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Perceptions of social mix and ethnic diversity in changing neighbourhoods: evidence from Glasgow and regeneration implications

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ABSTRACT

Perceptions of neighbourhood change have been an important area of inquiry for several reasons, including for their effects upon place attachment, mobility intentions, and links to mental and physical health. In this article, we take a different perspective by assessing residents' perceptions of neighbourhood compositional changes relating to social class and ethnicity and considering them as potential pathways to other social and psychosocial outcomes. In addition, we examine how these relationships are moderated in situations where policy is a prime cause of neighbourhood change through state-led regeneration. Across deprived areas, perceptions of social mix are positively associated with residential satisfaction, community cohesion, and feelings of empowerment and safety. Perceptions of ethnic diversity are positively associated with empowerment and safety, and negatively with area reputation. In regeneration areas, perceived social mix is positively associated with most outcomes but perceived ethnic mix holds negative associations; neither appears to impact external reputations.

Introduction

Neighbourhoods are said to be constantly changing due to a range of forces including movements of people, flows of private capital and state interventions (Zuk *et al*., 2018). Others have described these forces as a mixture of globalization and gentrification (Zukin *et al*., 2016). A key component of change is shifting neighbourhood composition in social and ethnic terms, often closely related to changes in other key spheres such as housing and the built environment, commercial premises and the local economy (Gosse *et al*., 2016). The state can be a key actor in bringing about these changes due to 'state-led gentrification' (Davidson, M., 2008), or as a result of state-instigated area-based regeneration (Hall, 2016).

Indeed, much housing and urban regeneration policy assumes that residential mixing is a good thing, particularly in social class terms. In the UK, policies to create 'mixed communities' have existed for the past thirty years (Tunstall & Lupton, 2010), mostly taking the form of mixing housing tenures within council estates, introducing both owner occupation and private renting and changing a community's social or population mix (Lupton & Tunstall, 2008). Greater social class and income mix within an area was expected to benefit communities through impacting area-level effects such as improving the level and quality of services and resources, providing stronger voice and empowerment, enhancing informal social control (Galster, 2012; Kearns & Mason, 2007), and reducing area stigmatization (Carnegie *et al.*, 2018). In addition, social mixing was expected to boost positive social interactive mechanisms such as network resources (support, information and resources) and network socialization through the values and behaviours of peers and role models (Miltenburg 2015). However, the evidence from the UK for social and other effects derived from mixed tenure communities is sparse and of modest quality (Sautkina *et al.*, 2012).

Conversely, although state multiculturalism is a recognized and much debated approach in the UK (Mathieu 2018), ethnic diversity has not been an explicit feature of UK housing or regeneration policy. Nevertheless, regeneration policies for deprived communities often affect ethnic diversity in a number of ways, as illustrated by the case of Glasgow. First, in the years preceding regeneration, low demand housing areas were an important option for economic migrants and also allocated to refugees under state dispersal policies (Crawford *et al.*, 2012). In due course, these estates were subject to area-based regeneration programmes, with longer-term residents often relocating to other neighbourhoods, leaving a more ethnically mixed community in regeneration areas (GoWell 2011). Later, many remaining residents, including a high proportion of ethnic minorities, were rehoused nearby to enable redevelopment to take place while others remained *in situ* to be rehoused in the newly built dwellings. The result can be greater diversity in both the regeneration and adjacent areas (Lawson & Kearns, 2017).

As explained later, it is important to study residents' perceptions of these state-induced neighbourhood changes for a number of reasons. Such perceptions indicate the level of change people are aware of and their level of support for change (Gosse *et al.*, 2016), given that 'people are sensitive to, and in general, opposed to change' (Durmaz-Drinkwater *et al.*, 2020). Perceptions of neighbourhood change also measure important social and psychosocial outcomes (Kearns *et al.*, 2012) that can influence mobility intentions (van Ham & Feijten, 2008) and affect residents' quality of life and physical and mental health (Hirsch *et al.*, 2021). What is less often considered, and forms the main focus of this article, is how perceptions of the two main components of neighbourhood compositional change, social mix and ethnic diversity, may be influential upon the other key social and psychosocial outcomes.

In the following section, we explain why perceptions of social mix and ethnic diversity can be influential upon psychosocial outcomes for residents (such as perceptions of trust and feelings of safety), and review what is known about each type of perception. We then describe our study of deprived communities in Glasgow UK, in which we compare perceptions of social mix and ethnic diversity to objective measures of neighbourhood mix and contrast their respective associations with a

range of social and psychosocial outcomes for individuals. In the discussion, we consider whether perceptions of social mix and ethnic diversity support positive outcomes for residents, and where neighbourhood change and perceptions thereof may need more attention from regeneration policy.

Perceptions of neighbourhood change

Perceptions of neighbourhood change have been an important subject of inquiry for several reasons. Most often, neighbourhood perceptions are either used as a proxy measure of change itself, or as a means of gauging residents' response to change; residents' satisfaction or happiness in the face of change being something planners and others wish to be informed about, i.e. to know whether people are supportive of change or opposed to it (Gosse et al., 2016). Perceived neighbourhood changes are usually located in a number of spheres, notably the economic, social and cultural, physical and housing tenure (ibid.). Each sphere is disaggregated in different studies: the physical includes both the built environment and local amenities; the economic covers employment and income levels plus affordability; and the social sphere includes perceptions of demographic and racial composition as well as relations between neighbours (e.g. Hirsch et al., 2021). Perceptions of change vary across the spheres, with a Canadian study reporting that physical changes are more readily perceived than others, and that perceptions of economic and social change are associated with a person's age and prior belonging (Gosse et al., 2016).

In recent years, perceptions of neighbourhood change have formed a key part of studying the impacts of gentrification, both market-led and state-led. The latter has been called 'gentrification by stealth' (Bridge et al., 2012) in that 'the language of social mixing conceals the class-based changes induced' through urban renewal policies (Hochstenbach, 2017, p. 403). State-led gentrification happens through a range of mechanisms in different countries including: infill private developments on brownfield land (Davidson, M., 2008); sales of social housing stock and rent liberalization (de-regulation) of some of the remainder (Hochstenbach, 2017); and stock transfer, or the sale of council estates to housing associations or arms-length companies for redevelopment (Watt, 2009). Where such policies impose costs on existing residents, or subsequent state provision is aimed at particularly benefiting new residents, this has been interpreted as a threat to the self-respect of the original residents (Wells, 2021).

