RESEARCH
SERIES
NUMBER 154
FEBRUARY
2023

HOUSING ADEQUACY AND CHILD OUTCOMES IN EARLY AND MIDDLE CHILDHOOD

JAMES LAURENCE, HELEN RUSSELL AND EMER SMYTH

ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

HOUSING ADEQUACY AND CHILD OUTCOMES IN EARLY AND MIDDLE CHILDHOOD

James Laurence

Helen Russell

Emer Smyth

February 2023

RESEARCH SERIES

NUMBER 154

Available to download from www.esri.ie

https://doi.org/10.26504/rs154

ABOUT THE ESRI

The mission of the Economic and Social Research Institute is to advance evidence-based policymaking that supports economic sustainability and social progress in Ireland. ESRI researchers apply the highest standards of academic excellence to challenges facing policymakers, focusing on 12 areas of critical importance to 21st Century Ireland.

The Institute was founded in 1960 by a group of senior civil servants led by Dr T.K. Whitaker, who identified the need for independent and in-depth research analysis to provide a robust evidence base for policymaking in Ireland.

Since then, the Institute has remained committed to independent research and its work is free of any expressed ideology or political position. The Institute publishes all research reaching the appropriate academic standard, irrespective of its findings or who funds the research.

The quality of its research output is guaranteed by a rigorous peer review process. ESRI researchers are experts in their fields and are committed to producing work that meets the highest academic standards and practices.

The work of the Institute is disseminated widely in books, journal articles and reports. ESRI publications are available to download, free of charge, from its website. Additionally, ESRI staff communicate research findings at regular conferences and seminars.

The ESRI is a company limited by guarantee, answerable to its members and governed by a Council, comprising 14 members who represent a cross-section of ESRI members from academia, civil services, state agencies, businesses and civil society. The Institute receives an annual grant-in-aid from the Department of Public Expenditure and Reform to support the scientific and public interest elements of the Institute's activities; the grant accounted for an average of 30 per cent of the Institute's income over the lifetime of the last Research Strategy. The remaining funding comes from research programmes supported by government departments and agencies, public bodies and competitive research programmes.

Further information is available at www.esri.ie.

THE AUTHORS

James Laurence is a Senior Research Officer at the Economic and Social Research Institute (ESRI) and an Adjunct Professor at Trinity College Dublin (TCD). Helen Russell is a Research Professor at the ESRI and an Adjunct Professor at TCD. Emer Smyth is a Research Professor at the ESRI and an Adjunct Professor at TCD.

ACKNOWLEDGEMENTS

This publication was funded by the Department of Children, Equality, Disability, Integration and Youth (DCEDIY) through a joint research partnership with the ESRI. The views, opinions, findings, conclusions and/or recommendations expressed here are strictly those of the authors. They do not necessarily reflect the views of the DCEDIY, which takes no responsibility for any errors or omissions in, or for the accuracy of, the information contained in this publication. It is presented to inform and stimulate wider debate among the policy community and among academics and practitioners in the field. We are especially grateful to the Growing Up in Ireland (GUI) study team and the families involved in GUI for making this research possible.

Growing Up in Ireland (GUI) is funded by the Department of Children, Equality, Disability, Integration and Youth (DCEDIY). It is managed by DCEDIY in association with the Central Statistics Office (CSO). Results in this report are based on analyses of data from anonymised microdata files provided by the Irish Social Science Data Archive (ISSDA) and research microdata files provided by the CSO. Neither the CSO nor DCEDIY takes any responsibility for the views expressed or the outputs generated from these analyses.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

BACKGROUND TO THE STUDY

While problems in the housing system in Ireland have been under the spotlight for the last decade, relatively little attention has been paid to the experience of children and to the consequences of housing issues for child development. International research has highlighted a range of effects of poor housing on children. Poor physical housing conditions has been associated with respiratory illnesses and childhood accidents. Overcrowding has been linked to poorer educational outcomes and deprived neighbourhood conditions to socio-emotional problems. Frequent residential mobility has also been found to lead to poorer cognitive and non-cognitive outcomes. However, there is a lack of evidence on how far these findings apply in Ireland where levels of home ownership are high and levels of neighbourhood segregation are lower.

This study addresses this gap. Drawing on data from the '08 Cohort of the Growing Up in Ireland study, we explore the housing conditions faced by children in early and middle childhood and the implications of these housing experiences for their cognitive, socio-emotional and health outcomes. We adopt a multi-dimensional approach to measuring housing conditions, incorporating housing tenure, suitability of accommodation, heating deprivation, neighbourhood disorder and housing mobility.

KEY FINDINGS

Housing tenure and housing conditions

At age nine, 75 per cent of children lived in owner-occupied housing, 12 per cent in social housing, 11 per cent in the private rented sector and just over 1 per cent were living with their parent(s) in their grandparents' home. While the majority of children lived in accommodation that is perceived to be suitable, one in ten lived in unsuitable housing, mainly due to the size. A similar proportion of children lived in homes that parents could not afford to keep warm; for 7 per cent of children, this was a persistent problem over their childhood.

Unsurprisingly, socio-economic factors such as parental education, income and employment status are strong predictors of housing tenure and housing conditions. Family structure was also relevant with lone-parent families more likely to live in private rented and social housing and to experience heating deprivation and neighbourhood disorder.

Residential mobility

The study provides novel information on the experience of residential mobility. Moving house is a relatively common experience in childhood: almost 30 per cent of children had experienced at least one move before the age of nine and 7 per cent had experienced at least two moves. Mobility is not confined to disadvantaged families so cannot on its own be taken as an indicator of instability. Moves were more common for those in private rented accommodation, those living in urban areas and lone-parent families but were also more frequent for those with more highly educated mothers. Those who had experienced upward income mobility from the lowest income group were also more likely to move. Partnership dissolution or new family formation emerged as key drivers of residential mobility for children.

Child outcomes

The largest impact of housing conditions is found on children's socio-emotional development. Living in a home that is too small or that is inadequately heated is associated with greater difficulties. The study also confirms research in other national contexts on the relevance of neighbourhood characteristics for children's socio-emotional development. Children living in neighbourhoods with higher levels of disorder experience more difficulties and exhibit less pro-social behaviour. Even when housing conditions are held constant, living in social housing has an additional negative effect.

We find that housing conditions are associated with a range of health outcomes at age nine. Consistent with previous research internationally, respiratory problems (episodes of wheezing) are more common for children living in poor housing conditions (including damp) as well as in homes not adequately heated. Children in inadequately heated homes are also more likely to have poorer parent-rated health and to have experienced more accidents or injuries requiring medical treatment. Childhood accidents are also more prevalent in disorderly neighbourhoods.

Residential mobility is found to have little effect on child outcomes overall and where they emerge, the consequences are context dependent. In low-income households, home moves are associated with greater socio-emotional difficulties whereas for the highest-income households, moves had a positive effect. These patterns are likely to reflect the differing motivations behind residential moves, which include both push and pull factors.

POLICY IMPLICATIONS

Policy discussion of housing in Ireland has largely focused on issues of supply and affordability but the study findings show that affordability and quality are intertwined, with lack of adequate space the main feature of unsuitable accommodation for families. The consequences of poor housing conditions for children underline the importance of adequate housing supports for families. Housing supports in Ireland have increasingly been reliant on provision in the private rented sector, which is subsidised through Housing Assistance Payments (HAP). However, the current research shows that this sector is less secure, with residential mobility more common in private rented accommodation, and children in these settings tend to experience poorer housing conditions than those in owner-occupied accommodation. Recent ESRI research has highlighted issues in the targeting of housing supports, their value and inconsistencies across local authorities (Doolan et al., 2022). The strong link found between low income and poorer housing circumstances highlights the importance of broader income and welfare supports as well as specific housing supports in alleviating disadvantage. The need for ongoing supports to avoid energy poverty are all the more important in the context of recent rapid increases in fuel prices.

