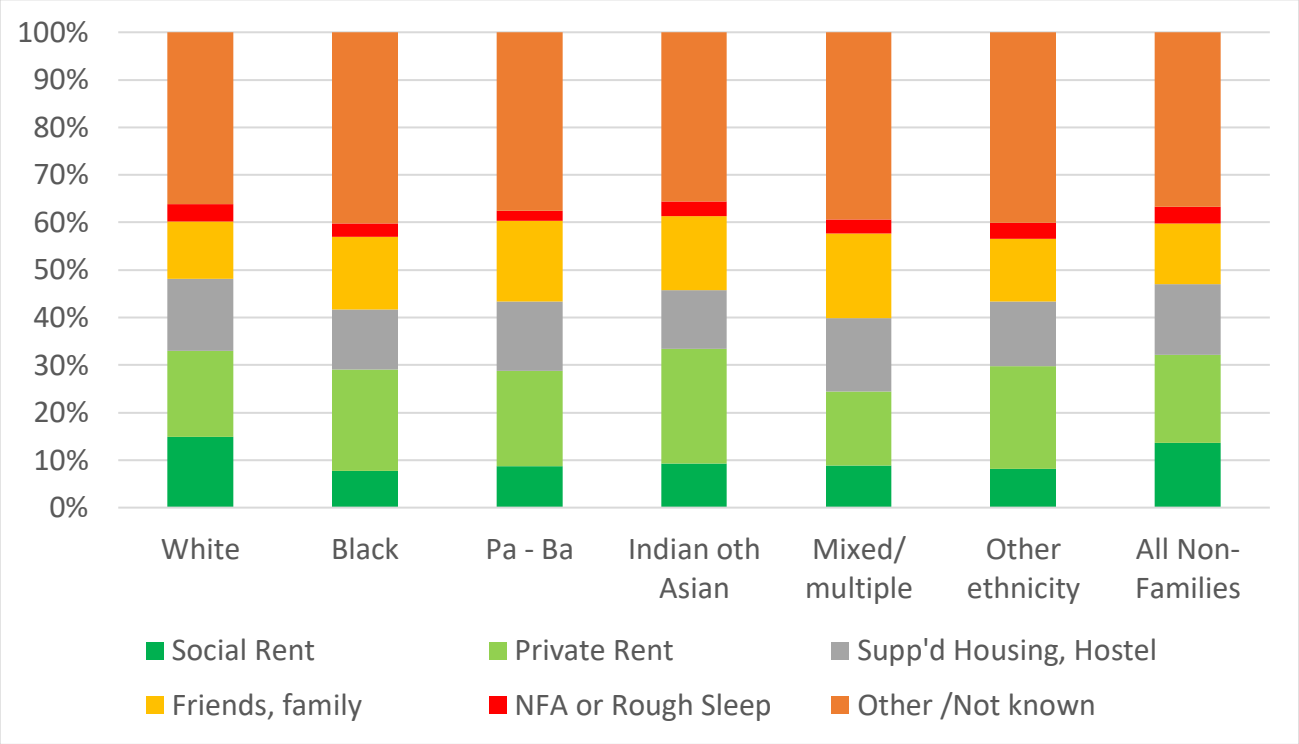


Source: Author's analysis of HCLIC cohort outcomes data for homeless applicants in England where case was closed with known outcome over period 2-3 years from application.

At the other end of the spectrum, a worryingly high proportion of all applicants (30%) saw their case closed with the outcome being 'Other' or 'Not Known'. Again, this unfavourable outcome was reported significantly more often by all of the minoritized groups, particularly Black-led households.

Figure 14 presents the equivalent analysis for non-family households, most of whom do not have the same level of 'main duty' rights (to T A and permanent rehousing) as nearly all families. As expected, the general level of access to social rented housing, or to that of private rented, is markedly lower across the board even than that shown above for families. A correspondingly much higher proportion (around 40%) had 'other' or 'not known' outcomes, and rather more ended up with friends/family or supported housing/hostel, or even rough sleeping. While some supported housing is good and appropriate, some may not be so described, following the so-called 'Exempt Accommodation Scandal', and hostels are part of 'core homelessness'. Again, all minoritised group had a markedly lower chance of getting into social renting from their homelessness application. The differences between ethnic groups in terms social or private rented outcomes were less stark, although only the Indian/Other Asian group had a rate as high as the White group.

Figure 14: Accommodation outcomes at any stage for non-family households applying as homeless or at risk of homelessness in England, by ethnicity, 2019-22.