Although most earlier studies of gentrification focused on 'direct displacement' effects (Fraser, 2004), i.e. replacing one set of households with another (usually more middle-class), other studies have considered wider impacts, including 'indirect economic displacement' and unaffordability of housing and services (Davidson, M., 2008), 'social displacement' (Atkinson, 2002) and 'perceptible loss of home and community' as a result of the changing social balance, place identity, local politics and service provision brought about by new residents with more economic and political power (Betancur, 2002; Davidson, M., 2008). This sense of 'loss of place' and 'community displacement' are psychosocial outcomes said to result from ineffective social mix policies that do not deliver enough benefits to existing residents (Allen, 2005). In the context of 'commercial gentrification' in London, residents'

perceptions of change have been found to match reality most closely in relation to the nature of local business and shops – including their ethnicity, with their perceptions of the changing 'character' of their neighbourhoods not always matching the planning authorities' understanding (Durmaz-Drinkwater *et al.*, 2020).

As already stated, perceptions of neighbourhood change are considered important in their own right, often as psychosocial outcomes, but also as pathways to other outcomes, most notably residential mobility intentions and physical and mental health. A sense of 'loss of place', and a perceived difference between one's own characteristics and those of the dominant or ascendent group in an area, can erode place attachment and produce a desire to move. This was shown in the Netherlands, where being in a local minority in respect of having a low income, renting or being from an ethnic minority increased mobility intentions, reflecting attitudes to one's neighbours (van Ham & Feijten, 2008) and pertinent because gentrification often involves changes to the ethnic composition of an area (Wells, 2021).

Research into associations between perceived neighbourhood changes and health outcomes highlights a number of other intermediate psychosocial outcomes. For example, worsening perceptions of neighbourhood problems related to crime and disorder, the physical environmental and area reputation have been associated with increased anxiety and depression (Olsen *et al.*, 2017). Similarly, a perceived decline in social cohesion (including shared values, trust and solidaristic help) has been associated with poor mental health (Yang *et al.*, 2021), whereas perceived neighbourhood fragmentation caused by cultural differences between newer, immigrant residents and others, and between younger and older generations, has been related to a sense of isolation (Conde *et al.*, 2018). With regard to physical health, improved perceptions of neighbourhood safety over time have been associated with lower blood pressure among all adults, and with higher BMI among females (Gary-Webb *et al.*, 2020). A recently developed survey tool for measuring relevant perceived neighbourhood changes to explore pathways to health outcomes includes perceptions of affordability, the built environment, social and cultural changes (including differences in employment, ethnicity and values) and feelings of trust, empowerment and inclusion. The researchers also called for a better understanding of the influence of personal characteristics on perceptions (Hirsch *et al.*, 2021).

It is clear that neighbourhood changes can have crucial impacts upon residents' quality of life and health and wellbeing. As discussed, neighbourhood perceptions inform several important social and psychosocial outcomes (Kearns *et al.*, 2012) and are influenced by the changing socio-demographic composition of neighbourhoods. However, studies of perceptions of neighbourhood change tend to explore whether people perceive social changes in general terms or consider their co-residents to be similar or different to themselves in general, rather than investigating perceptions of the two key social changes identified in the literature, namely social class and ethnicity, to which we now turn.

Perceived social mix

George Orwell famously declared that 'England is the most class-ridden country under the sun', though he also cheered 'the diversity of it' (Orwell, 1941). Evidence

in recent years has indicated that people deny thinking in class terms or identifying with a class, with two-thirds of Britons saying they do not belong to a social class (Reay, 2005; Savage, 2015). Individualism is said to have replaced class identity, but people continue to engage in differentiation from others, and readily recognize class identifiers, markers of social position and moral signifiers, especially in cross-class interactions. As Savage puts it: 'Class is important not so much as an overt badge (when people feel proud to belong to a class), but more in the way that it prompts moral and emotional reactions, especially negative ones. It matters more which class you do not belong to, rather than which one you think you do belong to' (Savage, 2015, p. 366).

Despite denials and claims to the contrary, many observable class distinctions are still made and readily apparent in residential contexts. If, as Irwin (2018) argues, people have a 'view from a place' involving their biographical journey and the neighbourhood they live in, then the individual perspective is clearly informed by social experience. Furthermore, while social class tends to go undetected much of the time because most people spend most of their time with others of similar class position (Savage, 2015), we might expect perceptions of social class to change or to be heightened for those who live in new, recently changed and more mixed communities.

Past studies suggest that social mix achieved through housing tenure can have positive impacts upon residential outcomes as reflected by local property prices and demand for social housing (Sautkina et al., 2012), with effects upon satisfaction and area reputation being less consistent or more qualified; in Australia, area reputations were found to have improved, but external stigma was not removed by tenure mixing (Arthurson, 2012). In mixed tenure situations, social renters can feel inferior, suffer from low perceived relative position (Kearns et al., 2013c), and come under pressure to maintain standards of upkeep, while owners make property price comparisons with other places and feel dissatisfied (Kearns et al., 2013b).

Outcomes dependent upon interaction (such as behavioural influences, social control or networking opportunities) are often undermined by a lack of impact of interventions on inter-group social contact for a variety of reasons. Factors pertaining to perceptions, such as the influence of language and lifestyles (Alves, 2017) and perceived differences in social status and ambition, lead people to socialize in other places (Heringa et al., 2018). Limits on either living in mixed communities or interacting once there have been reported to stem from 'middle class disaffiliation' based on stereotypical views or fears (Schuermans et al., 2015), differences in resources (Christensen, 2015) and a combination of resentment on the part of original residents and discomfort and uncertainty on the part of new residents (Bucerius et al., 2017). In many of these cases, social class and ethnicity intertwine to create perceived barriers to common interests between groups.

Perceived ethnic diversity

Although a number of studies have shown a negative relationship between neighbourhood ethnic diversity (objectively measured) and local social contacts (Gijsberts et al., 2012; Lancee & Dronkers, 2011; Tolsma et al., 2009; Vervoort et al., 2011),

there have been fewer studies of the effects of perceived neighbourhood ethnic diversity on social relationships. However, in four Nordic countries, with 'a relatively high degree of ethnic homogeneity', inter-ethnic friendships were more likely where people perceive their neighbourhood to be more ethnically diverse (Kouvo & Lockmer, 2013).

Studies have reported negative effects of (objective) neighourhood ethnic diversity upon trust in neighbours (Lancee & Dronkers, 2011), trust among the majority group (Gundelach & Freitag, 2014) and trust in the next-placed ethnic group in the social hierarchy (Bakker & Dekker 2012). In the UK, generalized trust was found to be higher for those who perceived that people with different ethnic backgrounds to themselves constituted half or more of the local population (Uslaner, 2010). In other European countries however (Germany, France and The Netherlands) perceived diversity has been associated with lower levels of trust in neighbours and a broader measure of community cohesion (Koopmans & Schaeffer, 2016). Furthermore, perceived ethnic diversity has been found to be associated with perceived ethnic threat (socially, culturally and economically) and anti-immigrant sentiment at the national level in Belgium (Hooghe & de Vroome, 2015) and at the neighbourhood level in Germany, Poland and the UK (Piekut & Valentine, 2016; Semyonov et al., 2004). Across the USA, residents' perceived level of immigration in their neighbourhood is associated with the degree to which they identify immigration as a problem (Newman et al., 2015).