The findings show poorer-quality accommodation, more disorderly neighbourhoods, and living in social housing can negatively affect child wellbeing and cognitive development. There is scope to improve the physical and social infrastructure in the sector and to expand school-based supports through the DEIS programme[1] to target those living in areas of greatest deprivation. Additional supports for early years settings in deprived areas are also crucial in this respect.

The study findings highlight the importance of housing quality for child outcomes but point to the need for further research on the role of neighbourhood disadvantage in reinforcing inequality.

[1] The Delivering Equality of Opportunity in Schools (DEIS) programme targets additional resources and supports towards schools catering for a concentration of students from socio-economically disadvantaged backgrounds.

CHAPTER 1

Introduction: Background to the study, previous research and methodology

1.1 INTRODUCTION

Home is more than a place of shelter; it is essential to the wellbeing and security of children and their families. Ideally, it provides a place of safety and sanctuary from which children can explore and interact with the wider social world. While housing has hardly been out of the national conversation over the last two decades in Ireland, we have a more limited understanding of how shortcomings in housing provision have impacted on the lives of children at the micro level. International research indicates that poor-quality housing and housing instability impacts on physical health and psychological wellbeing (WHO, 2010; Breysse et al., 2004; Fisk et al., 2007; Wilkinson, 1999), is disruptive to family life and can be a barrier to accessing education and other services (Desmond and Gershenson, 2016; O'Campo et al., 2009). It has been argued the main focus of this research has been on adults and that research on children is underdeveloped (Clair, 2019). In Ireland, while there has been some qualitative research on family homelessness (Halpenny et al., 2002; Ombudsman for Children, 2012, 2019), there has been a lack of systematic evidence on the housing circumstances of children and the consequences for their developmental outcomes.

Adequate housing incorporates not only the physical condition of the housing and the facilities within the home, but also dimensions of security and the suitability of housing for family needs. Adequate housing also encompasses the quality of the local environment such as access to education, employment and other services, safety and freedom from pollution and social disorder. For children, access to safe spaces to play or interact with friends is also important (Evans, 2006). Neighbourhoods are not only a physical space but also a social environment and a source of community and social support for children, young people and their families (Forrest and Kearns, 2001; Vyncke et al., 2013).

Previous research in Ireland has highlighted that children and young people are more likely to be exposed to housing affordability problems than other age groups and are more likely to be living in the private rented sector, which in the Irish context lacks security of tenure (Russell et al., 2021). This study sets out to examine the housing conditions of children in Ireland in early to middle childhood and which children experience inadequate housing. We also aim to investigate the consequences of inadequate housing for child development.

It is also important to recognise that children's housing experiences can change over time. International evidence suggests that residential mobility is particularly common during periods of family formation (Gambaro and Joshi, 2016). Yet relatively little is known about residential mobility during childhood in Ireland in a context where owner-occupation is the dominant form of tenure. The Growing Up in Ireland (GUI) study allows us both to explore the circumstances associated with residential mobility and the consequences this may have for children's outcomes. We first examine the international findings on housing and child outcomes that guide our subsequent analyses.

1.2 DEFINING HOUSING

In this study, we draw on the concept of adequate housing from the literature on economic and social rights and developed in consultation with key stakeholders; this forms part of international human rights agreements to monitor adequate housing in Ireland (Russell et al., 2021). This definition of adequacy covers six main dimensions – housing access (including housing tenure), affordability, security of tenure, cultural adequacy, quality (covering physical conditions, facilities and overcrowding) and location or local environment (covering neighbourhood and access to services).

Housing may be adequate on some of these dimensions and not on others and families can make trade-offs between different dimensions. For example, some may choose to reside in a smaller home in a more affluent neighbourhood with better services and amenities or vice versa. However, different aspects of housing may also be bundled together. For example, home ownership is associated with living in more affluent areas with greater facilities and social housing with more disadvantaged neighbourhoods (Lupton et al., 2009; Grotti et al., 2018) and poorer physical housing quality (Watson and Corrigan, 2019), while private renting is associated with lower security of tenure (Russell et al., 2021). Affordability problems are more common in the social housing and private rental sectors (Doolan et al., 2022; Roantree et al., 2022). Moreover, quality of housing, housing tenure and location are also closely related to households' socio-economic resources. Therefore, in the analysis that follows in the report, we analyse the influence of multiple dimensions of housing on children's outcomes, including a broad set of controls for a family's socio-economic position. This allows us to consider the independent influence of different aspects of housing; although we cannot rule out the influence of other unobserved confounding factors. In section 1.4, we discuss which of these dimensions can be addressed, and the analytical strategy is outlined in more detail in Chapter 2.

1.3 HOUSING AND CHILD OUTCOMES

While there is extensive literature on neighbourhood effects on child outcomes, especially in the US, research on the effects of housing on children's and young people's outcomes is less well developed (Jocson and McLoyd, 2015; Gambaro et al., 2022). Insights into the implications of inadequate housing for child outcomes have been provided by the broader literature on child poverty. Two theoretical models on the influence of poverty on cognitive outcomes dominate the research: the family stress model and the resource investment model (Cooper and Stewart, 2020; see Layte, 2022 and Nixon et al., 2019 for applications of these models in Ireland). The former approach has emphasised how economic hardship affects parents' psychological health and parental relationships, parenting styles and behaviours, which in turn impacts children's experiences and development, although such processes can be moderated through other risk and protective factors (Conger et al., 2010; Masarik and Conger, 2017). From this perspective, housing insecurity, poor housing conditions, unaffordability and neighbourhood disorder are likely to influence family stress and functioning and potentially influence child development.

The family investment model emphasises the role of family resources in providing children with opportunities for cognitive and non-cognitive development (Cunha and Heckman, 2008; Haveman and Wolfe, 1994). Secure housing that is warm, has adequate space for studying, is close to amenities and services and embedded in a supportive community can provide children with a range of learning opportunities that may be denied to those in poorer housing. In contrast, children that lack a quiet place to do homework or live in areas with poor infrastructures and services, such as schools, playgrounds and libraries, are afforded fewer opportunities. Parents struggling with housing affordability will have fewer resources to invest in their children's development.

The bio-ecological model of child development emphasises that children are embedded in a series of interconnected contexts, which combine with children's individual characteristics and interact with each other to influence their outcomes (Bronfenbrenner and Morris, 2006). Housing and neighbourhood are part of both the proximal and distal contexts for young children and can influence children's development both directly and indirectly. Housing quality, such as exposure to damp or pollution, can have a direct influence on children's physical health and development (see discussion) but also on cognitive and socio-emotional development.

> *Poor quality housing may impose physiological stress on children, inhibiting their emotional stability and learning, whereas residential instability may interrupt peer and school networks, impeding academic and behavioral success. Housing characteristics may*

> *similarly affect parental well-being and parenting behaviors that subsequently influence children's development. (Coley et al., 2013, p. 1776)*

We consider existing research across three sets of child outcomes: socio-emotional/behavioural development, cognitive/educational outcomes and health. We also consider separately the literature on residential mobility. Studies have operationalised housing in different ways, including physical housing conditions such as overcrowding, dampness, warmth; affordability; neighbourhood, including the social and physical environment; housing tenure (owner occupation, private rental, social housing); and housing security.