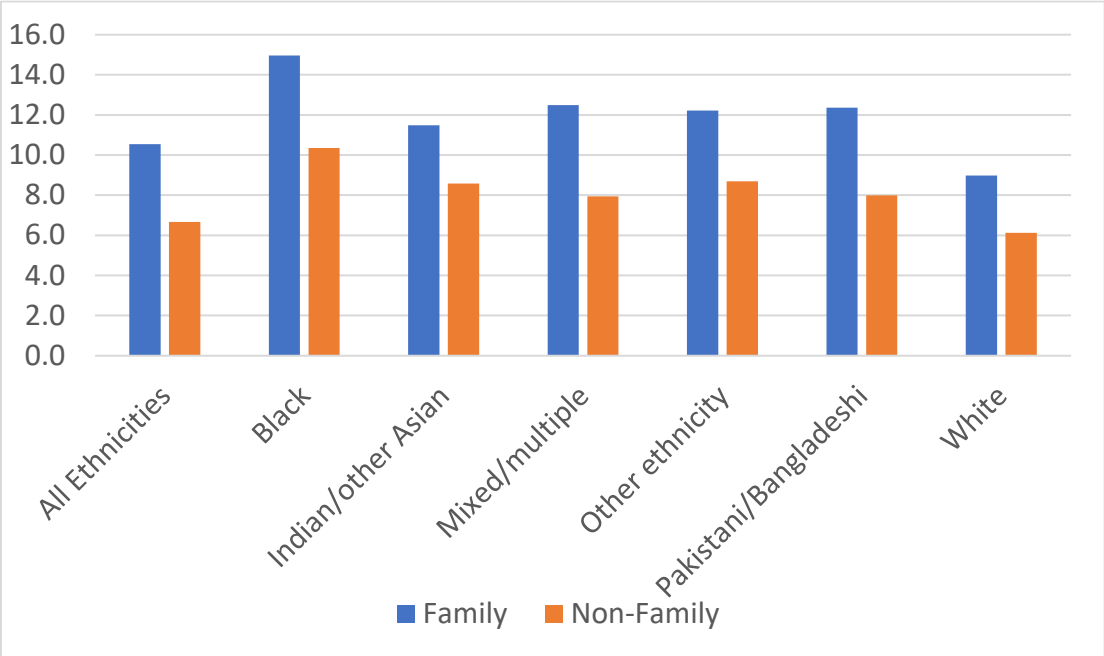


Source: as Table 13.

As explained above, only a minority of all homeless applicants experience going into temporary accommodation (TA). Since 2018 in England there has been a strong emphasis on prevention measures, which may ensure that existing or alternative accommodation is secured and that a crisis is averted before the household actually becomes homeless. In addition, households becoming homeless may be supported to stay in their existing accommodation, for example with their families, until more permanent rehousing or other solution can be found. However, for a substantial proportion of all cases, particularly those deemed to be in a priority need (primarily families with children, plus some with more serious support needs), where more permanent forms of rehousing cannot be arranged quickly, a period of time in temporary accommodation (TA) may be provided.

Figure 15 below shows the proportions of family and non-family homeless cases applying in England between 2019 and 2022 who spent some time in TA over the period. It can be seen that family homeless households were systematically more likely to spend time in TA than non-family, as expected given the role of priority need, although it is noteworthy that significant numbers of non-family cases were also placed in TA. It should also be noted that these absolute proportions are likely to be something of an underestimate, given the cutoff of between 2 and 3 years from date of application within this cohort data record., which may mean many who spent longer in TA are excluded from this dataset.

Figure 15: Proportions of family and non family homeless cases placed in temporary accommodation by ethnicity , England 2019-22 (percent of cohort with recorded outcome over 2-3 years).

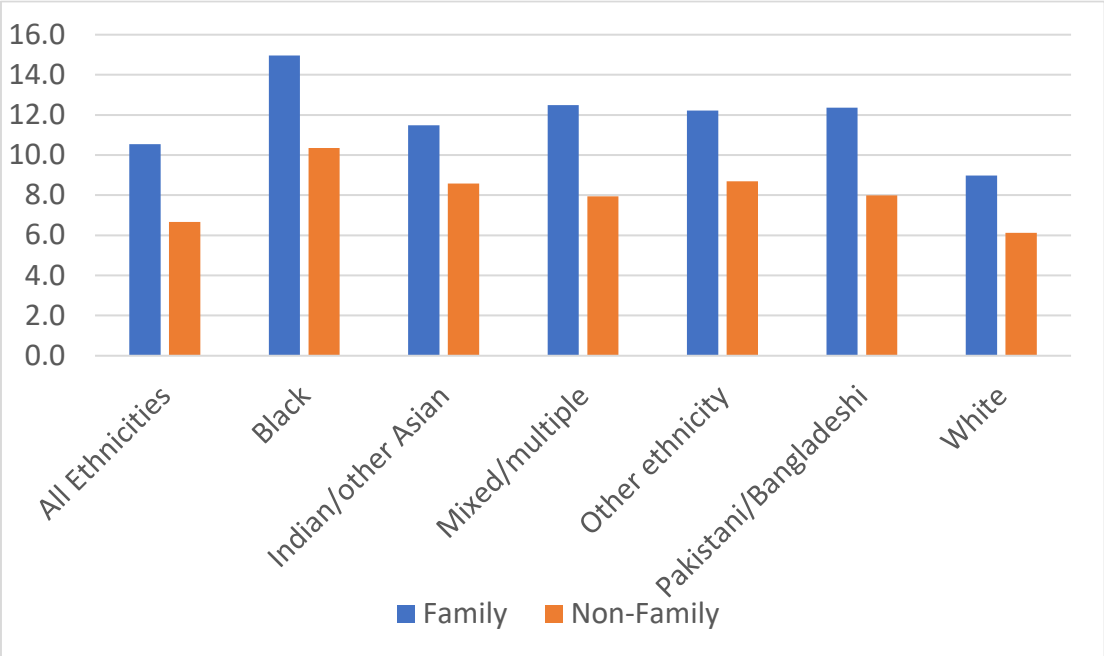


Source: As Table 13

Again, these data show marked disparities between ethnic minority and White groups in their chances of spending time in T A, with these proportions systematically higher for the minoritized groups within both family and non-family categories. The highest risk of TA experience was shown for the Black group. And the fact that this dataset excludes some cases with long durations to resolution may well mean that both the average duration and the ethnic disparities are understated.

Figure 16 summarizes the average duration of stay in months for homeless households in England by ethnicity, again distinguishing family and non-family cases. These figures may slightly underestimate the true final durations, given that it only covers households whose case was closed a recorded outcome (including 'other/not known') within a period of between 2 and 3 years from their date of application. The pattern is fairly shocking, in at least two senses. Firstly, families spend systematically longer in TA than non-family households, which may well be quite damaging for children. Secondly, the ethnic disparities here are very striking, with all the minoritised groups experiencing markedly long stays in TA. One important point to note, however, about this Figure is that the national picture may be affected by varying situations across the broad regions; for example, London has (a) very high proportions of ethnic minorities, (b) generally high levels and durations of TA, but (c) rather less differences between the ethnic groups in these durations. However, away from London, the durations are generally greater for the minoritised groups.

