Is social mixing of tenures a solution for public housing estates?

Alan Morris, Michelle Jamieson, and Roger Patulny
School of Social Sciences
University of New South Wales 2052
Author contact: a.morris@unsw.edu.au

Abstract

The article reviews 11 primary studies that examine the impact of social mix on public housing estates. In a growing number of countries policy-makers view social mix as the key mechanism to address the problems often associated with disadvantaged public housing estates – unemployment, anti-social behaviour, poor educational performance and high levels of crime. It is argued that by dissipating the concentration of poverty and exposing public housing tenants to more mainstream residents, the opportunities of the public housing tenants will improve. Most of the studies found that there is little evidence that social mix will necessarily lead to a lessening of disadvantage among public housing tenants. However, social mix usually leads to an improvement of the urban fabric and housing stock, which in turn improves the atmosphere of the areas concerned. In neighbourhoods where social mix has evolved 'organically' over time, social mix is more likely to be a positive phenomenon. In areas where it has been introduced through deliberate government intervention, unless there is adequate consultation with tenants and high quality urban planning, social mix usually has minimal impact and can severely disrupt the lives of residents. The reviewed studies use a range of methodologies and outcome measures. There is no consensus on how social mix should be evaluated or what methodology should be employed.

In Australia and internationally, the problems associated with concentrated disadvantage in public housing[1] estates such as high levels of crime, unemployment, anti-social behaviour, neighbourhood stigma and poor education, are being tackled through the implementation of urban renewal strategies that focus on creating a social mix (Arthurson 2012; Atkinson and Kintrea 2008; August 2008; Bond et al. 2011; Wood 2003). The absence of social mix is used to explain the dysfunctionality that often characterises homogeneous public housing estates (Cole and Goodchild 2001). Social mix has come to refer to a specific understanding of what constitutes a functional and sustainable community, namely one that is heterogeneous in a range of aspects, including 'housing tenure, ethnicity and socio-economic characteristics of residents' (Arthurson 2008, 209).

The policy of social mix has a long and complex history. It has been traced as far back as mid-nineteenth century Britain, where it emerged (in a variety of forms) as a means of addressing the issues of deteriorating social and economic conditions and the spatial segregation of the working class from the middle class (Arthurson 2008a; Sarkissian 1976). In the last two decades in Australia, the United Kingdom, North America and numerous European countries, social mix has increasingly been

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[1] In Australia, in almost all cases, social mix created by direct government intervention has addressed public housing estates rather than community housing. Public housing is defined as housing supplied and subsidised by the federal and state governments. Access is limited to people in 'greatest need' and rents are restricted to 25 per cent of income.

presented as the solution for the problems that beset many public housing estates (Arthurson 2008b; August 2008; Bacque et al. 2011; Cole and Goodchild 2001; Galster 2007; Kleinhans 2004; Popkin et al. 2000).

Social mix policies are most commonly targeted at public housing estates as in many countries these sites are accommodating the most socially excluded sections of the population. In Australia, the media often portrays them as sites dominated by social dysfunction, and this narrative has contributed to a broader perception of public housing as a tenure of last resort (Arthurson 2012; Atkinson and Jacobs 2008; Marsden 2004). In the current debate on social mix, the problems associated with public housing relate to the changing demographic of residents occupying these estates (Atkinson and Jacobs 2008; Judd and Randolph 2006; Morris, 2012). While they were originally built to house low-income families, under-investment and a decline in the number of dwellings have led to greater targeting of households eligible for this type of accommodation and public housing now contains an increasingly residualised population; many have complex and/or special needs and are not in the labour force (Atkinson and Jacobs 2008).

The fundamental argument underlying the policy of social mix is that by reducing concentrations of disadvantaged residents through tenure mix the dysfunctional behaviours associated with a concentration of poverty are dissipated (Wilson, 1987; Wood 2003). The policy usually involves the demolition, redevelopment and sale of old public housing stock and the building of new housing aimed at middle class households, thereby creating a neighbourhood that contains a balance of homeowners, private renters and public housing tenants (Stubbs et al. 2005). In this sense, positive social and economic change in this sector is sought primarily through strategies of physical renewal and deliberate tenure mix (Arthurson 2012; Randolph and Wood 2004).

In discussions of social mix the question of whether tenure diversification actually alleviates the problems linked to concentrated disadvantage is contested. The efficacy of social mix is tied to a series of assumptions about what causes social problems in public housing estates and what measures can be adopted to counter them. These assumptions have been increasingly subject to criticism by researchers in this area, who observe a disjunction between the objectives of tenure diversification policies and the *actual* outcomes of these interventions as reported in empirical studies (Arthurson 2004; Stubbs et al. 2005; Wood 2003).

One of the key assumptions that informs social mix is that the homogeneity of tenure on public housing estates compounds the negative effects of poverty, and thus is itself a cause of disadvantage. As Darcy (2007, 348) states:

> "concentration of disadvantage" has come to be commonly accepted as itself a causal factor in the creation (or, at least, reproduction) of disadvantage, while its counterpoint, "social mix", is claimed to ameliorate disadvantage.

It is apparent that public housing estates experience higher than average levels of unemployment and welfare dependency and sometimes crime (Arthurson 2002). These characteristics are routinely attributed by policy-makers to the social exclusion of these communities from mainstream society – their limited access to job networks and social relations that could have important role modelling effects (Atkinson and Kintrea 2001; Wilson 1987). It is argued that the spatial separation of disadvantaged populations from wider society means they also remain cut off from the services, opportunities and social networks that come with being more socially and spatially integrated (Wilson 1996). In a recent statement, the Finance Minister for New South

Wales, who is also responsible for public housing, reiterated the view that large public housing estates were responsible for dysfunctionality: 'It's [large public housing estates] finished. It's a proven failure … in other parts of the world. It just creates cycles of disadvantage and it can't be managed' (Tovey 2012).