1.3.1 Housing and socio-emotional and behavioural development

As noted above, poor-quality housing and neighbourhoods may influence children's social, emotional and behavioural outcomes via family stress. There may also be a direct effect; for example, children themselves may feel stigmatised by their housing conditions or be stressed by the lack of personal space or adverse neighbourhood conditions (Solari and Mare, 2012; Evans, 2006; Evans and English, 2002).

A review by Leventhal and Newman (2010) identified relatively few studies testing the effects of housing quality, excluding neighbourhood, on children's social/behavioural outcomes. They note a study of young children in the US Head Start programme which found that overcrowding was associated with teacher-rated behavioural problems (Maxwell, 1996) and another US study (Evans, 2001) which found that overcrowding was associated with less responsive and harsher parenting. Applying the family stress model, Jocson and McLoyd (2015) found that housing disorder, measured as the presence of problems such as leaking roofs, broken windows, exposed electrical wires, rats or mice in the home, was associated with greater levels of psychological distress and poorer parenting styles, which in turn was found to affect externalising behaviour among children. The study used a longitudinal sample of low-income families in a US city containing children aged 6 to 16 years.[2]

A number of studies have addressed the relationship between housing tenure and children's socio-emotional outcomes; though, as noted above, separating the effects of tenure from families' economic and social characteristics presents methodological challenges. Longitudinal research based on the Panel Study of Income Dynamics (PSID) and the National Longitudinal Survey of Youth (NLSY)

[2] Child and Family Component of the New Hope Project, N = 556 families.

found that children living in owner-occupied rather than rented housing had lower levels of problem behaviour (Boyle, 2002; Haurin et al., 2002).[3] However, using the same data and propensity score matching and IV techniques, Holupka and Newman (2012) find little evidence of home ownership on children's cognitive and behavioural outcomes and suggest that previous research may have mistaken self-selection for causal effects. In the UK, Lupton et al. (2009) investigate the effects of growing up in social housing versus home ownership on outcomes in adulthood across three cohort studies. In terms of socio-emotional outcomes for the 1970 cohort, they find that, after including a wide range of controls, those who 'ever' lived in social housing as children reported lower self-efficacy at ages 30 and 34 and lower life satisfaction at age 26 and 30.[4]

There is a much wider evidence base exploring the effects of neighbourhood conditions on child development. However, a good deal of the research emanates from the US, where levels of neighbourhood inequality and segregation are exceptionally high by European standards (Gambaro et al., 2022).

In a systematic review of 13 multilevel studies, Sellström and Bremberg (2006) found that neighbourhood disadvantage was associated with a higher risk of behavioural problems in four of the five studies where it was explored. A unique, randomised control trial in which families in social housing in high-disadvantage neighbourhoods were moved either to medium- or low-disadvantaged neighbourhoods (the US 'Moving to Opportunity' programme) found some positive effects on parental and child mental health (especially among boys), although weaker or absent effects on educational outcomes in the longer-term (Leventhal and Brooks-Gunn, 2003; Ludwig et al., 2013).

In Britain, research based on the Effective Provision of Pre-School Education (EPPE) study found that controlling for child and family characteristics, neighbourhood deprivation had a non-significant effect on social/behavioural (and cognitive) development at age 11 (Sammons et al., 2008) but was associated with negative socio-emotional and behavioural outcomes at age 14 (Sammons, 2012; Sylva et al., 2012). At this later age, living in a disadvantaged neighbourhood was associated with poorer self-regulation, higher levels of hyperactivity and increased antisocial behaviour. Higher neighbourhood criminality was also associated with poorer behavioural outcomes at age 14. Although the effect sizes were small, these neighbourhood influences remained statistically significant after controlling for individual and family characteristics (Sammons, 2012; Sylva et al., 2012).

---

3 Haurin et al. (2002) control for child, parent and neighbourhood characteristics in their models and use an instrumental variable approach to account for selection bias.

4 The 1970 cohort is from the British Cohort Study; it is the most recent cohort for which outcomes are examined in the study.

Previous GUI research has also explored neighbourhood effects on socio-emotional outcomes. Russell et al. (2016) found that at age five, poorer neighbourhood quality, in terms of safety and satisfaction with the area,[5] was associated with parent-rated and teacher-rated socio-emotional difficulties, especially on the teacher-rated conduct scale. These findings controlled for a wide range of individual and family characteristics, including parenting warmth and hostility. Using the GUI '98 cohort and applying multilevel modelling techniques, Smyth and Darmody (2021) found that at age 17, behavioural and concentration problems were more prevalent among young people in the most disadvantaged areas and that young people living in areas with more antisocial behaviour had greater emotional and behavioural difficulties and less prosocial behaviour.

In new research focusing on parental and peer relationships and social participation using both the '08 and '98 GUI cohorts, Smyth (2022) finds a negative association between renting compared to ownership for relationships with parents at age nine. Net of socio-economic, demographic and other relevant factors, children living in rental housing were more likely to engage in screen-based activities and less likely to participate in sport than those in owner-occupied housing; however, they were more likely to see their friends almost every day.

1.3.2 Housing and child cognitive outcomes

As in the case of socio-emotional outcomes, studies of housing and cognitive outcomes focus mainly on neighbourhood characteristic and housing tenure. There are relatively few studies that specifically explore the relationship between housing conditions and children's cognitive outcomes and the results are rather mixed.

One pathway through which housing conditions may influence child educational outcomes is through the availability of space in the home to study. This need was heightened during the pandemic when remote learning became a reality for children and young people. A number of COVID-era studies have emphasised how this lack of such space impacted on their learning (e.g. Eyles et al., 2020). In Ireland, Smyth and Murray (2022) found that just over half of 13-year-olds did not always have a quiet place to study and that this experience was more common for children whose families experienced financial stress while they were aged nine. Lack of access to broadband at home also interfered with educational participation during

[5] Neighbourhood quality was measured on an index of four indicators: safe to walk alone in this area after dark; safe for children to play outside during the day in this area; as a family, we are happy living in this area; we intend to continue living in this area.

the pandemic (Mohan et al., 2020) and this disparity is likely to continue as digital learning becomes more embedded in education.

A number of studies have considered the effect of overcrowding on children's cognitive outcomes (see Cunningham and MacDonald, 2012 for a review). In the US, Solari and Mare (2012) found that crowding was associated with decreased test scores in reading and maths in a cross-sectional sample of children in Los Angeles, where there is a high rate of overcrowding, and in a pooled OLS analysis of two waves of the PSID Child Development Supplement (CDS). However, they found no significant effects of crowding in a fixed effect model of the PSID-CDS data, which provides a stronger test of causality. In addition to the mixed findings, the study includes children across a wide age range which may hide variation across different educational stages. A stronger negative effect of crowding and cognitive outcomes was found by Goux and Maurin (2005) in France. Using an instrumental variables approach, they found that 15-year-olds who lived in overcrowded conditions were more likely to have been held back a grade in school.

Coley et al. (2013) found that poor housing quality was associated with lower cognitive skills among children and adolescents in low-income households which partly operated through mothers' psychological distress, consistent with the family stress model. The authors tested a range of quality measures including physical housing quality, stability, tenure type, and affordability.