Figure 16: Average duration of stay in temporary accommodation by ethnicity by family vs non-family household, English homeless applicants with recorded outcome 2019-22 (months)



Source: As Table 13

9.2 Multi-level Modelling of Outcomes

A further stage of work has involved developing models to predict key outcomes within the cohort outcomes data for statutory homeless applicants in England over the period 2019-22. As with the earlier models of homelessness risk reported earlier, this uses a mixture of logistic regression and OLS linear regression to predict variations in the indicators discussed in the preceding section – key rehousing outcomes, risk of placement in T A and duration of stay in T A. The models are presented in summary form in the Tables to facilitate comparison, and a common set of predictors are tested within each type of outcome, although variables found to be not significant are omitted from the models. The common table format should facilitate comparison between models, to see which variables are relatively more or less important for the different outcomes considered. We characterise these models, again, as 'multi-level' because they involve sets of predictors which are attributes of individual households (normally shown as the block at the top) and other predictors which are attributes of the local authority area where the cases are situated, shown in the lower part of the table (while eschewing some of the technical jargon sometimes associated with multi-level modelling).

Table 29 compares three logistic regression models for the risk (technically, the log of the odds ratio) of a homeless household being rehoused in social rented housing, or in either social or private rented housing, at the end of their journey as a homeless case. The two models presented for the wider case of rehousing in social or private rent differ by including four additional variables, one a dummy for a region of particular interest (West Midlands Combined Authority) and the others interacting Black ethnicity with particular individual household attributes – being a migrant, having complex need, having a family or friends no longer willing/able to accommodate. This variant model is included to illustrate he potential for somewhat more subtle hypotheses to be explored within this modelling framework, rather

than to offer a systematic, comprehensive test of all such possible interactions. The first block of individual level variables are all 'dummy' variables (taking values 1=yes, 0=no), whereas most variables below the line are area level attributes expressed as continuous variables, mainly percentages but in a few cases £ pw or ratios. Three variables at the bottom of the area level variables are area attributes expressed in dummy (1/0) form (regions or locality types), while the three additional interaction terms at the bottom are also individual level dummies.

Table 29: Multi-level logistic regression models for key rehousing outcomes for statutory homeless applicants in England, 2019-2022

			Got Social Rent		Got Rehoused		Got Rehoused 2	
Variable description	Varname	Dummy	Coeffic	Signif p	Coeffic	Signif p	Coeffic	Signif p
Black ethnicity	BlackD	Y	-0.151	***	-0.161	***	-0.050	***
Asian ethnicity	AsianD	Y	-0.239	***	-0.054	***	-0.054	***
Mixed ethnicity	MixedD	Y	-0.158	***	-0.192	***	-0.182	***
Other ethnicity	OtherD	Y	-0.038	***			-0.112	***
Homeless born o/s	HLMigrant	Y	-0.323	***	-0.091	***	-0.057	***
Homeless female hrp	HLFemale	Y	0.414	***	0.332	***	0.334	***
Single homeless	HLSingle	Y	-0.429	***	-0.755	***	-0.756	***
Lone parent homeless	HLLonPar	Y	-0.032	***	-0.216	***	-0.215	***
Young homeless (<25)	HLYoung	Y	-0.250	***	-0.441	***	-0.443	***
Has 3+ support needs	SuppNeed3pl	Y	-0.485	***	-0.615	***	-0.622	***
Lost private rental	LostPR	Y	-0.588	***	0.204	***	0.205	***
Family/frinds not willing/able to acc	FFNLWA	Y	-0.409	***	-0.687	***	-0.668	***
Relationship breakdown	RelBdown	Y	-0.146	***	-0.398	***	-0.396	***
Unemployment rate %	punem		-0.148	***	-0.051	***	-0.033	***
Benefit cap %	pcbencap		-0.920	***	0.327	***	0.362	***
Child poverty rate AHC %	ppoorchld		-0.026	***	-0.021	***	-0.019	***
Rent over LHA £pw	exrent2		0.005	***				
Affordability ratio (PR)	affrat1		-2.575	***	-1.483	***	-1.429	***
Social lets % hshld	pslets		0.085	***	-0.007	***		
Private renting % of hhd	ppr		-0.046	***	0.005	***	0.001	*
Hsg vacancy rate	pvac		0.138	***	0.070	***	0.063	***
General destitution rate%	pdestgen		3.184	***	0.412	***	0.345	***
Sparsity (ha/popn)	laspars		0.188	***	0.203	***	0.22	***
London	londdum	Y	0.338	***	0.216	***	0.195	***
Core cities	BECent	Y	-0.043	***	-0.248	***	-0.213	***
West Midlands Met area	wmddad	Y					-0.221	***
Black migrant	BlackMig	Y					-0.189	***
Black with complex needs	BlackCN	Y					0.137	***
Black, family not willing	BlackFFNWLA	Y					-0.212	***
Constant	Constant		0.038		0.973	***	0.954	***
Overall model statistics	Mean outcome		0.158		0.385		0.385	
	Chi Sq		52382	***	73595	***	74057	***
Nagekerke	Pseudo R-sq		0.115		0.126		0.127	
	2- Log Likelihood		608255		935611		935149	

Correct predictions	Overall	99.9%	84.2%	84.2%
	Actual positives	0.3%	37.7%	37.8%
	N cases	756836	756836	756836

Source: Author's analysis of three annual cohorts of HCLIC homeless applicant data for cases with a known outcome within 2-3 years of application, with attached local authority level census, demographic, social and market data.