These issues have also been articulated through the discourse of area or neighbourhood effects. The practice of mixing tenures directly engages the theory of neighbourhood effects – that is, 'whether it is worse to be poor in a poor area or in an area which is socially mixed' (Atkinson and Kintrea 2001, 2277). The concept of neighbourhood effects raises questions about the causality of disadvantage; does the aggregation of poverty in certain areas worsen its experience? '[A]t what level of poverty concentration do area effects start to have an impact?' (2001, 2279). Or, to what extent can a neighbourhood be understood apart from the structural and economic processes of the broader urban context to which it belongs? A corollary of the assumption that disadvantage is further entrenched by spatial concentration is the view that a greater mix of tenures will produce a range of effects that break the cycle of social exclusion. Importantly, the primary mechanism by which this is said to occur is social interaction and the development of social networks between homeowners, private renters and public housing tenants (Arthurson 2010; Wood 2003). However, a number of commentators have argued that it is not clear whether physically mixing tenures actually leads to interaction between these different tenure groupings and that even if there is interaction whether this interaction has an impact (Atkinson and Kintrea 2000; August 2008; Stubbs et al. 2005).

Selection of studies

In choosing a list of empirical studies to review, an extensive search of a number of major electronic databases was carried out. The databases used were APAFT (Australian Public Affairs Full Text), FAMILY (Australian Family and Society Abstracts Database), ASSIA (Applied Social Sciences Index and Abstracts), BHI (British Humanities Index), British Periodicals, PAIS International (Public Affairs Information Service bulletin), Proquest Social Science Journals, Sociological Abstracts, and Scopus. Databases were searched for peer-reviewed journal articles and monographs that contained the following search terms in the title, abstract, text, or list of key words: 'social mix' and 'social inclusion'; 'social mix' and 'social interaction'; 'social mix' and 'public housing'; 'social mix' and housing, 'mixed tenure' and housing; 'mixed tenure' and 'social inclusion'. The search produced a total of 266 references.

These studies were selected on the basis of the following criteria. Most importantly, the articles and monographs had to be primary studies of social mix or mixed tenure projects, and conducted since 2000. This year was chosen as a cut-off as in the UK, Europe and Australia the last decade has seen a substantial increase in research on the impact of social mix. This is probably due to the spurt in government endeavours to create tenure diversification over the last two decades. The references collected were separated into two categories – primary and secondary studies of social mix and all primary studies published prior to 2000 were excluded. The secondary literature was searched for references to primary evaluations of social mix that had not been picked up through the search of the databases. From this pool a short-list of primary studies was decided on. In compiling the final selection the investigators aimed for a selection of studies from different national contexts (Australia, UK,

Europe and the USA) and a good balance of studies that used qualitative, quantitative and mixed methodologies.

The detailed analysis of the 11 articles chosen had two main aims: to assess the quality of the methodology and evidence in each study, and to summarise what the evidence suggests about the efficacy of social mix or mixed tenure strategies. Appendix 1 summarises the articles reviewed.

Social mix as an organic process in contrast to social mix achieved through deliberate government intervention

The review revealed that there are two contexts or situations in which social mix is studied: in areas where tenure mixing occurs organically over time or in neighbourhoods where social mix is the product of direct intervention by government. In organic neighbourhoods social mix would not be a product of deliberate government intervention whereas in interventionist neighbourhoods social mixing of tenures is created by direct and intentional government intervention. Of the 11 studies chosen, four focused on organic social mix and seven focused on social mix achieved by direct government policy. Organic studies were more likely to conclude that social mix was beneficial; while most of the interventionist studies concluded that the creation of social mix through direct government involvement did not significantly benefit public housing tenants.

As the introductory sections of this article outlined, the diversity of approaches to, definitions of, and methods of evaluating social mix have produced a body of primary evidence that is inconsistent, both in terms of what is being measured and the outcomes that are equated with success. This situation is reflected in the studies reviewed that employ a range of methods to assess a wide variety of outcomes; six used quantitative methods; three used a mixed methodology, and two used qualitative methods.

It is also noteworthy that there is a relationship between the type of social mix being examined and the methodology used. Most of the organic studies employed quantitative methods – probably because it is easier and more cost-effective to carry out research using national population surveys than it is to conduct new surveys of residents in these neighbourhoods. In contrast, most of the interventionist studies used qualitative methods or mixed methods. The studies that employed qualitative and mixed methods tended to focus more on assessing patterns of social interaction and the development of social networks. The quantitative studies mainly focused on the outcomes of urban redevelopment and on differences in outcomes across geographic areas distinguished by different levels of social mix.

What is social mix?

What constitutes a socially mixed neighbourhood is not straightforward. Social mix has been defined not only on the basis of mixed tenures, but also in terms of income, education, age, ethnicity, household type and gender of local residents (Atkinson, 2008; Kleit and Carnegie 2011). A mix of tenures is still the most commonly promoted indicator, given that it can stand as a proxy for mixed socio-economic classes and is perhaps easier for governments to influence than other kinds of mix. However, it evokes the key question of what proportion of homeowners, private renters and social renters within a given area ensures an optimal degree of mixing? As

Graham et al. (2009, 145) ask '… areas with a 50/50 split are clearly mixed, but how far either side of 50/50 split do we extend the range?' They argue that this question is crucial, as varying the levels of social mix may evoke different effects. Thus, they only find clear, positive associations between unemployment and limiting long-term illness in areas where social renters constitute less than 30 per cent of residents. Wards with between 10-19 per cent social renting were the only ones 'to demonstrate a significant advantage across all four social well-being outcomes' (percentage in the area who are unemployed, limiting long-term illness (LLTI), mortality ratio, and premature death rate) (2005, 149).

Interestingly, residents in the same estate, especially in areas where social mix has evolved organically, can have very different perceptions as to the level of social mix. In a study of 29 post-war estates in Europe, Musterd (2008, 903) asked respondents whether 'the estate was socially mixed, moderately mixed or socially homogenous'? In ten estates the dominant view was that the estates were socially mixed, however, in these estates about 18 per cent of respondents said that their estate is homogenous. Only three estates were dominated by a perception that the estates were homogenous. In 16 estates there was a wide diversity of opinion – about 26 per cent of respondents felt that their estates was socially homogenous; about 35 per cent that it was moderately mixed and about 40 per cent that it was socially mixed.

Evaluating the impact of social mix

Does social mix have the positive effects that its advocates claim? To what extent does the strategy of mixing tenures redress the social and economic problems often associated with public housing estates and what outcomes should be focused on to measure the impact of social mix? It is a complex epistemological and policy issue as there is a range of subtle and more obvious consequences and there are a number of stakeholders involved. In their study of the impact of social mix, Stubbs et al. (2005, 8) capture the difficulty when they pose the question,

> How does one understand the immediate and more long-term social impacts with any degree of accuracy? How does one assign weight to the quantified and unquantified costs and benefits to the immediate and wider community?