Associations between residents' over-estimation of neighbourhood ethnic diversity and reported neighbourhood disorder, and between language diversity and lower collective efficacy have been found in Australia (Benier & Wickes, 2016; Wickes et al., 2013). In the UK, perceived collective efficacy (informal social control) was found to be lower in neighbourhoods with higher ethnic diversity, although the association with perceived ethnic diversity has not been studied (Twigg et al., 2010). In the US, perceived neighbourhood ethnic diversity has been associated with perceived risk of victimization and fear of crime (Chiricos et al., 2001). Generally, the findings on the effects of perceived ethnic diversity on other attitudes and outcomes have more often been negative than positive, although the findings are very country specific. Studies have tended to focus on the effects of perceived diversity on trust, safety and anti-immigrant sentiment, rather than other outcomes.

Studying perceptions and associations of mix

Aim

We aim to address a gap in the literature wherein perceptions of neighbourhood change are considered important for broader outcomes such as place attachment, mobility intentions and mental and physical health, but perceptions of the two key compositional elements underlying many neighbourhood changes – social class mix and ethnic diversity – are rarely studied. Although social class awareness is said to persist, studies of social mix have focused on the effects of different levels of achieved housing tenure mix, rather than examining perceptions of social mix per se. Studies of perceived ethnic diversity have mostly looked at impacts upon trust and cohesion

and less at other outcomes such as residential satisfaction, belonging and area reputation. Moreover, few studies of perceived neighbourhood ethnic diversity have occurred in the UK. Our aim is to consider perceived social mix and perceived ethnic diversity as potential influences upon a range of social and psychosocial outcomes that are important for people's quality of life, and to do so in a context where the state is a key actor in bringing about neighbourhood change.

Objectives

To pursue this aim, we address the following questions:

- To what extent do residents in deprived areas perceive their neighbourhoods to be mixed in social and ethnic terms?
- How do such perceptions correspond with objective indicators of neighbourhood composition?
- Are perceptions of social mix and ethnic diversity associated with self-reported residential, social and psychosocial outcomes for residents, and thus potential pathways to these outcomes?

We are also interested in whether regeneration programmes, which directly and indirectly affect mix and diversity within neighbourhoods, alter these relationships:

- Are associations moderated (positively or negatively) in areas affected by area-based regeneration? We would expect associations with perceived social mix to be more positively moderated by regeneration status than associations with perceived ethnic diversity, because increased social mix is signalled as an objective of regeneration policy and more likely to be accepted by residents as a way to make disadvantaged communities more similar to other places.

Study context

This study was conducted in Glasgow, a relatively deprived, post-industrial city in Scotland, historically one of the least socially mixed or ethnically diverse cities in the UK. Scotland and Glasgow have a long tradition of 'difference', namely a sectarian divide between Protestants and Catholics (Devine, 2000). Although sectarianism is perceived to be less prevalent than prejudice against BAME groups (NFO, 2003), it is also the more acceptable attitude (Davidson, J., 2018). Nevertheless, Glasgow's BAME population has changed in recent decades, quadrupling from 3.2% in 1991 to 11.6% by 2011 (Walsh *et al.*, 2019), and remaining relatively static at 11.5% in 2021 (Glasgow City Health and Social Care Partnership, 2021). The local context is one of a settled Pakistani community in parts of the city that still experiences 'everyday racism' in racist remarks and residential segregation (Hopkins, 2004). At a national scale, BAME groups experience inequalities in employment and income and report discrimination in accessing public and private services, contrasting the projected image of a civic, inclusive national identity (Meer *et al.*, 2022).

Migrants from Central and East European countries since 2004 and increasing international students have supported an expansion of private rented housing (Pietka-Nykasa & McGee, 2016). Glasgow has also since 2000 received over 10,000 refugees and 4,000 asylum seekers into the city (Asylum Seeker Housing Project, 2017). This rapid change has not been an easy process for Glasgow. There were community efforts to support asylum seekers in the first decade of the new century but also problems stemming from their 'dispersal' into very deprived areas with little prior experience of BAME groups, where perceived competition over housing and other resources caused resentment and racial harassment (Sim and Bowes, 2007; Wren, 2004). Hostility and prejudice to asylum seekers and BAME groups in general is said to have continued (Quinn, 2014), although mostly recently 'Glaswegian solidarity' was identified as locals prevented Home–Office deportations of asylum seekers (Brooks 2021).

In employment, social class and residential terms, ethnic groups have fared very differently in Scotland (Scottish Government 2015). Some groups have relatively high proportions of adults in the top three social class groups including White groups (British, Irish, Other), Indians, and those of Mixed Ethnicity. Other ethnic groups have high proportions in the lowest social class groups including non-White groups (Black, Pakistani, African), Gypsy/travellers and Poles. Those of African, Caribbean or Black heritage are more likely to live in the most deprived areas, while those of Indian, Chinese or Mixed heritage are more likely to live in the least deprived areas (Walsh *et al.*, 2019).

The city housing strategy includes the provision of 'new sustainable mixed tenure communities' through a Transformational Regeneration Areas (TRAs) Programme commenced in 2005 (Glasgow City Council, 2017, p. 52). This strategy followed the transfer of the council's housing stock to a housing association in 2003 (Gibb, 2003), but rather than labelling it state-led gentrification, we refer to it as state-led regeneration. TRAs and LRAs (Local Regeneration Areas) were built in the 1960s and 70s, with the former comprising high-rise estates while the latter comprised a mixture of towers and medium rise deck-access blocks. For most of their duration they were almost entirely council (public sector) housing. The programme covers fifteen communities and involves demolition of tower blocks and their replacement with low and medium-rise developments by the social and private sectors, plus refurbishment of better-quality existing housing. At the time of the study (2015) the regeneration areas (TRAs and LRAs) comprised predominantly social rented housing (c.80% of dwellings) with the largest age groups being 25–39 years (c.40% of adults) and 40–54 (c.25%). Employment was relatively low at 30%–40% of women and 40%–50% of men. Non-British residents formed a sizeable proportion of the areas' population, at 35%, a major change from ten years earlier.

Thus, Glasgow is a city where state-led regeneration, including policies that encourage mixed communities either purposely (in the case of mixed tenure housing and regeneration policies) or indirectly (in the case of the effects of migration and asylum accommodation policies, together with area-based regeneration effects in many of the same areas) have entailed substantial changes to communities and local experiences. It is in this context that we wish to explore the role that perceptions

of social mix and ethnic diversity play in relation to important social and psycho-social outcomes for residents and thus contribute to our understanding of the importance of perceptions of neighbourhood change.