The logistic regression coefficients shown measure the effect of one unit difference in the explanatory variable (named in the left hand column) on the log (ln) of the odds ratio of the outcome in question (p x (1-p)). All variables included in the Table are significant, nearly all at the 1% level, with one variable significant at the marginal 10% level included (because it was significant in the other two models).

The first model focusses on chance of rehousing in social rented housing, arguably the most desirable outcome in terms of tenure security, standards and rent levels, which is of course markedly lower than the chance of rehousing in social or private rented (where the latter outcome is arguably more ambiguous in terms of quality, security or affordability). Not untypically, for outcomes with a lower probability, some of the statistics on overall model performance look less impressive, particularly the 'percentage of actual positive predictions', where this is based on predicted probability of over 0.5.

There is a lot of information in these models, much of it in line with expectations, or explicable. The first key conclusion is that the main minoritised groups do experience a consistently higher risk of not being rehoused from homelessness, within social or private renting, even when controlling for a wide range of other individual and area factors. For social renting chances, Asian households appear to be the most disadvantaged group, whereas for social or private renting, it is Mixed ethnicity which seems most disadvantaged. Being a migrant further reinforces lower chances of rehousing, particularly into social renting. Other demographic groups who are generally disadvantaged in rehousing chances include singles, young and those with complex support needs, those with family/friends no longer willing/able to accommodate, and those experiencing relationship breakdown (the latter may change with more focus on DVA recently, although this category may also include perpetrators). The apparently favourable situation for female applicants needs to be balanced with the negative coefficients for lone parents and relationship breakdown. The complex need cases could well be seen to need scarce supported housing, pending the greater rollout of Housing First.

Moving on to the area-based factors, the marginal effects of unemployment are common in recent homeless modelling, and child poverty itself does not seem to strongly impact these outcomes. There are strong but contradictory effects associated with the incidence of the Benefit Cap; this might be a strong deterrent to social sector rehousing in the most pressured high cost areas like London, while the more positive rehousing outcomes into private renting may be associated with movement out of area for affected households. Certainly, general PRS unaffordability has a strongly negative impact on the chances of rehousing in any form (also strongly associated with London). More social lettings is as expected associated with a greater chance of social rehousing, while higher housing vacancies is consistently associated with better rehousing chances. There is a strong positive association with the general destitution rate (predominantly among UK born population), a key measure of the more severe end of poverty, suggesting that in these areas rehousing opportunities are greater. Rural areas show a consistently slightly more favourable position, as does London when controlling for all of the other variables in the model, whereas core cities (and West Midlands CA) show poorer rehousing outcomes.

Finally, the three interaction terms at the bottom of the table show that Black migrants and Black applicants where the family/friends are no longer willing/able to accommodate were (even) less likely to get a rehousing outcome, while Black applicants with complex need were somewhat more likely to get one.

The following Table 30 applies similar models to that shown in the last two columns of Table 29, but applied separately to family and non-family households (the models are the same except that one variable is changed, from lone parent to single household). Given that virtually all family households would have priority need and be potentially eligible for the main duty, we would expect a more consistent, predictable pattern of outcomes than in the case of non-family households, most of whom would not be in that position. In other words, we would expect the former model to have a better fit than the latter model, and that is indeed the case in Table 18, as shown by key summary statistics (Nagelkerke pseudo-R-square, and percentage of correct predictions), and by the fact that all variables included in the first model were significant, whereas this was not the case for the second model.

All minoritised ethnic families had a lower chance of rehousing than White families, controlling for all other variables in the model, whereas for non-family households it was only Mixed and Other Ethnicity households which were significantly disadvantaged in this respect. A similar comment applies to homeless migrants (born overseas), only significantly negative for families. Young singles and young households generally appear to be noticeable more disadvantaged than the family groups, as do those with multiple support needs. The impacts of other individual level factors appear similar.

Looking at the area variables, unemployment and general destitution were not significant for non-family homeless chance of rehousing. The size of the private rented sectors seemed to be positive for families but negative for non-family households' chances. The West Midlands CA seemed to be particularly negative for family homeless chances, but slightly positive for non-family homeless. All the interactions of Black with migrancy, complex needs or family/friends unwilling were negative for families, but the complex need-Black combination seemed to be somewhat more positive for rehousing outcome.

Table 30: Multi-level logistic regression models for rehousing in social or private renting for statutory homeless families and non-family households in England, 2019-2022

Variable description	Varname	Family Rehoused Coeff B	Signif P	Non-Family Rehoused Coeff B	Signif P
Black ethnicity	BlackD	-0.089	***	-0.026	
Asian ethnicity	AsianD	-0.093	***	-0.023	
Mixed ethnicity	MixedD	-0.138	***	-0.206	***
Other ethnicity	OtherD	-0.148	***	-0.115	***
Homeless born o/s	HLMigrant	-0.161	***	0.014	
Homeless female hrp	HLFemale	0.181	***	0.371	***
Lone parent/ single homeless	HLLonPar/ HLSingle	-0.219	***	-0.640	***
Young homeless (<25)	HLYoung	-0.177	***	-0.569	***
Has 3+ support needs	SuppNeed3pl	-0.284	***	-0.664	***
Lost private rental	LostPR	0.176	***	0.216	***
Family/frinds not willing/able to acc	FFNLWA	-0.948	***	-0.542	***
Relationship breakdown	RelBdown	-0.644	***	-0.263	***
Unemployment rate %	punem	-0.074	***	-0.003	
Benefit cap %	pcbencap	0.501	***	0.306	***
Child poverty rate AHC %	ppoorchld	-0.023	***	-0.019	***
Affordability ratio (PR)	affrat1	-2.312	***	-0.953	***
Private renting % of hhd	ppr	0.013	***	-0.006	***
Hsg vacancy rate	pvac	0.093	***	0.049	***
General destitution rate%	pdestgen	0.934	***	0.032	
Sparsity (ha/popn)	laspars	0.206	***	0.242	***
London	londdum	0.243	***	0.180	***
Core cities	BECent	-0.140	***	-0.247	***
West Midlands Met area	wmddad	-0.605	***	0.058	***
Black migrant	BlackMig	-0.206	***	-0.101	***
Black with complex needs	BlackCN	-0.184	**	0.141	***
Black, family not willing	BlackFFNWLA	-0.229	***	-0.183	***
Constant	Constant	1.238	***	0.760	***
Overall model statistics	Mean	0.505		0.326	
	Chi Sq	20692	***	35863	***
Nagekerke	Pseudo R-sq	0.106		0.095	
	2- Log Like-lihood	325527		604611	
Correct predictions	Overall	65.4%		69.1%	
	Actual positives	61.8%		16.4%	
	N cases	249769		507067	