Social mix is a multifaceted phenomenon that intersects with debates about the causes of dysfunctionality and the impacts of poverty, public housing, the neighbourhood and social exclusion. The entanglement of these issues makes it hard to isolate distinct causes or to gain a clear understanding of how these issues might best be dealt with (Darcy 2007). This situation poses difficulties for the task of evaluating the impact of social mix. If the effects of social mix are to be assessed, then the problems (and their causes) that this policy is meant to address need to be well-defined. However, the complexity of the issues surrounding social mix has meant that approaches to the empirical study of social mix and thus their findings are diverse and often difficult to compare.

Empirical studies of the effects of social mix often measure for different outcomes. For instance, some measure for levels of the mix itself (Atkinson and Kintrea 2001), others for the degrees and types of social interaction between public housing residents and homeowners (Atkinson and Kintrea 2000; Beckhoven and Van Kempen 2003) and others for specific welfare outcomes such as a decline in unemployment and or crime rates (Allen et al. 2005; Randolph and Wood 2004). Another focus has been

whether the stigmatisation of a neighbourhood declines post the creation of social mix (Atkinson and Kintrea 2000). These different focuses are, to some extent, attributable to the use of distinct methodologies. Darcy points out that quantitative methods, especially measurement-centred approaches that focus on statistical indicators such as median household income and unemployment, are useful in revealing 'the frequency of disadvantage in a given location' (2007, 352). They provide evidence of how the extent or overall picture of disadvantage in certain areas changes over time, and produce data that are representative of the wider population being examined. However, simultaneously Darcy emphasises that the 'intensity' and lived experience of disadvantage is something that can only be captured using qualitative approaches. This point is echoed by Arthurson (2008b, 215) who, in speaking to the strengths of qualitative methods, writes:

> It is one thing … to measure the levels of social contact between home owners and social housing tenants but quite another to understand the intricacies of the processes of *how* and *why* contact does or does not occur.

Similarly, Judd and Randolph argue that the value of qualitative research lies in its utility in answering complex causal questions; it 'can provide a much richer understanding of the underlying social and behavioural dynamics associated with renewal and neighbourhood change' (2006, 106).

These discussions about the relative values of quantitative and qualitative approaches in evaluating social mix highlight the extent to which methods of study and forms of evidence are deeply implicated in the objects they investigate. Put crudely, specific methods reveal correlative truths about their objects (e.g. disadvantage can be characterised quantitatively, in terms of frequency, or qualitatively, in terms of lived experience). Because these methods offer distinct advantages, there is no singular approach or standard set of criteria that guide the assessment of mixed tenure strategies. The problem of how best to assess the efficacy of social mix strategies is compounded by the fact that globally the policies used to achieve social mix differ. For instance, in Australia, deconcentration is achieved primarily through the introduction of middle-income earners and home owners into areas previously dominated by public housing; however in the US, concentrations of poverty are dissipated through the creation of public housing at 'scattered sites' in non-minority neighbourhoods (Popkin et al. 2000).

Several commentators are critical of the inconsistencies in evaluations of social mix. Goodchild and Cole (2001) conclude that the literature on social mix is 'scattered' and poorly coordinated, as it comprises a mixture of academic studies and evaluation studies commissioned by state housing authorities. Calling for more reliable forms of evidence, Arthurson states that 'government agencies lack the resources to develop complex, methodically organised, and rigorous analyses of the research evidence to assess the effects of … social mix policies' (2004, 104). Bond et al. (2011) argue that reviews of the evidence for mixed tenure policies (reviews of primary studies) need to be more systematic and critical.

In view of this dilemma, this article focuses on the epistemological issues that arise from empirical studies of social mix. It is concerned with, and investigates, how knowledge about the efficacy of social mix is produced – that is, the methods used, findings gathered, and quality of the resulting evidence. It specifically addresses the question of how social mix and its effects are *measured* – the outcomes. The review is guided by two sets of research questions. Firstly, it seeks to uncover what the primary evidence suggests about the efficacy of social mix. Does social mix work and, if so,

under what conditions does it work? Secondly, it evaluates the methodologies used and evidence produced by these studies.

Social contact and interaction

Social contact and interaction between residents from different housing tenures has been presented as a key outcome for which social mix should strive. The benefits that will accrue from social contact across tenures and why these will occur, however, are not at all clear. The underlying assumption is that by exposing disadvantaged households to middle class home owners the former will be reintegrated and social exclusion will be lessened (Wilson 1986). Implicit is the notion that the middle classes are role models that will be emulated, especially if there is social contact between homeowners and renters. A study by Atkinson and Kintrea (2000) of three Scottish public housing estates where regeneration has taken place set out 'to measure the potential of owner-occupiers to influence social networks among housing estate residents and hence to influence positively the patterns of social inclusion' (2000, 97). Thirty-eight households were asked to keep a diary (29 owners and 11 renters) and record their activities and movements over a week. In addition 49 in-depth interviews were conducted. The dual methods employed allowed the researchers to gain a detailed account of the movements and social interactions of residents inside and outside their local area, while simultaneously gathering data about the specific factors that enable or inhibit different patterns of movement. The study showed that the owners and the renters occupied different social worlds and used the neighbourhood in different ways. The former conducted most of their activities outside of the neighbourhood, whereas the public renters used the neighbourhood for most of their social and family activities. There was minimal social interaction between owners and renters and when there was contact 'there [was] little sign of benefits being brought to renters through their contacts with owners' (2000, 104). Overall, they found tenure mixing to be unsuccessful in generating the level of social interaction needed to 'reconnect' and 'reintegrate' disadvantaged residents into the mainstream (2000, 94).

A qualitative study of social mix by Arthurson (2010) reached a similar conclusion. Her study explored the barriers that prevent social mixing among residents of different tenures and incomes living in three regenerated estates in Adelaide, Australia. She critically examined the assumptions foundational to social mix policies, that propinquity provides the necessary conditions for facilitating social interaction between social housing tenants, private renters and homeowners. Drawing on 40 in-depth interviews with these different groups of residents, Arthurson identified three key factors that play a fundamental role in mediating social interaction: lifestyle factors (such as busy lifestyles of working families and age mix); the design and scale of implementation of social mix, and stigma of social housing. She found that homeowners were too busy to interact and social contact with public housing residents was minimal. The one realm where social contact did occur was in the local schools. The children came from all tenures and this facilitated some contact between parents from different tenures.