Methods

Data source

The data come from a repeat cross-sectional study in 15 deprived neighbourhoods in Glasgow designed to investigate the impacts of housing improvements and regeneration upon residents' quality of life and wellbeing, using waves 3 (2011) and 4 (2015) (Egan *et al.*, 2010). Study areas were grouped: six areas undergoing area-based regeneration (TRAs and LRAs); two wider surrounding areas (WSAs) adjacent to regeneration areas, defined with housing providers to include neighbourhoods due to receive new housing to accommodate those relocated from TRAs; and seven other areas as a contrast, residentially more stable and in receipt of housing improvement works. The study surveyed resident householders aged 16 or over, with a 45% interview response rate in 2011 and 47% in 2015. In the regeneration areas, all addresses were selected, whereas in the other areas, addresses were selected randomly and stratified by housing tenure. Where respondents were interviewed at both waves, the responses at one wave, selected at random, were removed to avoid double-counting of respondents. The sample comprised 5,672 respondents, with their profile given in Table 1. The sample was known to under-represent some groups in some areas when compared with local population estimates and was weighted to achieve representativeness. This applied to males, adults aged under 25 and to a lesser extent under 39, and owner occupiers.

Neighbourhood variables

Two spatial units of analysis were used: census output area, with a target size of 50 households; and statistical datazone, with a typical population of 500-1000 residents. Details of compositional measures are in results Tables 3 and 4. Variables to measure social mix covered housing tenure, dwelling type, car ownership and employment (highest two socio-economic groups based on occupation). Variables to measure diversity covered ethnicity, nationality and religion. These 2011 census variables were linked to the main dataset through output area/datazone identifiers for each respondent.

Survey variables

Two independent variables measuring perceived social and ethnic mix were based on questions in the 2011 and 2015 surveys: 'How mixed do you think your neighbourhood is in terms of the social class of residents?' and 'How mixed do you think your neighbourhood is in terms of the ethnic background of the residents?'. Response categories were 'hardly mixed at all', 'fairly mixed' and 'very mixed'. An ordinal scale for perceptions of diversity is said to reflect residents' awareness better

Table 1. Sample structure.

Variable	Categories	Frequency	Percentage
Gender	Male	2,408	42.5
	Female	3,264	57.5
Age group	16–24	541	9.5
	25–39	1,613	28.4
	40–54	1,542	27.2
	55–64	784	13.8
	65+	1,192	21.0
Household structure	Adult only	2,763	49.3
	Family (inc. dependent children)	1,633	29.2
	Older person only	1,204	21.5
Ethnicity	White British/Irish	4,447	79.0
	Non-White British	376	6.7
	White non-British	184	3.3
	Non-White non-British	623	11.1
Employment status	In work	1,659	29.4
	Education or training	268	4.8
	Unemployed/not working	2,402	42.6
	Retired	1,313	23.3
Housing tenure	Social renter	4,342	76.9
	Private renter	347	6.1
	Owner occupier	956	16.9
Length of residence	Less than 1 year	527	9.4
	1–2 years	556	9.9
	3–10 years	1,466	26.0
	11 or more years	3,079	54.7

than asking respondents to estimate percentages of other kinds of residents (Newman *et al.*, 2015; Piekut & Valentine, 2016). Neighbourhood was defined as 'the local area within a 5- to 10-minute walk of your home'.

Six neighbourhood outcome variables were formed of sixteen questions. These were grouped into four factors (residential satisfaction; community cohesion (belonging and neighbourliness); community cohesion (trust) and empowerment) and two individual variables (neighbourhood external reputation and feelings of safety) through factor analysis, as shown in Table 2.

Analysis

The frequency distribution of responses to the two perceived mix questions is reported to answer RQ1. To answer RQ2 we examined the median values of the neighbourhood variables at the two spatial scales for each category of response to the perceived mix questions. To answer RQ3, a multiple linear regression model (Model 1 in the results Tables 5–10) uses 'hardly mixed' as the reference category for the perceived mix variables and indicates where significant associations hold for 'very mixed' and/or 'fairly mixed'. This is where we explore whether perceptions of neighbourhood social mix and ethnic diversity are potential pathways to the residential, social and psycho-social outcomes. To answer RQ4, a second model (Model 2 in Tables 5–10) includes interaction terms for regeneration areas and their surrounding areas. Both sets of models control for the three types of area and for individual-level variables including age, gender, household type, employment status, ethnicity and length of residence. Coefficients (*b*) and associated confidence intervals (95% CIs) are presented based on robust standard errors to correct for respondent clustering in study areas.

Table 2. Construction of outcome variables.

Outcome	Scale	Items	Question
Residential satisfaction[a] (a = 0.75)	1–5	Satisfaction with neighbourhood	'How satisfied or dissatisfied are you with this neighbourhood as a place to live?'
		Progress from neighbourhood	'Living in this neighbourhood helps make me feel that I'm doing well in my life'
		Internal reputation	'People who live in this neighbourhood think highly of it'
External reputation	1–5	Perceived area reputation	'Many people in Glasgow think this neighbourhood has a bad reputation'
Community cohesion: Belonging and neighbourliness[a] (a = 0.83)	1–4	Feeling part of community	'I feel part of the community'
		Talking to neighbours	'I stop and talk to people in my neighbourhood'
		Neighbours look out for each other	'My neighbourhood is a place where neighbours look out for each other'
		Extent of acquaintance with neighbours	'Would you say that you know most/many/some/very few/none of the people in your neighbourhood?'
		Borrowing things and exchanging favours	'I borrow things and exchange favours with my neighbours'
		Visiting neighbours	'I visit neighbours in their home'
Community cohesion: Trust[a] (a = 0.59)	1–5	Likelihood of intervention	'It is likely that someone would intervene if a group of youths were harassing someone in the local area'
		Honesty	'Someone who lost a purse or wallet around here would be likely to have it returned without anything missing'
Empowerment[a] (a = 0.76)	1–5	Influence	'On your own, or with others, you can influence decisions affecting your local area'
		Proactivity	'People in this area are able to find ways to improve things around here when they want to'
		Responsiveness	'The providers of local services, like the council and others, respond to the views of local people'
Safety	1–5	Feelings of safety	'How safe would you feel walking alone in this neighbourhood after dark?'

[a]Groupings defined through factor analysis using Oblimin rotation and an Eigenvalue of over 1 as threshold. The combined outcome variables were formed of the mean value of the responses for all items in the group, with higher numbers (1–4 or 1–5) representing a more positive outcome.

Results

Perceptions of mix and diversity

Most respondents thought their neighbourhood was socially mixed: 60.7% 'fairly mixed' and 22.4% 'very mixed'. At the larger datazone scale increased perceptions of social mix occur as the proportions of houses and owner occupation in an area declines, and as the proportion of private renting (marginally) and adults with a degree rises (Table 3). Similar patterns exist at the smaller output area scale, although the differences are less marked.

Most respondents considered their neighbourhood to be ethnically mixed: 50.5% 'fairly mixed' and 24.7% 'very mixed'. All five compositional variables showed clear,

Table 3. Perceived neighbourhood social mix and compositional characteristics of neighbourhoods (Source: Scotland's Census 2011).