Source: As Table 29.

The next set of models summarised in Table 31 look at the binary outcome of whether households had any time in temporary accommodation, this time distinguishing family and non-family households. These models have a less good fit to the data than those just described, and again the non-family TA model is less well defined than the family TA model.

Table 31: Multi-level logistic regression models for whether statutory homeless applicants in England had time in temporary accommodation, by whether family or non-family households, 2019-2022

		Family T A		Non-Family T A	
Variable description	Varname	Coeff B	Signif P	Coeff B	Signif P
Black ethnicity	BlackD	0.286	***	-0.215	***
Asian ethnicity	AsianD	0.175	***	0.014	
Mixed ethnicity	MixedD	0.146	***	-0.020	
Other ethnicity	OtherD	0.280	***	-0.031	
Homeless born o/s	HLMigrant	0.420	***	-0.111	***
Homeless female hrp	HLFemale	-0.148	***	-0.055	***
Lone parent/ Single homeless	HLLonPar/ HLSingle	-0.028	**	-0.059	***
Young homeless (<25)	HLYoung	0.049	***	-0.077	***
Has 3+ support needs	SuppNeed3pl	0.321	***	0.733	***
Lost private rental	LostPR	0.324	***	0.047	***
Family/frinds not willing/able to accom	FFNLWA	0.532	***	-0.023	**
Relationship breakdown	RelBdown	0.547	***	0.297	***
Unemployment rate %	punem	-0.040	***	-0.024	***
Benefit cap %	pcbencap	-0.481	***	0.040	
Child poverty rate AHC %	ppoorchld	0.013	***	0.014	***
Affordability ratio (PR)	affrat1	1.785	***	0.412	***
Private renting % of hhd	ppr	-0.001		0.011	***
Hsg vacancy rate	pvac	-0.017	**	0.115	***
General destitution rate%	pdestgen	-0.698	***	-2.652	***
Sparsity (ha/popn)	laspars	-0.431	***	-0.324	***
London	londdum	-0.338	***	0.074	***
Core cities	BECent	-0.105	***	0.064	***
West Midlands Met area	wmddad	0.600	***	-0.071	***
Black migrant	BlackMig	0.342	***	0.253	***
Black with complex needs	BlackCN	0.277	***	0.129	***
Black, family not willing	BlackFFNWLA	-0.051		0.043	
Constant	Constant	-1.477	***	-1.136	***
Overall model statistics	Mean	0.312		0.228	
	Chi Sq	10896	***	14376	***
Nagekerke	Pseudo R-sq	0.060		0.040	
	2- Log Like-lihood	298424		529669	
Correct predictions	Overall	69.2%		77.2%	

Actual positives	7.9%	0.2%
N cases	249769	507067

Source: As Table 29.

As expected, on the basis of the descriptive data, all the minoritised groups of family households have a higher chance of experiencing TA, with somewhat stronger effects for Black and Other groups and also for Black households who are migrants or have complex needs. By contrast, for non-family stays in TA there is no significant effect for three of the four minoritised groups, while Black non-family households are less likely to experience TA, allowing for all other variables (but see interaction effects below). Homeless migrant families are significantly more likely to have time in TA, but the opposite is the case for non-family migrants.

Female, single and lone parent homeless have somewhat lower odds of experiencing TA, as do young non-family households. Multiple support needs are associated with a higher chance of experiencing TA, especially for non-family households (reflecting that some of these households would get priority need status). All of the three key reasons for homelessness (loss of PR tenancy, family/friends no longer willing/able, and relationship breakdown are positively associated with T A spells for families, but for non families the effects ae weaker or (in the second case) negative.

Among the area effects, areas with more benefit cap cases seem to see fewer families going into TA., while affordability ratios are strongly associated with T A, especially for families. In general, the effects for non-families are often different from those for families (in about half of cases). Severe poverty (destitution) seems to be strongly negatively related to TA use, while rurality continues to have a moderate negative effect. Slightly surprisingly, London and core cities have lower use of TA for families, allowing for all other factors, although the West Midlands CA is an exception.

Lastly, the illustrated interaction effects with Black ethnicity show that Black migrants and Black households with complex needs are more likely to have spells in T A, whether family or not.