As noted in the discussion in section 1.2.1, previous studies have found significant associations between housing tenure and child outcomes, both cognitive and non-cognitive. However, more recent studies that have used techniques to more explicitly deal with issues of selection and causality have found much more muted or non-significant effects (Leventhal and Newman, 2010). Others have noted that the effects of tenure may be due to other housing characteristics rather than ownership per se (Blau et al., 2015). Holupka and Newman (2012) found a significant positive effect of home ownership on cognitive outcomes for White children using statistical matching techniques but not for Black and Hispanic children, and no effects in the instrumental variables models. Blau and colleagues (2015) found no effect of ownership but that living in a multi-family dwelling or mobile home has consistently negative effects on maths scores and high school graduation among adolescents in the National Longitudinal Survey of Youth 1979 study. In Ireland, Layte (2022), using a matching technique, finds no significant effect of housing tenure on educational performance in state exams at age 15 years based on the GUI '98 Cohort.

The effect of neighbourhood disadvantage on cognitive and educational outcomes has received greater attention. A seminal study in the US which aimed to bring

together a wide group of researchers examining neighbourhood effects on children and young people across a variety of disciplines and studies, and to undertake harmonised analysis (Brooks-Gunn et al., 1997), found consistent, small but significant neighbourhood effects on educational outcomes net of family and individual characteristics. Lloyd and Hertzman (2010) in Canada also found that experiences of neighbourhood deprivation during a child's early years (age 5/6) continues to predict worse cognitive and language outcomes at age 12/13, even after controlling for current neighbourhood deprivation and cognitive scores at age 5/6. This suggests early exposure to high neighbourhood disadvantage can leave a lasting scar on children's cognitive outcomes into middle childhood and adolescence. Research from the United Kingdom has also found that living in more deprived neighbourhoods is associated with lower cognitive scores, independent of other household and family socio-economic indicators; although such associations are generally weaker than family characteristics and can become attenuated as the child ages (McCulloch and Joshi, 2001; McCulloch, 2006). In a review of neighbourhood effects, Leventhal and Dupéré (2019) conclude that neighbourhood advantage is positively associated with children's cognitive and educational outcomes but that the effects are small to moderate when family and school contexts are controlled. They further outline that longitudinal, dynamic analysis supported the hypothesis that exposure in early childhood and cumulative exposure had stronger effects. The authors note that experimental or quasi experimental studies are rare but highlight that one such study found that children aged under 14 who moved to more advantaged areas were more likely to attend college than the control group.

1.3.3 Housing and child health outcomes

There is a longstanding understanding of the role of housing in health outcomes. Early social reformers like Charles Booth and Seebohm Rowntree highlighted the link between poor housing conditions and public health and the wide subsequent body of research has investigated the causal pathways across different health outcomes (Shaw, 2004; Thomson et al., 2001; Wilkinson, 1999). The evidence of a direct effect on health seems to be strongest in the case of damp, mouldy, cold housing and respiratory illness among children (see reviews by Wilkinson, 1999 and Peat et al., 1998). Overcrowding is directly linked to the spread of infectious disease, a fact that we have been reminded of during the COVID-19 pandemic (Centre for Healthy Aging, 2020). Studies have also found a direct relationship between housing quality and accidents. Young children may be particularly exposed to the negative effects of poor housing as they spend the majority of their time in the domestic setting. Children and young people may also be more exposed than adults to accidents in poor-quality environments (Pearce et al., 2012).

In their review of the literature, Leventhal and Newman (2010) conclude the studies linking physical housing quality and child health in the case of respiratory diseases are methodologically sound and involve longitudinal analysis, but that they are frequently based on non-representative samples and therefore may not be generalisable and additional methods to account for bias should be applied. The authors note that the results in the case of child injury are less consistent, which they attribute in part to unreliable measures of housing quality (ibid.).

1.3.4 Residential mobility and child outcomes

There is a growing body of literature that explores the impacts of residential mobility on child outcomes. Impacts on children's outcomes may work through a number of pathways. House moves might interrupt children's local social networks and their family's support networks; such disruption is more likely if the residential move also entails a school move. Mobility may also impact on children due to increased stress on their parents.

A meta-analysis on the effects of residential mobility in childhood on health outcomes, broadly defined to include socio-emotional problems such as internalising and externalising behaviours, psychosocial and physical health problems, find a small to moderate negative effect on health (Simsek et al., 2021). The mean effect size was larger for studies of externalising and internalising behaviour and smaller for psychosocial and physical health. Moves during adolescence had a greater effect than moves during early to middle childhood (0–10 years). Effects also varied by the age at which the outcome was assessed and were found to be strongest when health outcomes were measured in adolescence. The frequency of moves was also important: high mobility (three or more moves) was twice as detrimental as low mobility (ibid.).

Previous research has also indicated that residential mobility is associated with more negative educational outcomes (e.g. Pribesh and Downey, 1999; McMullin et al., 2021). In their review of the evidence, Leventhal and Newman (2010) conclude that alongside the findings on housing and health effects, the strongest evidence is for residential mobility having an effect on children's short-term academic outcomes.

However, the literature suggests that the impact of moves is dependent on the context. Moving from a deprived area where social resources are low to a more affluent neighbourhood could enhance children's ecology and hence development; while households with greater economic or social capital may be better able to buffer any negative effect of mobility. Ziol-Guest and McKenna (2014) found that frequent mobility was associated with greater externalising behaviour only among

disadvantaged families.[6] Mollborn et al. (2018) found the negative effects on behavioural outcomes were observed only in cases of long-distance moves, frequent moves, and moves to disadvantaged neighbourhoods.[7] In a comparative US/UK study of residential mobility and child outcomes at five years, Gambaro and colleagues (2022) detected no evidence of negative behavioural outcomes in the US and 'tenuous' effects in the UK where those who moved out of disadvantaged areas showed worse internalising and externalising scores than children who stayed in advantaged areas.[8] A small negative effect on cognitive scores were also found in the UK among children moving to the most disadvantaged areas compared to 'stayers' in the most advantaged areas.

Simsek et al.'s meta-analysis (2021) found that the effect of mobility on health outcomes was weaker in studies that controlled for family structure and slightly smaller when family SES was controlled. The most important moderating effect was the co-occurrence of adversities such as divorce or job loss (ibid.). This highlights that the factors that motivate the move are likely to have a significant impact on the effect of childhood mobility. The authors note that many studies are cross-sectional in nature and that future research should take into account this selection into mobility.

The effects of residential mobility may also vary by national norms. Across the OECD countries, residential mobility is highest in the US and Australia, where over 40 per cent of individuals moved over a five-year period, and lowest in Southern Europe, where the average is around 10 per cent (Causa and Pichelmann, 2020). Ireland also has a relatively low residential mobility rate of 18 per cent.[9] The lower prevalence of residential mobility in Ireland and elsewhere in Europe suggests that the findings from the US literature may not be translatable to other national contexts.

1.3.5 Contribution and research questions

In summary, there is a substantial body of evidence on some aspects of housing on children's outcomes, particularly in relation to health outcomes and neighbourhood effects, but also still considerable gaps in knowledge about which aspects matter for different child outcomes and at what stage they matter.

6 The study draws on the Fragile Families study which follows families in urban settings in the US and oversamples lone parents; just under 3,000 families were selected for the study. Behavioural outcomes were measured using the Child Behavior Checklist.

7 The study draws on the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), which is a nationally representative cohort of children born in the US in 2001.

8 The Gambaro et al. study also analyses the Fragile Families data for the US and the Millennium Cohort Study for the UK. The UK sample is restricted to circa 8,000 children born in large cities. In the UK, cognitive scores are based on the BAS vocabulary test and externalising and internalising behaviour were measured using the Strengths and Difficulties questionnaire. In the US, vocabulary was measured using the Peabody Picture Vocabulary Test.