	Output Area Composition (median %)			Datazone Composition (median %)		
	Perceived social mix			Perceived social mix		
	Hardly	Fairly	Very	Hardly	Fairly	Very
% households in owner occupation	14.29	15.63	8.82	23.58	24.41	18.84
% households in private renting	2.94	3.17	3.13	4.46	5.06	5.49
% dwellings as houses	8.70	8.33	3.92	25.26	17.08	7.28
% households with car access	31.30	31.88	28.17	35.11	36.59	32.33
% working age with Level 4 quals.	10.48	11.21	14.94	10.73	12.21	19.47
% working age in NSSEC 1 or 2	10.99	11.50	10.45	12.45	12.70	11.94
% working age unemployed/ never worked	15.63	15.25	17.89	15.98	13.79	15.64

Table 4. Perceived neighbourhood ethnic diversity and compositional characteristics of neighbourhoods (Source: Scotland's Census 2011).

	Output area composition (median %)			Datazone composition (median %)		
	Perceived Social Mix			Perceived Social Mix		
	Hardly	Fairly	Very	Hardly	Fairly	Very
% pop. British, Irish, Scottish Non-White	4.96	10.00	31.34	6.88	12.14	31.48
% pop. Other White (not B,I,S)	1.05	1.94	3.90	2.00	2.76	4.53
% pop. Non-White	3.03	7.54	24.76	4.85	8.96	20.46
% pop. Foreign Born (non-UK)	3.90	8.26	25.83	5.36	9.52	25.19
% pop. Other than Christian	29.89	34.78	40.58	32.06	35.07	41.27

similar trends at both spatial scales (Table 4). Increased perceptions of ethnic diversity occur as the proportions of non-Whites, foreign-born and non-Christians in an area increases. Differences in perceptions were greater at the smaller, output area scale (the opposite of social mix). This may reflect the 'micro-level organization of social interaction' in 'everyday activity spaces' – something we have not assessed here – which can result in boundaries and distancing rather than communication between groups (McKeown & Dixon, 2017).

Associations with perceptions of mix and diversity

Model 1 in Tables 5–10 gives the results of the regressions for the whole sample. Perceiving one's neighbourhood to be socially mixed is positively associated with all six outcomes, the association being stronger for 'very mixed' than for 'fairly mixed' (apart from Empowerment). The two strongest associations with perceived social mix were for higher residential satisfaction ('very mixed' $b = 0.34$, CI: 0.25, 0.43) and less agreement that the area had a negative external reputation ($b = 0.39$, CI: 0.27, 0.51). The next strongest association was with feeling safe in the

Table 5. Multiple linear regression: residential satisfaction.

		Model 1				Model 2			
		B	Sig.	Lower CI	Upper CI	B	Sig.	Lower CI	Upper CI
Intercept		3.891	0.000	3.823	3.959	3.950	0.000	3.868	4.032
Social mix	Very mixed	0.338	0.000	0.250	0.425	0.152	0.008	0.040	0.264
	Fairly mixed	0.224	0.000	0.155	0.293	0.133	0.003	0.047	0.219
Ethnic mix	Very mixed	−0.079	0.045	−0.157	−0.002	0.041	0.389	−0.053	0.136
	Fairly mixed	−0.031	0.271	−0.085	0.024	−0.004	0.907	−0.070	0.062
Interaction: Social mix×area	Very mixed×Regen area					0.433	0.000	0.212	0.653
	Very mixed×Wider area					0.305	0.008	0.080	0.529
	Fairly mixed×Regen area					0.169	0.084	−0.023	0.360
	Fairly mixed×Wider area					0.201	0.019	0.033	0.370
Interaction: Ethnic mix×area	Very mixed×Regen area					−0.303	0.009	−0.530	−0.075
	Very mixed×Wider area					−0.222	0.035	−0.430	−0.015
	Fairly mixed×Regen area					−0.080	0.438	−0.282	0.122
	Fairly mixed×Wider area					−0.050	0.423	−0.174	0.073
		$N=5{,}432$, $R^2 = 0.096$				$N=5{,}432$, $R^2 = 0.100$			

Note: Tables 4–9 include controls for respondent age, gender, household type, employment status, ethnicity and length of residence.

Table 6. Multiple linear regression: external area reputation.

		Model 1				Model 2			
		B	Sig.	Lower CI	Upper CI	B	Sig.	Lower CI	Upper CI
Intercept		3.134	0.000	3.033	3.236	3.174	0.000	3.045	3.304
Social mix	Very mixed	0.391	0.000	0.266	0.515	0.290	0.002	0.110	0.469
	Fairly mixed	0.240	0.000	0.143	0.336	0.097	0.171	−0.042	0.236
Ethnic mix	Very mixed	−0.409	0.000	−0.524	−0.294	−0.354	0.000	−0.518	−0.190
	Fairly mixed	−0.176	0.000	−0.262	−0.091	−0.116	0.050	−0.232	0.000
Interaction:	Very mixed × Regen area					0.153	0.315	−0.145	0.452
Social mix × area	Very mixed × Wider area					0.059	0.735	−0.282	0.399
	Fairly mixed × Regen area					0.146	0.258	−0.107	0.400
	Fairly mixed × Wider area					0.258	0.032	0.023	0.493
Interaction:	Very mixed × Regen area					−0.088	0.592	−0.409	0.234
Ethnic mix × area	Very mixed × Wider area					0.120	0.468	−0.204	0.444
	Fairly mixed × regen area					−0.184	0.215	−0.474	0.107
	Fairly mixed × Wider area					−0.071	0.470	−0.264	0.122
		$N = 5{,}432$, $R^2 = 0.061$				$N = 5{,}432$, $R^2 = 0.062$			

Table 7. Multiple linear regression: cohesion – belonging and neighbourliness.

		Model 1				Model 2			
		B	Sig.	Lower CI	Upper CI	B	Sig.	Lower CI	Upper CI
Intercept		2.687	0.000	2.629	2.745	2.749	0.000	2.678	2.820
Social mix	Very mixed	0.250	0.000	0.179	0.320	0.106	0.038	0.006	0.206
	Fairly mixed	0.191	0.000	0.136	0.247	0.124	0.002	0.046	0.203
Ethnic mix	Very mixed	−0.0110	0.745	−0.078	0.056	0.028	0.543	−0.062	0.119
	Fairly mixed	0.0260	0.283	−0.022	0.074	0.032	0.319	−0.031	0.095
Interaction:	Very mixed × Regen area					0.267	0.002	0.100	0.434
Social mix × area	Very mixed × Wider area					0.325	0.000	0.144	0.506
	Fairly mixed × Regen area					0.112	0.128	−0.032	0.257
	Fairly mixed × Wider area					0.157	0.019	0.026	0.287
Interaction:	Very mixed × Regen area					−0.034	0.705	−0.210	0.142
Ethnic mix × area	Very mixed × Wider area					−0.086	0.359	−0.269	0.097
	Fairly mixed × Regen area					0.051	0.529	−0.108	0.210
	Fairly mixed × Wider area					−0.018	0.731	−0.124	0.087
		$N = 5,432$, $R^2 = 0.142$				$N = 5,432$, $R^2 = 0.145$			

Table 8. Multiple linear regression: cohesion – trust.