The final analysis covered in this section looks at the length of time (in months) spent in TA, again based on households whose homeless episode is recorded as having been completed within the 2-3 year period of the application.. This will omit some cases with longer spells remaining in TA. Because duration of stay is a continuous variable we can use ordinary linear least squares regression to model this variable, and again we fit models separately for family and non-family for reasons discussed above. The resulting models are summarized in Table 32. In this case the coefficients measure the effect of one unit increase in the relevant variable on the number of months spent in TA, allowing for the effect of other variables. So, for example, a Black-led household accommodated in TA would spend 1.24 additional months in TA, with a Mixed ethnicity-led household spending slightly less time (0.98 months), allowing for all other variables in the model. Comparing these numbers with the data underlying Figure 16 shows that these ethnicity effects derived from this model are quite a lot smaller than those shown in the simple descriptive analysis , c.1 month vs c.4 months. However, while this does suggest the high TA durations for these minoritised groups may be substantially related to other characteristics correlated with their ethnicity, for example being located in London, being a migrant, living in and area with high rent-income ratios, and so forth, the very last variable in the model reminds us that some of these factors may interact (in this instance, Black ethnicity with migrant status), and that we have not tested exhaustively for all such interaction effects.

Table 32: Multi-level OLS regression models for duration of statutory homeless applicants stays in temporary accommodation, by whether family or non-family households, 2019-2022

		Family T A		Non-Family T A	
Variable description	Varname	Coeff B	Signif P	Coeff B	Signif P
	(Constant)	5.546	***	4.532	***
Black ethnicity	BlackD	1.240	***	0.368	***
Mixed ethnicity	MixedD	0.985	***	0.028	
Homeless born o/s	HLMigrant	0.293	***	0.390	***
Homeless female hrp	HLFemale	-0.116		0.749	***
Single homeless				-1.784	***
Young homeless (<25)	HLYoung	-1.504	***	-0.893	***
Relationship breakdown	RelBdown	-0.949	***	-0.391	***
Unemployment rate %	punem	0.987	***	-0.029	
Child poverty rate AHC %	ppoorchld	0.223	***	0.120	<.001
Excess rent over LHA	exrent2	-0.019	***	-0.025	***
Affordability ratio (PR)	affrat1	19.230	***	14.300	***
Private renting % of hhd	pslets	-0.096	*	0.112	***
Private renting % of hhd	ppr	-0.095	***	-0.032	***
Hsg vacancy rate	pvac	-1.343	***	-1.053	***
General destitution rate%	pdestgen	-16.741	***	-2.549	***
London	londdum	2.761	***	2.411	***
Core cities	BECent	0.799	***	-0.248	***
Black migrant	BlackMig	0.698	***	0.757	***
Model summary					
Adjusted R Square		0.174		0.106	
Std Err Estimate		8.88		8.060	
F Ratio		964.1		759.600	
Signif F		<.000		<.000	
N of cases		77462		115450	

Source: As Table 29.

The adverse effect of being Black on duration in TA seems to be more pronounced for families, while the effect of mixed ethnicity seems to be confined to the family groups. At the same time, the added effect of being both Black and a migrant, shown at the bottom of the table, seems to increase durations in T A for both families and other households. This is all consistent with other evidence within the broader research programme.

Single, young homeless and relationship breakdown cases seem to spend less time in TA. In the former case this may reflect their low prospect of eventual rehousing. While area poverty and unaffordability are associated with longer waits in TA., the small effect of excess rent over LHA is not as expected. Measures of relevant housing supply (private renting and housing vacancies) have the expected effect of shortening stays, although this is only marginally the case for families where social lettings are concerned. As with other models reported in this section, areas with more general destitution (severe poverty) seem to have shorter durations in TA. However, in London, and for families in core cities also, durations in T A are significantly longer, allowing for all of the above.

10. Conclusions

There are a substantial number of sources which can be drawn upon to illuminate the relative risks of experiencing homelessness in different forms facing different broad ethnic groups, typically based on a 4 or 5-way classification. This allows a degree of triangulation or confirmation of some recurrent patterns.

There are different ways of defining and delineating homelessness, but we find that in the UK context the framework of four broad concepts – core homelessness, statutory homelessness, hidden homelessness and wider homelessness risks – with associated sub-categories is helpful.

While the initial research did not examine intersections between related classifications including migrant experience, country of birth, religion, language or citizenship, as the research progressed more ways of taking account of these other factors and the ways they might interact with ethnicity have been explored to varying extents. We have generally assumed that the primary focus should be on ethnicity as conventionally defined, but these other dimensions may turn out to be significant in fully understanding homelessness experiences.

It is abundantly clear from across the body of work covered in this report and its associated publications that there are large disparities in the risk or experience of homelessness between different ethnic groups in UK.

There is a fair degree of consensus across the data sets examined in Section 5 that some BAME groups experience a disproportionate risk of homelessness. This is notably the case for the broad Black group, and also to a considerable degree for the Mixed and 'Other' ethnic groups. However, for the large Asian group (and its main sub-components), this is *not* generally the case. Rather than core or statutory homelessness, for the Asian group a pattern of experiencing situations of housing need and heightened risk of homelessness, whether as concealed, overcrowded or sharing households, is much more common.

Slightly finer breakdowns of ethnicity for England show that overall 'ever homeless' was lower for Indian and Chinese than for White households, while Pakistani/Bangladeshi and Other Asian were significantly higher than the White group.

The disparities are particularly apparent in the statutory homelessness system, where Black households are 3.6 times more likely than White to apply across England, rising to 5.2 times more likely in London. For Mixed and Other groups these ratios are around 2.3 and 3.4 respectively, whereas for Asian they are 1.1 and 1.6. It seems that in the pressured London housing market which many BAME households face, their relative risks of homelessness are even higher.

While nearly a third of White households under-occupied their housing in 2011, rates of overcrowding were exceptionally high across England for both Asian and Black, as well as Other ethnic groups. Some of the adverse health consequences of that have become apparent through the Covid pandemic.