9 The figures refer to 2012 for the EU countries and are derived from a special module of EU SILC.

Moreover, many of the studies outlined above focus only on a limited range of housing characteristics. One lesson from the literature is that effects can be context-specific and findings from the larger US literature where there is much higher housing mobility, greater segregation and higher levels of income inequality may not be generalisable to the Irish context. Ireland also differs from many countries in the EU with the high level of home ownership, though there has been a recent shift towards higher levels of private rental accommodation (Doolan et al., 2022). There has been relatively little research on the influence of housing on child outcomes in the Irish context and the current study aims to address this gap. The research will add to the literature in a number of ways. Firstly, by providing a multidimensional picture of housing adequacy for families with young children in Ireland and new insights into the prevalence and predictors of residential mobility among these families. Secondly, by providing novel analysis on the effects of housing conditions and residential mobility on socio-emotional, cognitive and health outcomes in early to middle childhood in the Irish context. Thirdly, the GUI allows us to control for a wide set of confounding factors, such as families' socio-economic status or parental education, and to take into account earlier socio-emotional, cognitive or health measures, therefore providing a more robust analysis of the independent influence of housing than has been possible in Ireland heretofore.

Drawing on the research above, we set out to answer the following questions:

1. What are the housing conditions of children and their families in early to middle childhood and what are the factors that predict poor housing quality for children and their families?
2. What is the extent of residential mobility among young children in Ireland? Are house moves associated with improved housing conditions?
3. How is housing quality and housing mobility associated with child outcomes (health, cognitive and socio-emotional)?
4. What are the policy implications of the findings?

To answer these questions, we draw on the '08 cohort of the Growing Up in Ireland (GUI) study, with information on the lives of over 7,000 children collected at nine months, three years, five years and nine years. Early childhood is a crucial period of child development, when cognitive and non-cognitive skills are developing rapidly. Barriers to development in early childhood can have both immediate and longer-term implications for children's lives, while health problems in early childhood are strongly associated with longer-term health trajectories. Therefore, identifying the influence of housing on outcomes in early childhood may be important for assessing which policies might mitigate these effects.

1.4 IRISH HOUSING CONTEXT

Home ownership has long been the dominant form of housing tenure in Ireland since the mid 20th century. Levels of home ownership peaked at 80 per cent in 1991, though they have subsequently fallen to 68 per cent in 2016 (Corrigan, 2019). The decline accelerated post the recession and financial crash in 2008, as construction stalled and lending conditions become more restrictive (Cronin and McQuinn, 2021). Social housing provided by local authorities and more recently by housing associations accounted for 20 per cent of households in 1961 but for less than 10 per cent in 2016, reflecting a lack of investment in replacing housing stock in this sector. In contrast, rental from private sector landlords has increased sharply in recent years: in 2006, 10 per cent of households lived in private rented accommodation, but by the 2016 census this had grown to 19 per cent. The state has increasingly shifted from providing for housing needs through social housing to supporting tenants in private sector rentals through income supports paid to the tenant or landlord, such as Rent Supplement or Housing Assistance Payments. Doolan et al. note that around 16 per cent of households are living in supported rented accommodation (social or with housing income supports) while circa 14 per cent live in unsupported rental housing. There are strong generational patterns within these trends – Roantree et al. (2021) note that those born in the 1980s are significantly less likely to own their own homes by age 35 compared to those in earlier cohorts at the same age.

Housing tenure has significant implications for housing adequacy. At a fundamental level those who own their own home or who live in local authority housing have a higher level of security of tenure compared to those living in the private rental sector (see Hearne, 2020; Norris and Byrne, 2021; Sirr, 2014 for a discussion of housing policy developments in Ireland, and Doolan et al. for a recent discussion of housing supports for low-income households). Previous research has also highlighted further differences between sectors in Ireland. This includes greater problems of affordability in the social rented sector and the (unsupported) rental sector (Corrigan et al., 2019; Grotti et al., 2018; Russell et al., 2021; Roantree et al., 2022). Higher levels of neighbourhood problems, environmental deprivation and poorer services have also been noted for those in social housing and private rented sectors (Grotti et al., 2018; Watson and Williams, 2003) and these residents are also exposed to poorer physical housing conditions (Grotti et al., 2018; Watson and Corrigan, 2018) including overcrowding in the case of local authority tenants (Grotti et al., 2018). This points to a possible clustering of dimensions of housing (in)adequacy for some households.

1.5 DATA AND MEASUREMENT

To address the research questions, we draw on Cohort '08 of the Growing Up in Ireland survey. Four full survey waves were available for analysis: wave 1 carried out in 2008 when the study child was nine months old; wave 2 at three years; wave 3 at five years; and wave 5 at nine years. Wave 4 was a short postal survey and is not used in the analysis. As outlined above, we draw on the concept of adequate housing in the international human rights agreements to monitor adequate housing in Ireland (Russell et al., 2021). The GUI survey contains a rich array of indicators relating to children's housing which cover many of the key dimensions identified in the previous research on child outcomes, but not all of the dimensions identified in the adequate housing literature. The indicators used in this study are outlined in Table 1.1. Housing tenure (home ownership, social rental, private rental, or living with the grandparents of the study child) is captured in every wave. There are a limited number of repeated indicators of physical housing conditions. Respondents were asked in each wave whether their accommodation was suitable to their family needs, and if unsuitable a range of specific conditions were recorded (too small, damp/leaking roof, not child-friendly). Information was also collected on the ability to keep the home adequately warm. While information was collected on the number of bedrooms, the number of other rooms in the house was unknown, so it was not possible to construct standard measures of overcrowding. However, the 'too small' response mentioned already is likely to tap into crowding problems, as is living in a multi-generation household.

For neighbourhood characteristics, we use the neighbourhood disorder scale. This measure is collected in every wave of the survey and has proved to be a powerful predictor of outcomes in previous research in Ireland (Laurence et al., forthcoming; Smyth and Darmody, 2021).

For residential mobility, we draw on information collected as part of the adverse childhood events question. The primary caregiver is asked whether the child has experienced a range of events including moving house between birth and wave 3 (age five) and between wave 3 and wave 5 (age nine). This does not provide precise information on the number of moves, only whether the child experienced at least one move during the periods considered.

The data do not contain a suitable measure of housing affordability, which requires detailed information on household income and expenditure. Housing arrears are captured in wave 5 but not in any of the earlier waves.

Below, we summarise the years in which each wave of the Growing Up in Ireland survey was conducted and the corresponding age of the child at each wave:

- Wave 1 of the GUI was conducted from 2008–2009, when the child was nine months old.
- Wave 2 of the GUI was conducted from 2010–2011, when the child was three years old.
- Wave 3 of the GUI was conducted in 2013, when the child was five years old.
- Wave 4 of the GUI was conducted in 2016, when the child was seven/eight years old (postal survey only).
- Wave 5 of the GUI was conducted from 2017–2018, when the child was nine years old.

1.5.1 Data Limitations

The GUI sample is a nationally representative sample of children who were aged nine months old in 2008. While GUI does include families that are living in multiple family units, some members of the Travelling Community and a small number of families in direct provision,[10] we acknowledge that it does not capture those experiencing the worst form of housing disadvantage. Families experiencing homelessness are extremely unlikely to take part in a study of this kind. At the time of writing (September 2022), there are 3,334 children living in homelessness (Department of Housing, Local Government and Heritage). It is likely any association between poor housing and children's outcomes found here would be considerably amplified in the case of children who are homeless.

10 Direct provision is a system used in Ireland since 2000 to accommodate and provide basic welfare to asylum seekers. Accommodation is mostly in communal settings.