Beckhoven and Van Kempen (2003) conducted a survey of two completed urban regeneration sites in Amsterdam and Utrecht in the Netherlands. They found that social contact between the old and the new residents was negligible: 'people in the neighbourhood seem to live alongside each other, not together' (2003, 871). A key finding was that most residents, old and new, but more especially the latter, conducted all or almost all their social activity outside of the neighbourhood. Households with children were more likely to undertake activities within the neighbourhood and there

was resultant contact between the parents. However, 80 per cent of new residents sent their children to a school outside of the neighbourhood. Elderly residents also carried out most of their social activities in the neighbourhood. They found that long-established residents felt a strong bond with the area, but that 'newcomers have a weak or moderate bond' (2003, 868). Also, residents in Amsterdam had a stronger bond with the neighbourhood than did their counterparts in Utrecht. This was mainly due to the former being more car free and child-friendly.

While the Atkinson and Kintrea, the Arthurson and the Beckhoven and Van Kemen studies tended to view social mix as unsuccessful, at least in terms of facilitating social interaction among different tenure groups, other studies come to less critical conclusions. For example, a mixed methods study (Census data; interviews; focus groups and the keeping of diaries) by Allen, et al. (2005) of three carefully designed mixed tenure areas in England, twenty years after their establishment, illustrates that high quality urban planning and a minimizing of differentiation in housing can facilitate social contact between public housing renters and owners and that close social contact is not a necessary condition for social mix to be considered successful. Rather, they conclude that what is required is some degree of mutual respect and cooperation and the perception that your fellow residents are just 'ordinary people' who happen to live in the same neighbourhood. The physical sameness of the housing and the fact that the neighbourhoods were sought after places to live rather than places of last resort, meant that there were not tenure schisms in the neighbourhoods concerned. Although social networks between owners and renters were not extensive, there was a lot of 'bumping into each other' and neighbourly and civil interaction. An interesting aspect of the study is that children and young people were interviewed. The children had no notion of tenure differences and this was reflected in their friendships. The qualitative components of Allen et al.'s study are comprehensive – all individuals involved in and affected by the renewal project were consulted (adults and children and a range of stakeholders), and consequently, the whole community was represented in the data. Focus groups, interviews and diaries provided strong evidence of the positive impacts of redevelopment

A longitudinal study of social and ethnic mix in the 'High Point' public housing redevelopment site in Seattle conducted by Kleit and Carnegie (2011) compared the social and job networks of original residents who moved away from the area to those who returned after the redevelopment was complete. In regards to social ties, they found no differences in heterogeneity between residents who did not return and those who returned. In terms of job ties, there were also no significant differences. The only substantial demonstration of improved heterogeneity is that Vietnamese residents who returned to High Point experienced more ethnic mixing. Although the social mix of High Point increased substantially after redevelopment there was little shift in social or job ties. The authors (2011, 163–64) conclude:

> It may be that education, work and homeownership are huge barriers in terms of social distance while ethnicity is less of a barrier … Alternatively, these results might simply echo results from other mixed-income sites that found little mixing among people of varied incomes … proximity is not enough for mixing to occur

This study is one of the few to incorporate a random (where appropriate) quantitative survey of tenants before and after redevelopment with good measures of network connections and social mix, using appropriate longitudinal (multi-level) modelling techniques. The drawbacks include the lack of a control group of prior off-site people to test for prior difference in populations; a relatively small sample limited

to one site with two ethnic groups, and a sample somewhat biased towards female respondents.

Noteworthy is that without careful planning and extensive consultation, government interventions to create social mix can seriously undermine existing social networks and create substantial distress, rather than encouraging social contact and a sense of community. A mixed method study of the impact of enforced tenure mix in Minto, a large public housing estate in Sydney, found that the social networks of residents were seriously disrupted by the redevelopment (Stubbs et al. 2005). The study is potentially biased as it was instigated by the Minto Resident Action Group in direct response to residents' dissatisfaction with the redevelopment process, and its methodology and findings were probably influenced by the involvement of residents in the research. The study differs from the other primary studies considered in this review with regards to the timeframe of its analysis and the particular effects it evaluates. Rather than measuring for long-term outcomes of social mix, Stubbs et al. conducted an in-depth investigation of how public housing residents experience the *earliest* stages of the urban redevelopment process. The primary tool used in the study was a resident survey developed with the Minto Resident Action Group. The study concluded that the social impacts of the redevelopment for many residents were devastating. Residents who were moved, according to Stubbs et al. (2005, 99):

> … report the sense of loss of community, friends, neighbours and networks. Even after a reasonable settling in period, they still describe the sense of loneliness, displacement … in their new area

Stubbs et al. question whether a trade-off can be made between the immediate social impacts of urban redevelopment (the destruction of existing communities and housing stock, and general distress and anxiety caused by mismanagement), and its proposed long-term benefits.

Stigma

The issue of whether social mix reduces the stigma of neighbourhoods is another important outcome that has been investigated. A central argument of policy-makers is that neighbourhoods dominated by public housing are subject to stigma and that this can be countered by social mix. Again the results are inconclusive. The Allen et al. (2005) study suggests that with careful planning, the key aspect being not to differentiate the housing stock of owners and renters and not to have concentrated pockets of the respective tenures, stigma can be fundamentally addressed. However, there is certainly no guarantee that social mix will eliminate stigma. Thus Mustard (2008) found that 'Estates with relatively good, relatively bad and very bad reputations can be found both in highly mixed and in moderately mixed situations' (2008, 906). This finding is echoed in Arthurson's (2010) study. She found that private renters and owners continue to have a negative view of those parts of the neighbourhood where public housing tenants are resident. In their study of Scottish housing estates where social mix had occurred, Atkinson and Kintrea (2000) found that although stigma had lessened, owners continued to disapprove of tenants: 'Estate people are viewed as layabouts, drug addicts and trouble-makers' (2000, 102).