		Model 1				Model 2			
		B	Sig.	Lower CI	Upper CI	B	Sig.	Lower CI	Upper CI
Intercept		2.957	0.000	2.874	3.041	2.977	0.000	2.875	3.079
Social mix	Very mixed	0.262	0.000	2.874	3.041	0.140	0.052	−0.001	0.281
	Fairly mixed	0.237	0.000	0.158	0.317	0.161	0.005	0.050	0.272
Ethnic mix	Very mixed	−0.057	0.236	−0.151	0.037	0.068	0.296	−0.060	0.196
	Fairly mixed	−0.003	0.929	−0.072	0.065	0.053	0.249	−0.037	0.142
Interaction: Social mix×area	Very mixed×Regen area					0.305	0.011	0.069	0.540
	Very mixed×Wider area					0.178	0.181	−0.083	0.440
	Fairly mixed×Regen area					0.159	0.123	−0.043	0.361
	Fairly mixed×Wider area					0.165	0.092	−0.027	0.356
Interaction: Ethnic mix×area	Very mixed×Regen area					−0.374	0.005	−0.633	−0.115
	Very mixed×Wider area					−0.153	0.250	−0.415	0.108
	Fairly mixed×Regen area					−0.177	0.133	−0.408	0.054
	Fairly mixed×Wider area					−0.140	0.074	−0.294	0.013
		$N=5,430, R^2 = -0.47$				$N=5,430, R^2 = 0.050$			

Table 9. Multiple linear regression: empowerment.

		Model 1				Model 2			
		B	Sig.	Lower CI	Upper CI	B	Sig.	Lower CI	Upper CI
Intercept		3.296	0.000	3.225	3.367	3.324	0.000	3.239	3.409
Social mix	Very mixed	0.208	0.000	0.122	0.295	0.007	0.905	−0.110	0.124
	Fairly mixed	0.209	0.000	0.141	0.277	0.146	0.002	0.055	0.237
Ethnic mix	Very mixed	0.108	0.008	0.028	0.188	0.249	0.000	0.145	0.352
	Fairly mixed	0.024	0.427	−0.035	0.082	0.075	0.047	0.001	0.148
Interaction:	Very mixed×Regen area					0.472	0.000	0.268	0.676
Social mix×area	Very mixed×Wider area					0.356	0.002	0.129	0.582
	Fairly mixed×Regen area					0.117	0.187	−0.057	0.291
	Fairly mixed×Wider area					0.155	0.072	−0.014	0.324
Interaction:	Very mixed×Regen area					−0.517	0.000	−0.732	−0.301
Ethnic mix×area	Very mixed×Wider area					−0.259	0.002	−0.480	−0.038
	Fairly mixed×Regen area					−0.326	0.001	−0.521	−0.131
	Fairly mixed×Wider area					−0.048	0.489	−0.183	0.087
		$N=5{,}423$, $R^2 = 0.042$				$N=5{,}423$, $R^2 = 0.049$			

Table 10. Multiple linear regression: safety.

		Model 1				Model 2			
		B	Sig.	Lower CI	Upper CI	B	Sig.	Lower CI	Upper CI
Intercept		2.050	0.000	1.918	2.182	2.114	0.000	1.956	2.272
Social mix	Very mixed	0.289	0.000	0.137	0.441	0.009	0.934	−0.207	0.225
	Fairly mixed	0.240	0.000	0.120	0.360	0.134	0.114	−0.032	0.301
Ethnic mix	Very mixed	0.169	0.018	0.029	0.309	0.317	0.001	0.131	0.503
	Fairly mixed	0.135	0.012	0.030	0.241	0.195	0.005	0.058	0.331
Interaction: Social mix × area	Very mixed × Regen area					0.584	0.001	0.230	0.939
	Very mixed × Wider area					0.541	0.009	0.137	0.945
	Fairly mixed × Regen area					0.210	0.174	−0.093	0.513
	Fairly mixed × Wider area					0.210	0.160	−0.083	0.504
Interaction: Ethnic mix × area	Very mixed × Regen area					−0.418	0.032	−0.801	−0.036
	Very mixed × Wider area					−0.077	0.695	−0.461	0.308
	Fairly mixed × Regen area					−0.106	0.554	−0.456	0.244
	Fairly mixed × Wider area					−0.163	0.184	−0.402	0.077
		$N = 5,414, R^2 = 0.154$				$N = 5,414, R^2 = 0.157$			

neighbourhood ($b = 0.29$, CI: 0.14, 0.44), with slightly less strong associations existing for trust, belonging and neighbourliness, and empowerment. Recorded crime was falling in Glasgow during the survey period (www.understandingglasgow.com), though we do not know how the city trend varied across our study areas.

There were fewer associations with perceived ethnic diversity. In positive terms, those who perceived their neighbourhood to be ethnically mixed reported higher levels of feeling safe ('very mixed' $b = 0.17$, CI: 0.03, 0.31), and higher levels of empowerment ($b = 0.11$, CI: 0.03, 0.19); however, the associations were weaker than for perceived social mix. In negative terms, those who perceived their neighbourhood to be ethnically mixed were less likely to disagree that their area had a negative external reputation ($b = -0.41$, CI: -0.52, -0.29), the strongest association found for either perceived mix variable. The more varied results for perceived ethnic diversity compared with perceived social mix may reflect a closer spatial integration of social class groups within localities than of ethnic groups, a dimension not measured here but found to be important in earlier studies (Kearns *et al.*, 2013b).

Moderating effects in regeneration and surrounding areas

Model 2 in Tables 5–10 show the effects of interacting the perceived-mix variables with both Regeneration Areas and Wider Surrounding Areas. Living in a Regeneration Area and perceiving one's neighbourhood to be 'very mixed' in social class terms was additionally, positively associated with five of the six outcomes, the exception being External Area Reputation. The associations were strongest for feelings of safety ($b = 0.58$, CI: 0.23, 0.94) empowerment ($b = 0.47$, CI: 0.27, 0.68) and residential satisfaction ($b = 0.43$, CI: 0.21, 0.65). Living in a Wider Surrounding Area and perceiving one's neighbourhood to be 'very mixed' in social class terms was similarly, though less strongly, positively associated with four of the six outcomes, the exceptions being External Area Reputation and Trust. Those in Wider Surrounding Areas who perceived their neighbourhood to be 'fairly mixed' in social terms were more likely to disagree that their neighbourhood had a negative external reputation ($b = 0.26$, CI: 0.02, 0.49).