TABLE 1.1 INDICATORS USED IN THE ANALYSIS

Measure	Variable question/description (asked of Primary Caregiver)	Measurement Scale	Waves used in report[11]
Housing Adequacy Measures			
Tenancy	Please tell me which best describes your (and your partner's) occupancy of the accommodation?	1 = owner occupied (with or without mortgage) 2 = rented from a local authority or voluntary housing body 3 = rented from a private landlord (with or without rent subsidy/HAP) 4 = living with parents or partner's parents (with or without rental payment)	1, 2, 3, 5
Ability to keep the household warm	a. Have you ever had to go without heating during the last 12 months through lack of money? (I mean have you had to go without a fire on a cold day, or go to bed to keep warm or light the fire late because of lack of coal/fuel?) b. Does the household keep the home adequately warm?	Combined responses to the two measures: 1 = Unable to keep household warm ('yes, had to go without heating' and/or 'no, the household does not keep the home adequately warm because they cannot afford to') 0 = Able to keep the household warm ('no, has NOT had to go without heating' *and* 'yes, the household does keep the home adequately warm')[12]	1, 2, 3, 5
Accommodation suitability	Do you feel that your current accommodation (excluding location) is suitable for your family's needs?	No/Yes	1, 3, 5
Accommodation suitability – reasons not suitable	…Too small …Not a child-friendly layout …Poor conditions in the home (damp, drafts, leaks, etc.)	No/Yes No/Yes No/Yes	2, 3, 5 2, 3, 5 2, 3, 5
Neighbourhood disorder scale	How common would you say that each of the things listed below is in your area? a. Rubbish and litter lying about b. Homes and gardens in bad condition c. Vandalism and deliberate damage to property d. People being drunk or taking drugs in public	Averaged score across all four measures (1 'Not at all common' to 4 'Very common')	1, 3, 5

11 Wave 4 was a short postal survey of primary caregivers; it did not collect detailed information on accommodation so is not used in this report.

12 This group also includes those who responded 'the household does not keep the home adequately warm *for other reasons*'.

Housing Mobility Measures			
Experienced moving house	Has the study child ever experienced… …Moving house?	No/Yes	Moved between W3 & W5 Moved between birth & W3[13]
DERIVED: Cumulative Housing Adequacy Experiences			
Tenancy experiences over time	Number of waves respondent was in an owned home	0 to 3	2, 3, 5
	Number of waves respondent was in a home rented from a local authority or voluntary body	0 to 3	2, 3, 5
	Number of waves respondent was in a home rented from a private landlord	0 to 3	2, 3, 5
	Number of waves respondent was living with parents or partner's parents	0 to 3	2, 3, 5
(In)ability to keep HH warm over time	Number of waves that respondent reported being unable to keep the household warm	0 to 3	2, 3, 5
Experiences of unsuitable accommodation over time	Number of waves respondent reported experiencing unsuitable accommodation that…		
	…is too small	0 to 3	2, 3, 5
	…is not a child-friendly layout	0 to 3	2, 3, 5
	…features poor conditions (damp, draughts, leaks, etc.)	0 to 3	2, 3, 5
Experiences of neighbourhood disorder over time	Sum of neighbourhood disorder scores across available waves (1, 3 and 5)	3 to 12	1, 3, 5
Outcomes			
Strengths and Difficulties: Total Score	25-item instrument assessing children's psychological adjustment (combining Emotional Symptoms, Conduct Problems, Hyperactivity, and Peer Problems)	0 to 40	2, 5
Strengths and Difficulties: Prosociality	5-item instrument assessing children's prosocial behaviours	0 to 10	2, 5
Cognitive ability	Drumcondra Reading Test Score (rescaled logit score)	0 to 100	5
	Naming Vocabulary T-score	20 to 80	2
Frequency of respiratory problems	How many separate episodes/bouts of wheezing with whistling on his/her chest has child had in the past 12 months?	0 to '11 or more'	2, 5
Caregiver rating of child's health	In general, how would you describe child's current health?	1 = Almost always unwell 2 = Sometimes quite ill 3 = Healthy, but a few minor problems 4 = Very healthy, no problems	2, 5

[13] We can only measure whether a child experienced a move between waves 1 and 3 (and not wave 2) because the question on mobility was asked retrospectively in wave 3 about any moves since a child's birth.

Frequency of accidents experienced by child	How many separate accidents (for which child has been taken to the doctor, health centre or hospital) has child had since the last interview?	0 to '3 or more'	5

In common with other surveys in Ireland, there is no direct measure of housing security. However, tenure type indicates significant differences in security and stability in Ireland, with those in the private rented sector lacking the protection of those in owner-occupied housing or in local authority/voluntary housing body provided housing. The exploration of the predictors of residential mobility and the nature of this mobility, i.e. whether it involves moving from rental to ownership or into a worse/better neighbourhood (Chapter 3), may also provide some insights into whether moves are an indicator of instability.

All analyses presented in the report are weighted to take account of initial non-response and attrition between survey waves. In addition, the analyses control for the variables such as income and parental education that are associated with attrition. Descriptive analyses of housing quality and the prevalence of residential mobility are presented followed by multivariate models of the factors associated with tenure type, housing quality and the likelihood of moving house. Chapter 4 presents multivariate analyses of the relationship between housing characteristics and child outcomes, controlling for a range of family socio-economic factors.

1.6 STRUCTURE OF THE REPORT

The remainder of the report takes the following form. In Chapter 2, we examine the range of indicators of housing conditions among children and their families, describing their situation in wave 1 and wave 5 as well as the cumulative exposure to different conditions. Chapter 2 also addresses the question of which family and individual characteristics are associated with different housing tenure and poorer conditions. In Chapter 3, we provide novel analyses of residential mobility in early to middle childhood in Ireland, exploring the factors that increase the likelihood of moving, including changes in partnership and employment. In Chapter 4, we explore the effect of housing conditions and mobility on children's cognitive, socio-behavioural and health outcomes at age nine. Chapter 5 summarises the main findings and discusses their implications for policy development.

CHAPTER 2

Housing contexts in early to middle childhood

2.1 INTRODUCTION

This chapter provides an overview of how common different housing experiences are among young children. It begins by looking descriptively at housing tenure before exploring multiple dimensions of housing (in)adequacy, including perceived suitability, going without heating and living in a disorderly neighbourhood. Section 2.3 then looks at the factors predicting housing outcomes among young children and their families. The analyses presented in the chapter adopt a dynamic approach, exploring how housing adequacy can change over the period from infancy to middle childhood.

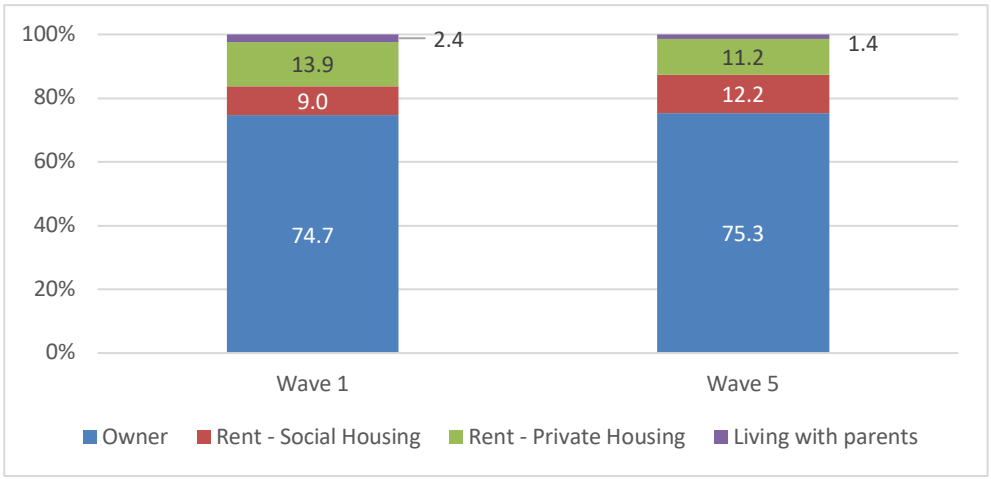
2.2 HOUSING TENURE AND HOUSING CONDITIONS