Social well-being

A central argument of social mix proponents is that the social well-being of public housing tenants in homogenous neighbourhoods is worse than that of tenants in

socially mixed areas. The key well-being outcomes explored are employment and health. In regards to employment it is argued that social mix through lessening stigma and increasing cross-tenure social contact and exposure to middle class values enhances employment possibilities (Wilson 1996).

Studies by Graham et al. (2009), Randolph and Wood (2004) and Musterd and Andersson (2005) using Census data suggest that social mix does not necessarily have an impact on employment. The study by Graham et al. of organically mixed neighbourhoods using the 1991 and 2001 census of Great Britain found that a key determinant of employment success was the level of social mix. In wards where social renting constitutes less than one third of all housing, tenants 'show a significant advantage in relation to levels of unemployment …' and in wards with 30 per cent or more social housing there is 'little or no advantage over monotenure wards' (2009, 149–150). This is a significant finding as what it suggests is that a conventional notion of social mix, a 50/50 split or even a 65/35 split will not necessarily have an impact. Musterd and Andersson (2005) used the 1991 and 1999 Swedish Census to measure housing mix, social (income) mix, and ethnic mix, and how they link to maintaining continuous employment across the period. Residents of homogenous low-income areas with a high number of refugees had the lowest chance of staying employed throughout the period under investigation. A mixed methods study by Randolph and Wood (2004) of four public housing estates in Australia that had undergone urban renewal (another four public housing estates that had not experienced social mix were used as a control, reached a similar conclusion. The quantitative element consisted of analyses of census data from 1996 to 2001 to determine social and tenure changes in the eight case study estates. Randolph and Wood found that there was no evidence that social mix had enhanced employment opportunities.

All of the three carefully planned neighbourhoods examined by Allen et al. (2005, 3) 'have consistently low levels of unemployment and benefit dependency' and residents perceived that unemployment in neighbouring estates was 'much higher'. Residents argued that the 'up market' reputation of the three neighbourhoods had an impact on economic activity in their areas.

The study by Graham et al. (2009) looked at three other measures of social well-being, limiting long-term illness (LLTI), mortality ratio, and premature death rate. The study found evidence of area 'threshold' effects, in that wards with less than 30 per cent social renting and a predominance of owner-occupiers, report lower than predicted disadvantage; those with 30-39 per cent social renting reported no significant difference, and wards with 40 per cent or more social renting report higher than predicted disadvantage (worse outcomes) in both 1991 and 2001. However, they also found that the degree of tenure mixing *within* the ward (similarity) produced mixed outcomes, with high levels of mix having no affect on unemployment, improving LLTI, and changed from predicting better outcomes in mortality and premature death in 1991 to worse outcomes in 2001. They conclude, 'Overall, our analysis has demonstrated little support for the hypothesis that mixing tenures is good for social well-being' (2007, 160).

Quality of the physical environment and services

Probably the most tangible and uncontroversial outcome of deliberate social mix policies is whether they result in an improvement in the physical environment. The studies reviewed indicated that in most instances there was a significant enhancement of housing quality and general appearance. For example, van Beckhoven and van

Kempen (2003, 869) comment that 'Respondents are particularly positive about the changes that have taken place in the quality of living, the increased space, the green areas and the image of the neighbourhood'. The redevelopment linked to the implementation of social mix improved the facilities and atmosphere of the social mix areas. Similarly, Randolph and Wood found that the 'Asset values for the remaining public house stock had been greatly enhanced' (2004, 31) and visually the areas had improved significantly. The findings suggest that social mix had made the renewal areas more desirable, as evidenced by local rising house prices and private sales.

Anti-social behaviour

A central stated policy objective of social mix is to reduce anti-social behaviour, which has been associated with disadvantage and concentration of poverty (Wilson 1996). Kearns and Mason (2006) analysed the Survey of English Housing (SEH) from mid 2001 to 2003. They used logistic regression modelling and plotted observed versus predicted 'problems' against concentrated tenure percentiles within areas to look for 'threshold' effects. Social mix was measured using the Shannon Weaver Equitability Index of tenure diversification and percentages of private and social housing. Outcome measures included neighbourhood problems, neighbourhood satisfaction and perceptions of necessary service improvements and whether the neighbourhood was improving or declining. Respondents were read a list of problems and asked which one was a problem in their neighbourhood. For nine of the ten problems (vandalism, graffiti, crime, dogs, litter, neighbours, racial harassment, noise, traffic and other harassment), the one exception is traffic, the areas dominated by social housing reported the most problems; the mixed areas where owners were in the majority, reported far fewer problems and the owner dominated areas reported the least. Their research suggests that social mix has an impact in that areas with high concentrations of social renting reported the worst outcomes and most service needs (especially by social renters themselves), while mixed areas reported less, and owner dominated areas the least. They also suggest that 'balanced' mixing does not work. In order for social renters to really benefit the area needs to be dominated by owner occupiers: 'social renters appear to gain a great deal in neighbourhood environment terms from living in areas of high owner occupation' (Kearns and Mason 2006, 687). They did not identify any thresholds, or proportion of owners verse tenants, at which this starts to take effect. The study has the advantage of being a large sample study applicable across many small-areas (such as wards). However, it did not evaluate social mix redevelopment policies or differentiate between evolved and created social mix areas; it used cross sectional data only so could not look for effects over time or control for unobserved heterogeneity, and did not measure key variables such as income and the actual networks of people in the survey.

Conclusion

The review suggests that in neighbourhoods where social mix has occurred organically, social mix is more likely to be a positive phenomenon. In these neighbourhoods social renters are more likely to have social connections across housing tenures; their employment prospects are greater and the area is less likely to be stigmatised. In contrast, in neighbourhoods where deliberate government intervention has resulted in social mix, the positive effects are usually limited to the physical urban and housing renewal aspects. Social ties for the most part remain

bounded, there is not necessarily an increase in employment opportunities and the intervention can result in close friendship and kinship connections being seriously disrupted.