Perceiving one's neighbourhood to be 'very mixed' ethnically held a negative association with Residential Satisfaction in Regeneration Areas ($b = -0.30$, CI: -0.53, -0.08) and Wider Surrounding Areas ($b = -0.22$, CI: -0.43, -0.02), and with Trust in Neighbours in Regeneration Areas ($b = -0.37$, CI: -0.63, -0.12). Although perceived ethnic diversity held a positive association with feelings of safety in the whole sample, perceiving one's neighbourhood to be 'very mixed' ethnically held a negative association with safety in Regeneration Areas ($b = -0.42$, CI: -0.80, -0.04). Similarly, despite being positively associated with empowerment in the whole sample, perceiving one's neighbourhood to be 'very mixed' ethnically held a negative association with feelings of empowerment in both Regeneration Areas ($b = -0.52$, CI: -0.732, -0.30) and Wider Surrounding Areas ($b = -0.26$, CI: -0.48, -0.03), with the same being evident in Regeneration Areas for 'fairly mixed' ($b = -0.33$, CI: -0.52, -0.13).

Discussion

Our review of neighbourhood change highlighted the importance of perceptions of compositional changes (Hirsch *et al.*, 2021) as a key way in which residents are aware of the changing identity of their communities (Davidson, M., 2008). There have, however, been few studies comparing residents' perceptions of social mix and ethnic diversity, the two main components of compositional change identified in studies of state-led gentrification and regeneration. In deprived communities in Glasgow, we have compared perceptions of social mix and ethnic diversity with neighbourhood socio-demographic composition, and found that most people considered their neighbourhood to be mixed in both social class and ethnic terms. This is somewhat surprising given that for the poorest communities in Scotland deprivation is enduring (ScotPHO, 2020) and they have been considered largely unchanged over time (Pacione, 2004), although later analysis showed accelerating change in ethnicity at neighbourhood level for some areas (Walsh *et al.*, 2019). In the residents' view, Glasgow's deprived communities are not as static as often portrayed.

In our study the median presence of non-Whites, as recorded in the census, in neighbourhoods considered 'fairly mixed' in ethnic terms was 8%–9%, close to the presence of non-Whites in Scotland, 8% (www.scotlandscensus/ethnicity), whereas in 'very mixed' neighbourhoods the median presence of non-Whites was 21%–25%, three times the national average; thus, the judgement of 'very mixed' appears warranted. Perceived ethnic neighbourhood diversity is related to the presence of non-white residents, with sensitivity being greater at the output area, though also existing at the wider neighbourhood level. Perceived diversity also aligned with the presence of foreign-born residents, which could reflect visibility as well as language differences, with 30% of all refugees and 50% of those arrived in the past year having difficulty speaking English (Mulvey 2013).

In contrast, for all categories of response to the perceived social mix question, the median level of social class 1 & 2 householders (managerial, administrative and professional workers) in the local area was 11%–13% at either spatial scale, compared with a national presence of this group of 34% (www.scotlandscensus/TableD16101SC); in this case, the judgements of being 'fairly' or 'very' mixed seem unusual in comparison to national norms. These heightened perceptions of social mix occurred even more so in neighbourhoods with a greater presence of flatted accommodation and of people with higher level qualifications, but relatively low levels of owner occupation, particularly at the micro level of the output area. These findings confirm the notion that in places where people have mostly lived among others of the same social class, areas which were entirely socially rented in the past, and where degree holding has been well below the national average for some time (Scottish Government, 2020), they become very aware of differences when they occur (Savage, 2015). Thus, areas can be perceived as very socially mixed with modest levels of professional workers, owner occupiers and people with higher qualifications.

In the second part of our analysis, we explored the associations of perceived mix and diversity with a number of social and psychosocial outcomes that are important for community and place attachment, mobility intentions and health and wellbeing. Perceptions of socially mixed neighbourhoods were positively associated with a range

of residential, social and psychosocial outcomes for residents, more so where the neighbourhood was considered 'very mixed'. The associations, albeit modest in scale, are more favourable to social mix than past quantitative studies (Sautkina et al., 2012). These results add to evidence that 'deconstructs the idea of a single, homogenous white community' (Bieder, 2011, p. 4), indicating that residents in deprived areas value social mix, because it reflects being 'ordinary' and more like other communities, a key virtue of mixed tenure found in earlier studies (Allen et al., 2005). The positive outcomes may also reflect the 'insider's' view, whereby interactions and proximity in mixed-tenure circumstances, along with a resistance to 'othering', lead to the reporting of positive views (Raynor et al., 2020).

In contrast, perceived ethnic diversity had fewer and more mixed associations with outcomes, in line with past UK studies which are not as negative about the effects of perceived diversity as studies elsewhere. Those perceiving their neighbourhood to be ethnically mixed reported higher levels of feeling safe and empowered. The former finding runs counter to the notion of inter-ethnic group threat (Schlueter & Scheepers, 2010), though in very deprived communities physical threat may be more significant than economic or social threat, and more likely to emanate from members of the majority population (Bieder, 2011; Garner et al., 2009; Hoggett et al., 2008). The finding on empowerment coincides with the presence of self-organized, mutually-supportive activities established among migrants and by majority community organizations to support asylum seekers and refugees (Wren, 2004), leading residents to see their communities as more empowered and resilient. The lack of association between perceived diversity and cohesion (neighbourliness and trust) may reflect insufficient daily, inter-group contact to generate such outcomes.

The moderating role of social contact in reducing inter-group prejudice, resulting in positive perceptions, is an important additional area of inquiry. However, the long-standing argument that this was almost universally the case (Pettigrew & Tropp, 2006) was recently questioned by an updated meta-analysis (Paluck et al., 2019) drawing attention to lack of evidence on Allport's (1954) four conditions for the contact hypothesis. There are two conditions relevant here, but unknown in our study areas. First, the extent to which different groups are of equal status, something unlikely given the destitution and restrictions placed on asylum seekers. Second, the way in which local contact is supported by local institutions, and in particular the extent to which local services, amenities and activities mediate contact and interactions between groups.

Externally, perceived ethnic diversity within the neighbourhood was associated with a stronger recognition that the area had a negative reputation, reflecting the fact that ethnic diversity is far from the norm across Glasgow and Scotland: four-fifths of the city's neighbourhoods have an ethnic minority presence <12% (Freeke, 2012; Walsh et al., 2019). Our finding echoes arguments that Scottish society may not be as tolerant of ethnic minorities and migrants as policy and commentators suggest (Davidson, N. et al., 2018), reinforcing the contextual contingency of the effects of perceived community mix.