While we have not done a systematic longer-period assessment, there are some indications that levels of some housing need/homelessness risk indicators have fallen somewhat for BAME groups relative to White households over time, while still remaining adverse

Migration continues to play a strong role in the backgrounds of most BAME groups. Majorities of all of the main groups of adults in 2020, apart from 'Mixed', were born overseas. However, it is the 'Other' group which contains the highest proportion born overseas and may be characterised as more dominated by relatively recent arrivals from a wide variety of origins, with Middle East/North Africa the most common.

It is much more difficult to give a clear account of what is causing these ethnic disparities, through what pathways of intervening variables over the life course. We can approach an estimate of the influence of these factors by identifying, measuring and modelling the effects of as many other interrelated factors as we can get hold of, and looking to see what is left over. However, this may shift the focus back to the ways racial discrimination may have affected people's ability to access economic and other opportunities earlier in their lives.

As an initial step towards understanding some of the drivers of homelessness risk and how these play out differently for different ethnic groups, we have conducted some statistical modelling work on four survey datasets, essentially seeking to establish predictive functions for reported experiences of homelessness (see Chapter 6). Three of these datasets are essentially cross-sectional, although one of these includes significant variables capturing past economic and other difficulties, while the other is a longitudinal cohort study. These analyses enable us to attribute parts of the differential homelessness experience of different minoritized groups to different groups of factors, including demography, employment, poverty, housing, health and life events, and ethnicity itself alongside discrimination and migrancy. To varying degrees these analyses enable some reference back to factors experience at different life stages in the past.

The survey-based models mainly utilise logistic regression to predict the odds of ever experiencing homelessness as a function of the range of variables falling into the broad categories of demographic, employment/labour market, housing situation/market, and poverty, with an additional category of health and life events in one survey. For one birth cohort study, the variables are grouped more by life-stage, While there is some interest in whether and to what extent ethnic flags have a significant independent influence on homeless outcomes (this is not always the case), the main interest is in what the relative roles are of the different groups of variables in explaining the outcomes for each main ethnic group.

The broad pattern of results suggests that the markedly adverse homeless outcomes for Black (and to a somewhat lesser degree Mixed and Other) groups are accounted for to some extent by demography, not much by employment, to a large extent by housing but also to some extent by poverty. Even after allowing for all of these effects, ethnic related factors do play a role. Where the Asian group can be subdivided, the Indian group show relatively slight effects from these factors and achieve a more favourable actual vs predicted outturn (as do Chinese), whereas for the Pakistani/Bangladeshi and other Asian groups the housing and poverty effects are more apparent and in the former case the actual outcome is worse than predicted. The results for Scotland show a rather more emphasis on poverty and a bit less on housing. The PSE results show moderate additional impacts from health and life events and a somewhat bigger role for employment/labour market in disadvantaging Black and Mixed groups. It differs from EHS is showing a more favourable picture for the Pakistani/Bangladeshi group.

The BCS cohort study is different in focus (second generation groups' experience in 1985-2000 period) and in the temporally structured grouping of influencing factors. It appears to show independent effects from Other, Mixed and (probably) Black ethnicities within the demographic background. Childhood poverty affected all groups to a similar degree. For

Black people, adverse teenage and school experiences were significantly greater, compounded by economic difficulties in early adult life and adverse family/life events in the twenties. The Mixed groups showed strong similarities in this pattern, whereas these were less apparent for the Other group. The Asian group showed generally small effects from all of the groups/stages of explanation, ending up with an average predicted incidence of homeless but an actual incidence which fell significantly below that.

We have also (in Section 7) conducted statistical modelling on data at local authority level across England, to understand better the drivers of homelessness applications by broad ethnic groups and highlighting unexplained regional and local variations. The statutory homelessness data in England, particularly following implementation of the Homelessness Reduction Act 2017, lends itself to analysis at the level of local authorities. We use this opportunity by combining this with estimated (and later actual Census) resident ethnic population at local authority level to look at homelessness rates for broad ethnic groups across English local authorities, with a particular focus on variations at broad regional level and across locality types. This shows that there are substantial variations in the relative risks of homelessness facing different ethnic groups across different regions and types of area.

Modelling work in this area was enhanced later in the life of the project by (a) incorporating data from the 2021 Census in England and Wales, including up to date ethnic populations and more complex bivariate indicators at LA level; (b) working within the ONS Secure Research Service on administrative homelessness data in the form of micro data on three annual cohorts of homeless applicants. This enabled essentially a form of multi-level modelling of homelessness risk for each of the main ethnic groups, highlighting differences in the role of different factors for different groups.

Given the clear relevance of indirect effects of ethnicity, some of which act at different life stages, there is clearly significant need and scope for what is termed ‘structural modelling’, seeking to clarify likely causal effects, both direct and indirect. The technique of ‘mediation’ analysis sits within this and we have begun to explore this, as mentioned above. This work has been developed further to overcome some technical issues, and applications to three major datasets are exemplified. This work is promising, and demonstrates that some indirect effects, particularly mediated through poverty and housing circumstances, appear to add significantly to the explanatory story. At the same time this modelling underlines the importance of different demographic profiles and differing health status in also accounting for part of the differences observed in homelessness.

More sophisticated versions of the models designed to explore mediation in three datasets suggest wide variations in the relative risk of homelessness facing BAME people in Britain, including some cases of extremely high risk relative to White UK-born people with otherwise similar characteristics. Indirect effects often account for a medium or high proportion of the total enhanced risk for BAME people. These work particularly through poverty and housing circumstances (rental tenure, and existing housing needs).