The studies reviewed here provide a mixed picture of the success of social mixing of housing tenures. Success has been most apparent in achieving an improvement in the quality of the physical environment, but less so in achieving a degree of social interaction and contact across tenures groups. Whether this is a necessary condition for concluding that social mix is successful is questionable. The degree of success, according to these studies depended on the detail of the programs along a number of key dimensions. Most notable are the three mixed tenure neighbourhoods studied by Allen et al. (2005). They are comprised of owner occupied and rented housing and the similarity in design blurs tenure distinction. Also, they demonstrate extensive planning; the provision of cycle-ways, play areas, good local services and an improved physical environment were part of the renewal project. Their research suggests that the key to mixed tenure environments being successful is that they are well-planned and that there be no or minimal differentiation between owner-occupied and public housing dwellings.

A summary of the key planning factors that may affect the success of social mix policies that emerge from this review are:

- *The quality and homogeneity of the housing across tenure groups.* For purposely built social mix neighbourhoods to be successful it is important that differences between privately owned and social housing be negligible and the physical placement of homes is random within the estate, thereby creating a genuine physical mix of tenures. When this occurs residents tend not to take cognisance of tenure status.
- *The quality of the urban planning and facilities in the area.* Another key feature contributing towards the success of social mix is the physical layout and high quality of the services provided. Well-planned and attractive areas ensure that the neighbourhoods concerned remain desirable and that stigma attached to living in the areas concerned is minimised. Good services and facilities in the neighbourhood encourage residents to use the local neighbourhood for most of their activities. This encourages a sense of belonging and facilitates casual interaction between residents.
- *Presence of children.* The presence of children and a good neighbourhood school encourages contact between children from different tenures and the parents. The studies indicate that children are more likely to establish friendships that were not bound by tenure.
- *Adequate and transparent consultation with residents.* The study by Stubbs et al. (2005) suggests that if the establishment of social mix by government intervention is to be successful it is crucial there be substantial and transparent discussion between the public housing residents affected and the government bodies responsible for the intervention. Residents need to be given every opportunity to make a contribution as to how the social mix strategy will unfold. This could prevent serious disruption and resentment.
- *The level of mix.* Social mix does not necessarily contribute to the well-being of social housing tenants. The study by Graham et al. (2009) concludes that only when the proportion of social renters drops below a certain proportion is there evidence that their social well-being is enhanced.

Often, the proponents of social mix tend to *infer* that because areas that are organically mixed tend to have better outcomes, deliberately mixing tenures in another area will bring about the same result. This review suggests that physical renewal alone and the mixing of tenures are not enough to facilitate the kind of social cohesion that gives rise to long-lasting change. They force us to think about how a social mix is created that is not merely a physical phenomenon. The studies point to the need for more consultative and systemic approaches to achieving social mix. Additionally, in illustrating that homeowners, private renters and public housing tenants move in different social networks which do not often overlap, the studies show that the idea of building shared social networks may not accord with the realities of contemporary social life. Put simply, the findings imply that this may be an unrealistic expectation, and that it is not necessarily a prerequisite for functional, socially cohesive neighbourhoods (Allen et al. 2005).

The lack of supportive evidence for the efficacy of social mix is at least in part due to the difficulty of setting up a study that covers all the requisite aspects – organic and interventionist, quantitative and qualitative. What appears to be missing is a real 'gold standard' quasi-experimental study of social mix. A study in this vein would

- explore both organic and interventionist aspects in tandem;
- match up individual level social networks and outcomes of both social housing and private residents with neighbourhood characteristics quantitatively;
- examine contextual factors and processes qualitatively, including resident perceptions and experiences of their local neighbourhood and redevelopment processes;
- investigate dynamics before and after redevelopment and mixing has occurred, following participants who stay and leave the area, and
- include control sites where a similar intervention had not occurred.

Such a study conducted across several sites would enable a multifaceted and rich picture of the efficacy of interventions to be established.

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Appendix 1 Summary of the studies reviewed

Author (year)	Methodology and context	Social mix measures	Outcome measures	Findings	Quality of evidence and methodology
1. Kleit and Carnegie (2011)	**Interventionist study** **Quantitative** Longitudinal, US public housing estate, sample of English (n=173, rr=68%) and Vietnamese-speaking residents (n=79, rr=79%), interviewed before (2001-2003) and after redevelopment (2008). Used multi-level logistic regression modeling techniques with random effects.	Measured the diversity of individual level employment and social networks (talked about jobs vs. personal matters) and friendship/kin networks (friendship, relatives, neighbours) by sex, race, occupation, education and income-proxy (homeowner). Used Index of Qualitative Variation (IQV) as 0-1 scale of heterogeneous alters.	Diversity of social and employment ties and levels of ethnic mix.	In regards to social ties, they found no differences in heterogeneity between residents who stayed off-site and those who returned. In terms of job ties, there were also no significant differences. The only substantial demonstration of improved heterogeneity is that Vietnamese residents who returned to High Point experienced more ethnic mixing.	**Strengths** - Clear measures of social mix (social connections - Before and after measures - Appropriate longitudinal (multi-level) modeling techniques **Weaknesses** - No control group - Small sample, one site, two ethnic groups only, ethnically/gender biased - No outcomes - Model controls limited
2. Arthurson (2010)	**Interventionist study** **Qualitative** 40 in-depth interviews with residents of different tenures on 3 regenerated Adelaide estates (16 homeowners or buyers, 14 social housing tenants, 10 private renters). Participants recruited through an expression of interest form posted to 800 residents across the 3 case study estates.	Proportion of social housing in each case study area.	Social interaction between different income groups and tenures; reduced stigma of social housing.	Three factors acted as barriers to social interaction between residents of different tenures: - Lifestyle (busy lifestyle, social networks outside local area, age mix of residents), - Design and scale of implementation of social mix, - Stigma of social housing. One factor facilitated greater levels of mixing among tenures - children and schools.	**Strengths** - Interview data offers a rich, multi-faceted account of lived experiences of residents addressing gaps in literature about factors that affect social interaction. **Weaknesses** - Residents of different tenures unequally represented in interview data. - Design and scale of implementation of social mix was not outlined with respect to case study estates.