Figure 2.1 shows the proportion with different housing tenures in wave 1, when the child was nine months old, and wave 5, when the child was nine years old. Some changes over the lifecycle might be expected as family needs alter as the child grows older and/or additional children are born, or older children leave the household. At both timepoints, three-quarters of children were living in owner-occupied accommodation (either with or without a mortgage). Over time, there was some reduction in the proportion living in the private rented sector (as well as in the numbers living in the homes of the child's grandparents[14]) while the percentage living in social housing increased somewhat. This increase in the proportion in social housing likely reflects lifecycle factors, such as changes in the family as the child grows older and/or new children are born, given the data is longitudinal and length of time on the housing waiting list[15]. Overall, however, there is relative stability in housing tenure over early childhood, at least in aggregate terms; the extent to which there is mobility at the level of the individual family is explored further in Chapter 3.

[14] The family are not asked about the tenure status of the grandparents' home but the small size of the group would make it impossible to separate out in any case.

[15] This increase in the proportion in social housing over time contrasts to other data such as the Census, showing declining rates of social housing occupation in Ireland over time. However, such data are from cross-sectional snapshots of the whole population of Ireland at a given point in time.

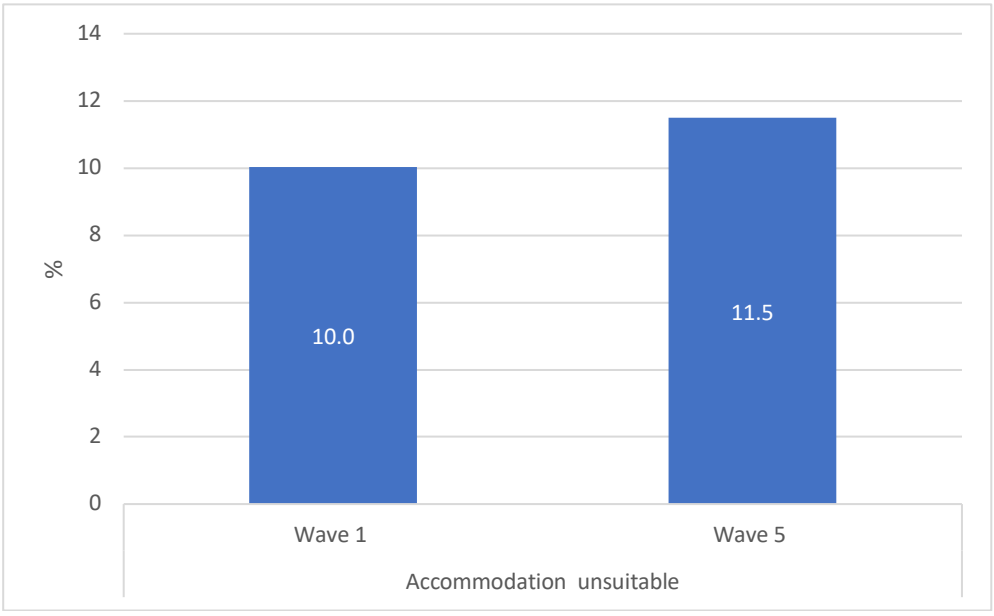
FIGURE 2.1 HOUSING TENURE OF FAMILIES IN WAVE 1 AND WAVE 5



Source: Growing Up in Ireland (GUI) Cohort '08 waves 1, 2, 3 and 5.
Notes: N = 7,303, only those present in all waves are included; weighted by longitudinal weight.

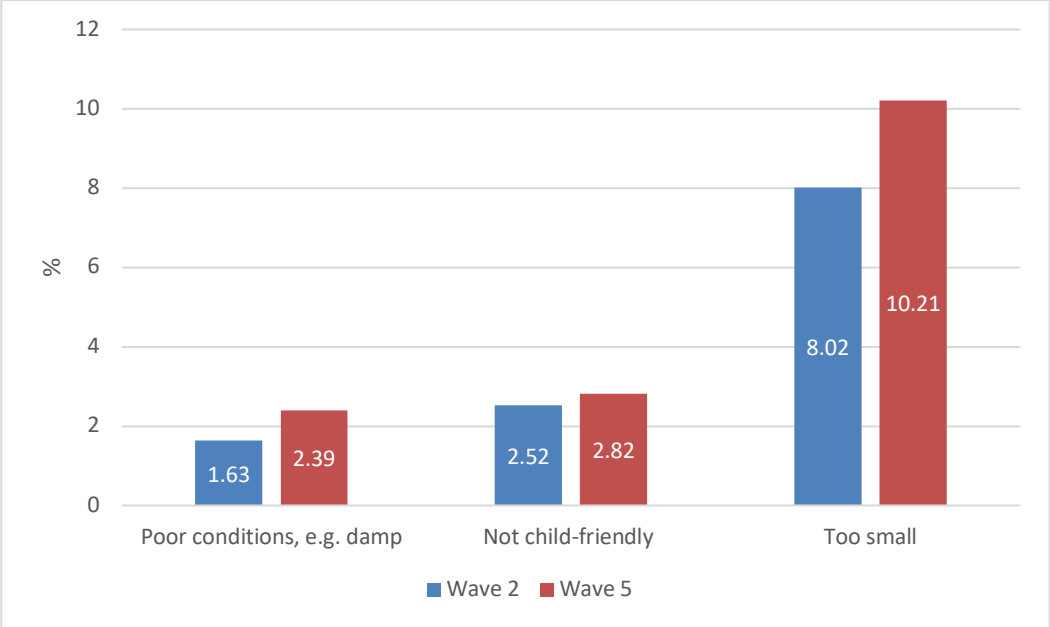
Figure 2.2 looks at the extent to which the primary caregiver reported the accommodation was unsuitable for the needs of the family. Ten per cent of respondents reported living in unsuitable accommodation in wave 1 and this increased somewhat to 11.5 per cent at wave 5. When further questioned about why the accommodation was unsuitable, the most common response was that it was too small (Figure 2.3). The proportion giving this response rose from 8 to 10 per cent between waves 1 and 5, which may be a function of increasing family size due to subsequent births.

FIGURE 2.2 LIVING IN UNSUITABLE HOME IN WAVE 1 AND WAVE 5



Source: GUI Cohort '08 waves 1, 2, 3 and 5.
Notes: N = 7,303, only those present in all waves are included; weighted by longitudinal weight.