The latter stages of the research allowed more of a focus on the outcomes of homeless episodes, drawing primarily on the micro cohort outcomes data for England based on the HCLIC data system, linked again to local authority contextual data. Descriptive data from this source, accessed via the ONS Secure Research Service, revealed a striking picture of outcomes from the statutory homelessness system in England. The overall outcomes included considerable success in prevention but also quite a lot of cases with no recorded outcome. We did find , quite striking ethnic disparities in outcomes. Black and other minoritised groups had markedly lower chances of being rehoused into social rented housing, and generally poorer chances of getting any form of rehousing, with a large

proportion finishing their journey through the system with an outcome of ‘Other’ or ‘Not Known. Further, the minoritized groups had a systematically higher chance of being placed into TA, and when they did they had to spend significantly longer in it. These patterns applied across family and non-family groups, whose rights under the English regime differ considerably.

We again applied the multilevel modelling approach to analysing these outcomes, trying to identify the factors lying behind these outcomes. Again, the picture emerging is that, while ethnicity itself typically was associated with worse outcomes, after allowing for all other significant factors included in the models, the direct ethnicity effect was clearly only part of the story. Other important factors which could and sometimes clearly did affect the adverse outcomes for minoritized groups included their migration status, their concentration in regions of worse housing pressure and affordability problems, their experience of particular housing-related circumstances triggering homelessness, and more vulnerable demographic groups (young, single, lone parent).. Minoritised group families seemed to be more systematically disadvantaged in terms of getting rehoused, whereas the picture for non-family households was more mixed.

References

Blalock, H. (1963?) *Causal Inferences in Nonexperimental Research.* [add place, published, confirm date]

Bramley, G. (2017) *Homelessness Projections: Core homelessness in Great Britain. Summary Report*. London: CRISIS https://www.crisis.org.uk/media/237582/crisis_homelessness_projections_2017.pdf

Bramley, G. (2021a) *Research on Core Homelessness and Homeless Projections: Technical Report on new baseline estimates and scenario projections.* Edinburgh: Heriot-Watt University. CoreHomelessnessProjections2020_TechReport_final.pdf (hw.ac.uk)

Bramley, G. (2021b) *People in Housing Need*. London: National Housing Federation.

Bramley, G. and Fitzpatrick, S. (2018) 'Homelessness in the UK: who is most at risk?', *Housing Studies*. 33(1): 96-116

Bramley, G., Sosenko, F., Wood, J. with Williams, J. & Matthews, P. (2018) *Scoping project to investigate the alternatives for including non-household populations in estimates of personal well-being and destitution*, Interim Research Report to Joseph Rowntree Foundation and ONS. Edinburgh: Heriot-Watt University. https://researchportal.hw.ac.uk/en/publications/scoping-project-to-investigate-the-alternatives-for-including-non

Busch-Geertsema, V., Culhane, D. & Fitzpatrick, S. (2016) 'Developing a global framework for conceptualising and measuring homelessness', *Habitat International*, 55, 124-132. https://www.sciencedirect.com/science/article/pii/S0197397515300023?via=ihub

Cunningham, S. ((2021) *Causal Inference: the Mixtape.* NewHaven CA and London: Yale University Press.

Fitzpatrick, S. & Davies, L. (2020) 'The 'Ideal' Homelessness Law: Balancing 'Right Centred' and 'Professional Centred' Social Policy', forthcoming in *Journal of Social Welfare and Family Law*.

Fitzpatrick, S., Watts, B., Pawson, H., Bramley, G., Wood, J., Stephens, M. & Blenkinsopp, J. (2021) *The Homelessness Monitor: England 2021*, London: Crisis. www.crisis.org.uk

Gervais, M.C. & Rehman, H. (2005) *Causes of Homelessness Amongst Ethnic Minority Populations* Report to ODPM. 80373-ODPM-Research-f1 (ethnos.co.uk)

Hamilton, M. & Hayes, B. (2020) 'Past experiences of housing difficulties in the UK: 2018.' Office for National Statistics. 22 October 2018

Henderson & Karn, 1984; 'Race, Class and the Allocation of Public Housing in Britain'. *Urban Studies* 21 (2): 115–28.

Jeffers & Hoggett, (1995) Like counting deckchairs on the Titanic: A study of institutional racism and housing allocations in Haringey and Lambeth', *Housing Studies*, 10:3, 325-344.

MacKinnon, D.P. (2008) *Introduction to Statistical Mediation Analysis*. London: Taylor & Francis

Ministry of Housing, Communities and Local Government (2020) *English Housing Survey 2018-19: 'Sofa surfing' and 'concealed households'.* Factsheet.

National Audit Office (2021) *Investigation into the housing of roughsleepers during the COVID-19 pandemic*. Report on Ministry of Housing, Communities and Local Government by the Comptroller and Auditor General. Session 2019-20. 14 January 2020. HC1075.

O'Flaherty, B. (2019) Homelessness research: a guide for economists (and friends) *Journal of Housing Economics* 44, 1-25. https://www.sciencedirect.com/science/article/pii/S1051137718302109

Pearl, J. & Mackenzie, D. (2018) *The Book of Why: The New Science of Cause and Effect.* Penguin.

Sewell Report' (2021)) UK Government's Commission on Race and Ethnic Disparities

VanderWeele, T. (2015) *Explanation in Causal Inference: Methods for Mediation and Interaction*. Oxford University Press.

Watts, B., Bramley, G., Fitzpatrick, S., Pawson, H. & Young, G. (2021) *The homelessness monitor: Scotland 2021.* Crisis. www.crisis.org.uk

Watts, B., Bramley, G., Pawson, H., Young, G., Fitzpatrick, S. & McMordie, L. (2022) *The homelessness monitor: England 2022*. Crisis. www.crisis.org.uk

HERIOT WATT UNIVERSITY

I·SPHERE
Institute for Social Policy, Housing and Equalities Research