Author (year)	Methodology and context	Social mix measures	Outcome measures	Findings	Quality of evidence and methodology
3. Graham, Manley, Hiscock, Boyle and Doherty (2009)	**Organic study** **Quantitative** 1991 and 2001 census of Great Britain and mortality registration data. Use generalised linear models (GLM) to test observed vs. predicted outcomes across different social mixes.	Percentage in social renting vs. ownership, and Index of Dissimilarity – how unevenly spread social housing renters are within a ward.	Four measures of Social Wellbeing - percentage unemployed; limiting long-term illness (LLTI); mortality ratio, premature death rate.	Wards < 30% social renting report lower than predicted disadvantage Wards with 30-39% social renting report no significant difference with … Wards > 40% social renting report higher than predicted disadvantage Similarity (even spread) of social housing within wards results in no impact on unemployment, improved LLTI, and better outcomes in mortality and premature death in 1991 but worse in 2001.	**Strengths** - Appropriate modeling techniques (GLM) - Longitudinal analysis - Identifies positive area 'threshold' effects, in wards with > 40% private owners - Accounts for dissimilarity within the ward **Weaknesses** - Census model controls – no income measures - No questions on individual social connections and mix - Number of wards shrank between 1991 and 2001 - Unclear if social or private tenants benefit from mix
4. Musterd (2008)	**Organic study** **Quantitative** Used 2004 EU RESTATE interviews (4756 in total) across 29 housing estates in 16 European cities (n=7,756, min 100 per estate, rr=47%). K-means cluster analysis undertaken; logistic regressions.	Perceptions of whether the estate was mostly mixed, partly mixed or homogenous	Contact with residents; have friends and relatives who live there; whether residents give mutual help; residents' perceptions of value of social mix; perceptions of reputation of the estate.	They identified strong, middle and weak clusters of social mix. More socially mixed estates had stronger social networks and better neighbourhood reputations Those likely to support social mix included social renters, average income renters, and Northern Europeans, and residents in homogenous estates Those unlikely to support social mix were residents with moderate social networks in majority ethnic areas, owner occupiers, and socially mixed residents listing 'other people' as problems. Residents' opinions of social mix are linked to the perceived strength of their social networks.	**Strengths** - Individual level survey with questions about social networks and stigma - Appropriate multivariate analysis - Large sample across many European housing estates - Methodological emphasis on residents' opinions and perceptions of social mix **Weaknesses** - Slight sample bias - older residents overrepresented and black/ethnic minority residents underrepresented. - Does not examine before and after redevelopment - Does not detail specific social mix policies and how these have been implemented on the different case study estates.

Author (year)	Methodology and context	Social mix measures	Outcome measures	Findings	Quality of evidence and methodology
5. Kearns and Mason (2006)	**Organic study** **Quantitative** Survey of English Housing (SEH) mid 2001-2003 (n=39,175, rr=72%), analysed at the level of wards, using logistic regression modeling. Plotting problems against concentrated tenure percentiles to look for 'threshold' effects.	Shannon Weaver Equitability Index – of tenure diversity, and % private and social housing at the ward level	Neighbourhood problems (e.g. crime, sanitation, racial harassment), neighbourhood satisfaction (scale 5 pt.), and perceptions of whether neighbourhood improved or declined (scale 5 pt.) and necessary service improvements (e.g. housing, jobs, health, transport)	Areas with high concentrations of social renting report the worst outcomes – particularly by social renters themselves, excepting some crime and noise/traffic. However, more problems for owners in predominant social housing wards than social housing residents in predominant owner wards Desire for service improvements consistently decreases with % private renters (public transport among social renters excepted) Findings suggest owners must dominate, but the effects are linear (no thresholds apparent)	**Strengths** - Large sample - Many outcome measures **Weaknesses** - No evaluation - Cross sectional data only, - Does not measure income - Wards are larger than local neighbourhoods where effects might occur - Does not measure the actual networks of people in the survey

Author (year)	Methodology and context	Social mix measures	Outcome measures	Findings	Quality of evidence and methodology
6. Allen, Camina, Casey, Coward and Wood (2005)	**Interventionist study** **Quantitative** Analysis of census returns in three estates in the UK from 1981 to 2001. **Qualitative** Face-to-face interviews and focus groups with stakeholders (15 housing and planning officers, 8 head teachers, and 4 active residents). Diaries kept by residents (30 households from each area) to record social activities and interactions for one week. Face-to-face interviews with some diarists. Focus groups with children (7-8 and 10-11 years) and interviews with 11 teenagers about their views and experiences of living in mixed tenure areas.	Proportion of social housing in each estate area; shared social networks among renter and owners	House prices, employment, levels of social interaction across tenures, visibility of tenure differences, area reputation.	All areas increased in desirability. Owners and renters viewed each other as 'ordinary', recognising their similarities. Similarities in housing design blurred tenure differences. However, owners and renters occupied distinct social worlds/networks. Relationships between renters and owners were polite rather than close. Strong social ties between children of different tenures. Residents were happy with the quality of the physical environment and local services. Aspects of the planned environment facilitated social interaction (e.g. footpaths and cycle ways).	**Strengths** - Innovative study to measure social mix and outcomes - Evaluation of mature housing developments offers evidence of long-term effects of mixed tenure. - Comprehensive mixed methodology represents the views of all involved parties. **Weaknesses** - Only examines one type of mixed tenure community, which is not the most common. - Specific outcomes of social mix (e.g. role model effect, anti-social behaviour) inferred through more general variables (e.g. level of social integration, desirability of area). - No individual survey of attitudes or networks of residents - No link to outcomes - No distinction between social vs. private residents - No control sites - Some sample bias – findings not applicable to ethnically diverse communities.