The third part of our analysis examined the direct and indirect effects of state-induced neighbourhood change. In regeneration areas and adjacent

neighbourhoods – where replacement housing has been provided – we found that perceived social mix was, as intended, positively associated with most outcomes. However, in those same areas, perceived ethnic diversity was negatively associated with several outcomes, this being a type of mix that was not part of the regeneration plan, but the result of migration dispersal policies into regeneration areas, and a by-product of relocation into adjacent areas. From 1999 to 2012, the City Council located asylum seekers in areas of depopulation, vacancy and demolition, with regeneration later becoming a possibility for some of these areas (Hill *et al.*, 2021). When it did arrive, regeneration focused on physical changes to the housing stock rather than social and economic regeneration as well (GoWell, 2007). The contrast in results for social mix and ethnic diversity in regeneration areas suggests the importance of prior policy intentions, planned outcomes, and effective communication to residents through positive engagement in the regeneration programme. While these may not be guarantees of more positive outcomes, we know from studies of receiving communities in the early years of asylum dispersal that 'rapid' change alongside communities being 'inadequately informed' and local service providers having little prior experience or preparation led to local resentment and tensions rather than cohesion (Sim & Bowes, 2007; Wren, 2004).

Neither type of mix had much effect upon the perceived external reputation of regeneration areas as far as the residents were concerned. This is not surprising given that the stigmatization of social housing is understood to be attached to the product and organizations as well as the people, and the causes 'are many and varied' (CiH, 2020, p. 4). Furthermore, the societal roe of the sector underpins its stigmatization, so that 'the ongoing narrative of social housing being a 'springboard' to better things, isn't helping' (Spindley, 2020). Our finding is important because area reputations have real impacts for residents, with class-based place identities being enduring and difficult to change (Robertson, 2013), and media coverage of deprived areas focused mostly upon negative events rather than positive developments (Kearns *et al.*, 2013a). Others have argued that addressing area stigmatization needs to be a more central focus of regeneration strategies (Gourlay, 2007), while research on other social housing estates has indicated that tenure mixing combined with image change strategies (the provision of cultural events and media campaigns to challenge negative stereotypes) can reduce external stigma, although neither of these do so in all circumstances (Norris *et al.*, 2019).

Limitations

This study adds a unique perspective through being large in size, focused on deprived areas, and relating perceptions of mix and diversity to a number of psychosocial outcomes. However, it is cross-sectional and can only indicate where causal relationships might exist. The cross-sectional data came from two time points and unmeasured changes in the areas in the interval may affect the outcomes studied. We did not measure contact between social or ethnic groups, which may be a moderator of perceptions. Nor did we provide prior definitions of mix and diversity, which would have enabled a different kind of analysis to be conducted.

Future research

Future quantitative studies might attempt to go beyond crudely estimating the probability of inter-group contact plus incorporating measures of spatial integration, and more closely comparing the effects of objective and subjective mix. A study focused on individuals not areas could examine perceptions of mix in more detail than the single question used here, and investigate psychosocial outcomes for different ethnic and social class groups, with qualitative research investigating the mechanisms involved. Future research might also reveal how recent events may have influenced perceptions of social and ethnic mix, including the need to sustain migration levels in post-Brexit Scotland, resistance to Home Office asylum policy and deportations, and the advent of community mutual aid groups during the pandemic.

Conclusion

We have sought to contribute to the research on residents' responses to neighbourhood change by focusing on perceptions of two of the key compositional changes often involved, namely social mix and ethnic diversity. Moreover, we considered these perceptions as potential pathways to other important outcomes, comparing how perceptions of neighbourhood social mix and ethnic diversity are associated with other reported outcomes in deprived areas. Perceived social mix was found to be a potentially positive pathway to a range of residential, social and psychosocial outcomes in the context of both organic and planned neighbourhood change. Perceived ethnic diversity, on the other hand, was a less consistent pathway in general, being associated with fewer outcomes, both positively and negatively. Aspects of Glasgow's unique context are no doubt influential here, particularly the prominence of sectarian social divisions over and above others such as class-based differences, and the city's adjustment to the rapid increase and change in its ethnic minority population over the past two decades.

We also investigated the added impact of state-induced changes upon resident perceptions, in both regeneration and adjacent areas. Our findings have several implications for state-led regeneration programmes. First, the positive associations with perceived social mix in these areas point to the acceptability, or even desirability, of the 'ordinariness' of social class- and income-mixing (Allen *et al.*, 2005), and of trying to achieve this through having housing-tenure mixing as a planned outcome, although this may depend upon the degree of such intended change. Second, however, the negative associations with perceived ethnic diversity in these areas highlight the complications caused in this case by the intersection of regeneration and asylum policy (Hill *et al.*, 2021) and the need to be aware of such policy interactions from the outset.

Third, regeneration programmes should contain a social plan as much as they do a physical/housing plan, yet the former is often lacking. While consultation about the forthcoming regeneration changes in Glasgow contained information about future housing tenure mix – so that social class changes were anticipated – a lack of detail and certainty about who would be entitled to lettings in the future added to concerns about community instability and competition for resources on the part of both long-term residents and asylum seekers and refugees (Lawson & Kearns, 2010). In the case of

both social mix and ethnic diversity, the nature and degree of compositional changes brought to communities through regeneration deserve more attention and to be more explicit in strategy and communication plans so that the social and psychosocial benefits of such changes can be maximized, and any detrimental effects minimized.

Fourth, compositional changes to disadvantaged communities will not suffice to address area stigmatization. In the present study, neither type of perceived community mix was associated with the enduring external reputations of regeneration and adjacent areas (Robertson, 2013). Long-term change in the fortunes and sustainability of deprived areas (in terms of residential demand) will require image change strategies to form part of any regeneration programme (Norris *et al.*, 2019).

Lastly, this study shows that for regeneration, as for gentrification, residents' perceptions of change – in this case of social mix and ethnic diversity – matter for the achievement of other intended outcomes and may not match the intentions of planners (Durmaz-Drinkwater et al., 2020). The evaluation of regeneration programmes as complex interventions should therefore include the monitoring of residents' perceptions of compositional changes (in a qualitative as well as quantitative sense), not least for their importance for health and wellbeing outcomes (McCartney *et al.*, 2017). This should proceed on an ongoing basis during the course of what tend to be lengthy interventions, rather than on a before-and-after basis (Bond *et al.*, 2013), so that corrective or supportive actions can be taken where perceptions of neighbourhood changes become negative.

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Authors' contributions

Ade Kearns: Conceptualization, Funding Acquisition, Project Administration, Methodology, Writing-Original Draft Preparation; Dr. Johanna Jokio: Methodology, Formal Analysis, Writing-Review & Editing; Dr. Phil Mason: Methodology, Data Curation, Formal Analysis, Writing-Review & Editing

Disclosure statement

No potential conflict of interest was reported by the authors.

Data availability statement

Due to the nature of the consent given by participants, the data used in this study are not publicly available. Further information about the data can be sought from the data custodian: phil.mason@glasgow.ac.uk.

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