Author (year)	Methodology and context	Social mix measures	Outcome measures	Findings	Quality of evidence and methodology
7. Musterd and Andersson (2005)	**Organic study** **Quantitative** Longitudinal subset of data from Swedish census, 1991 to 1999. Data on all Swedish residents aged 16-65 years in 1991 was used. The study used SAMS (Study Area Market Statistics) as its primary information breakdown unit. N>5.5 million people or N=9218 SAMS – Social Mix. Used descriptive statistics and cluster analysis.	**Three indicators measured at neighbourhood level:** **Housing mix** Eight living arrangement combinations of rental ownership (private own, or private, public cooperative rent) and single vs. multi-family. The study calculates Shannon Weaver Equitability Index index, or neighbourhood housing homogeneity measure ranging from 0–1. **Social (income) mix** Male income deciles divided into 3 categories, then 5 categories of absolute deviation from the expected distribution of income across those decile categories within the neighborhood (low = less than 15%; high = more than 25%) **Ethnic mix** Nationality and refugee concentration within neighbourhoods, ranging from 1 to 35+ nationalities and from less than 2% to 10%+ refugees	Social mobility and opportunity. Employment status (employed, unemployed); continuous employment over the period of the study.	Stronger concentrations of high-income than low-income groups. Areas with high refugee and low-income concentrations occur in both very homogeneous and very heterogeneous housing areas (regardless public/private mix). (Pattern not evident in areas with over 34 nationalities). No clear relationship between housing mix and social mix. Employment opportunities lowest in low-income homogenous areas and highest in homogeneous, high-income areas. Income mix alone does not predict opportunity. Poor areas with high proportion of refugees have high temporary or permanent unemployment. 2nd gen refugees (w/ two foreign born parents) have worse employment outcomes than their 1st gen immigrant parents. Overall, income and ethnic (refugee) mix predicts social opportunity (employment), but housing mix alone is not a significant indicator. Those who live in low-income, homogeneous housing type neighborhoods tend to have lower chances of staying employed. Thus homogeneity of housing and income levels, combined, are a strong predictor of social opportunity.	**Strengths** Large sample Nation-wide longitudinal study. **Weaknesses** - Social mix measure only includes male income – no measure of female income, under-represents single mother households, which may be strongly concentrated in public housing. - Study assumes neighborhood composition remains stable throughout the study period. Discounts gentrification or ghettoisation. - Assumes that residents remained living in the same neighborhoods for the entire study period. Movements were not corrected for. - Study covers only labour force participants. Excludes retirees and youth. - Does not look at other indicators, such as crime or social contact. - Does not look at other forms of participation (e.g. study, care work, community involvement).

Author (year)	Methodology and context	Social mix measures	Outcome measures	Findings	Quality of evidence and methodology
8. Stubbs, Foreman, Goodwin, Storer and Smith (2005)	**Interventionist study** **Qualitative** A participatory methodology used to assess the social and economic impacts of the early stages of the Minto redevelopment in Sydney. **Quantitative** 180 households from three precincts surveyed using a resident survey developed in consultation with the Minto Resident Action Group (contained closed and open-ended items).	Tenure mix.	Social and economic impacts of the redevelopment process (demolition and displacement) on existing public housing residents.	Strong social networks existed in two of the three precincts; 65% of residents surveyed had family in Minto or neighbouring suburbs. Residents had no involvement or input in the redevelopment process, causing major social impacts - residents felt disempowered and distressed. Redevelopment process was disorganised and mismanaged. No Environmental Impact Statement or Masterplan of redevelopment was prepared before demolition.	**Strengths** - Uses a strong reflexive methodology prioritising participation of residents in the research process. - Provides evidence of the negative impacts of the redevelopment process on existing residents, which are rarely assessed. **Weaknesses** - Only evaluates one case study area - Early time frame of analysis means definitive claims about efficacy of social mix cannot be made.
9. Randolph and Wood (2004)	**Interventionist study** **Quantitative** Analysis of census data from 1996–2001 re tenure and social changes in 8 areas across 4 Aus states (QLD, SA, NSW and WA) – 4 undergoing renewal and 4 controls. **Qualitative** Semi-structured in-depth interviews with 21 key stakeholders (state housing authority and local housing management staff). 3 focus groups in each state; a group of tenants and new homeowners in each renewed estate, and a group of tenants from each 'control' estate.	Proportion of public housing in each estate area.	Asset management outcomes (e.g. value of housing stock) Housing management outcomes (e.g. reducing concentration of public housing, effects on public housing waiting lists) Social welfare outcomes (e.g. social cohesion, stigma, employment, etc.) No quantitative outcome measures.	Social mix increased in these areas, not only through renewal, but through increasing private sales. Community 'spirit' increased, but social networks between tenants and homeowners did not develop. Evidence for social welfare outcomes – including levels of employment, crime, anti-social behaviour, quality of schools and local services – was limited. Property values of new and renovated stock in renewed estates increased. Renewed estates experienced a reduction in stigma.	**Strengths** - Mix of sites - those undergoing renewal and controls - Study is comprehensive in the range of outcomes of social mix and tenure diversification it measures. - Study methodology allows for a comparison of stakeholders' and residents' views of the outcomes of tenure diversification. **Weaknesses** - No individual survey of attitudes or networks of residents, - No link to outcomes - No distinction between social vs. private residents - No outcome measures - Short time frame of evaluation (5-10 years)

Author (year)	Methodology and context	Social mix measures	Outcome measures	Findings	Quality of evidence and methodology
10. Beckhoven and Van Kempen (2003)	**Interventionist study** **Quantitative** Survey of old (121) and new (248) households in two (completed) urban regeneration sites (n=371, rr=52%), and report descriptive statistics only.	Daily activity location (local or outside area, café, visit friends, shopping, recreation) and neighbourhood bonding (measures not specified).*	Perceptions of changes following urban regeneration.	New residents much more likely to go outside the area for activities. New residents less likely to feel neighborhood bond, particularly older, high income educated owners. Most older residents generally thought the changes made things better.	**Strengths** - Sufficient sample size - Mixing old and new residents **Weaknesses** - Did not examine the situation before regeneration - Variables not clearly defined - Old vs. new is not the same as social vs. private - No multivariate analysis
11. Atkinson and Kintrea (2000)	**Qualitative** Diaries completed by 49 residents (of 38 households – 27 owners and 11 renters) from 3 Scottish estates, describing the daily activities of individuals for 1 week. Participants recruited through letters and home visits by the researchers. In-depth interviews with study participants.	Daily activity location (inside and outside local area), social interaction and sense of community between renters and owners.	Social inclusion and integration - reconnection of socially excluded groups through agency of homeowners.	Social housing tenants are isolated from wider society, whereas owners are connected with wider society. Renters and owners occupy different social worlds (due to work, leisure, car travel, location of relatives). Spatial proximity of renters and owners does not in itself facilitate social interaction. Local contact between renters and owners is minimal and does not necessarily benefit renters.	**Strengths** - Taken together, diary and interview data offer strong evidence in response to the key research question (Does owner-occupation 'reconnect' disadvantaged residents to wider society?) **Weaknesses** - Number of owners and renters studied is unequal. - More female than male study participants - Does not assess effects of social mix beyond social interaction (e.g. employment, crime, etc.) Small sample