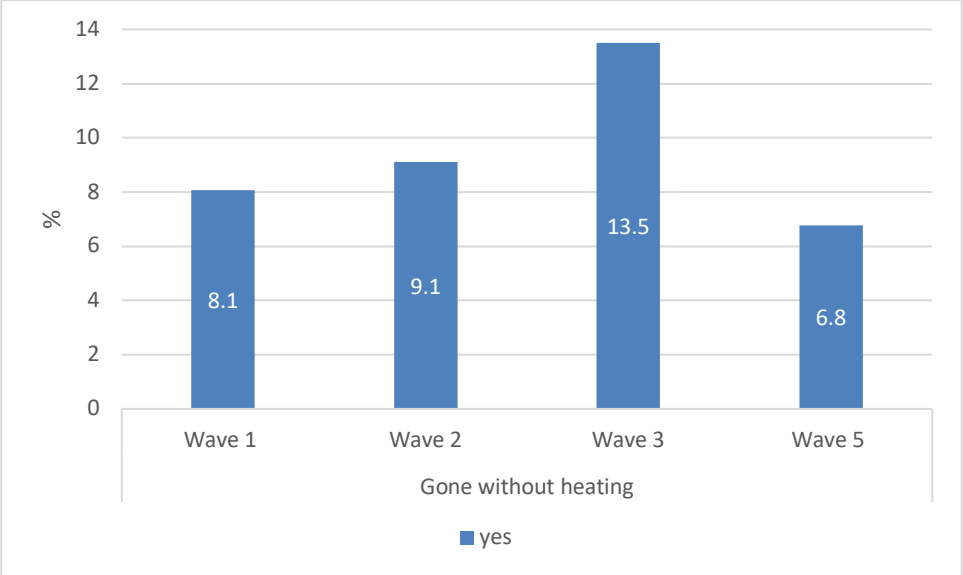
FIGURE 2.3 REASONS HOUSING NOT SUITABLE IN WAVE 2 AND WAVE 5



Source: GUI Cohort '08 waves 1, 2, 3 and 5.
Notes: N = 7,303, only those present in all waves are included; weighted by longitudinal weight.

Figure 2.4 looks at another dimension of inadequate housing: whether the household had to go without heating for financial reasons. It shows that 8.1 per cent of households went without heating when the child was nine months old. This was at the start of the Great Recession, with families surveyed between September 2008 and April 2009. This rose slightly to 9.1 per cent in wave 2 (December 2010 to July 2011) before a larger jump to 13.5 per cent in wave 3 (March to September 2013), which corresponds to the peak in various indicators of poverty in Ireland at the time stemming from the Great Recession (e.g. Drew, 2022). The proportion declined then to 6.8 per cent around four years later, when the Irish economy was in a period of recovery (June 2017 to February 2018).

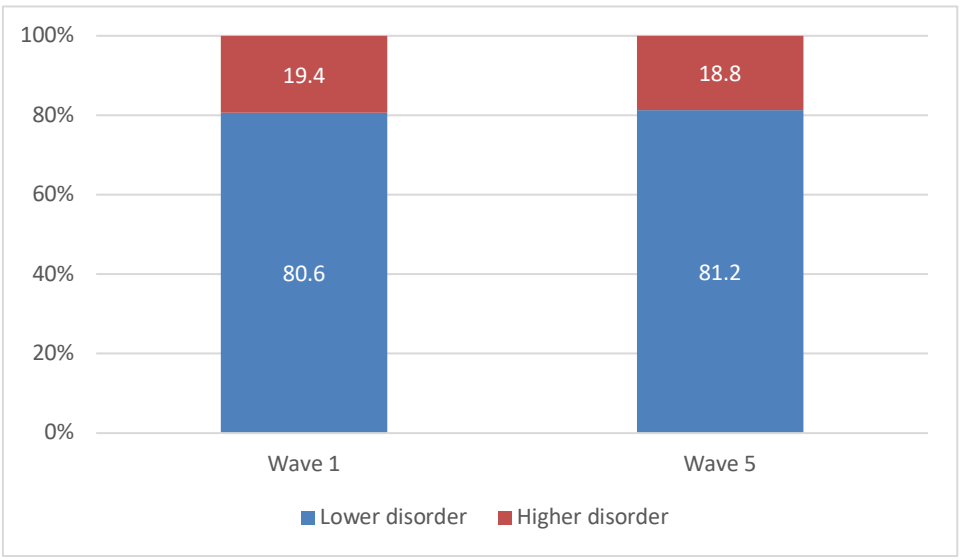
FIGURE 2.4 UNABLE TO WARM HOME IN WAVES 1, 2, 3 AND 5



Source: GUI Cohort '08 waves 1, 2, 3 and 5.
Notes: N = 7,303, only those present in all waves are included; weighted by longitudinal weight.

Living circumstances are not only influenced by the quality of the housing but also by the broader neighbourhood context; in particular, whether the local area is perceived as disorderly or unsafe. From this perspective, there was relatively little change in overall circumstances, with just under a fifth of primary caregivers reporting that they lived in a neighbourhood with high levels of disorder at both timepoints (Figure 2.5).

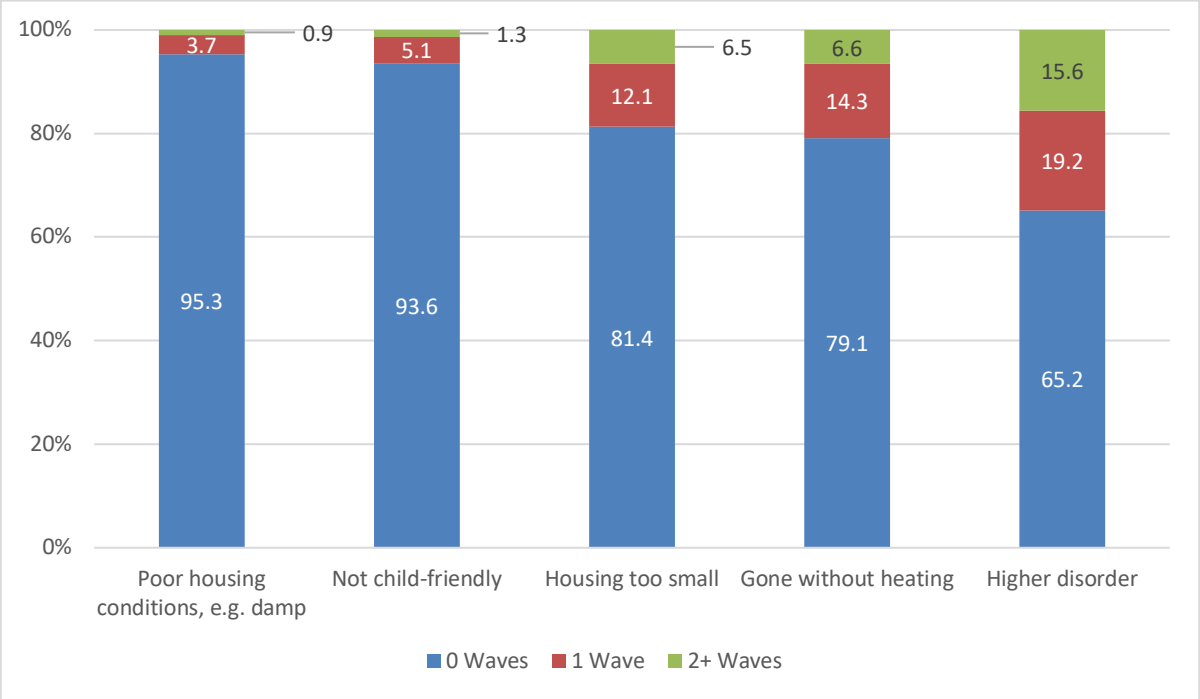
FIGURE 2.5 LIVING IN DISORDERLY NEIGHBOURHOODS IN WAVE 1 AND WAVE 5



Source: GUI Cohort '08 waves 1, 2, 3 and 5.
Notes: N = 7,303, only those present in all waves are included; weighted by longitudinal weight. The neighbourhood disorder measure is a scale created by averaging the responses to four indicators of disorder, coded 1 to 4. If a respondent scored 1–2 on the mean neighbourhood disorder scale, they are categorised as living in lower disorder areas. Scores of 3–4 are categorised as living in higher disorder areas.

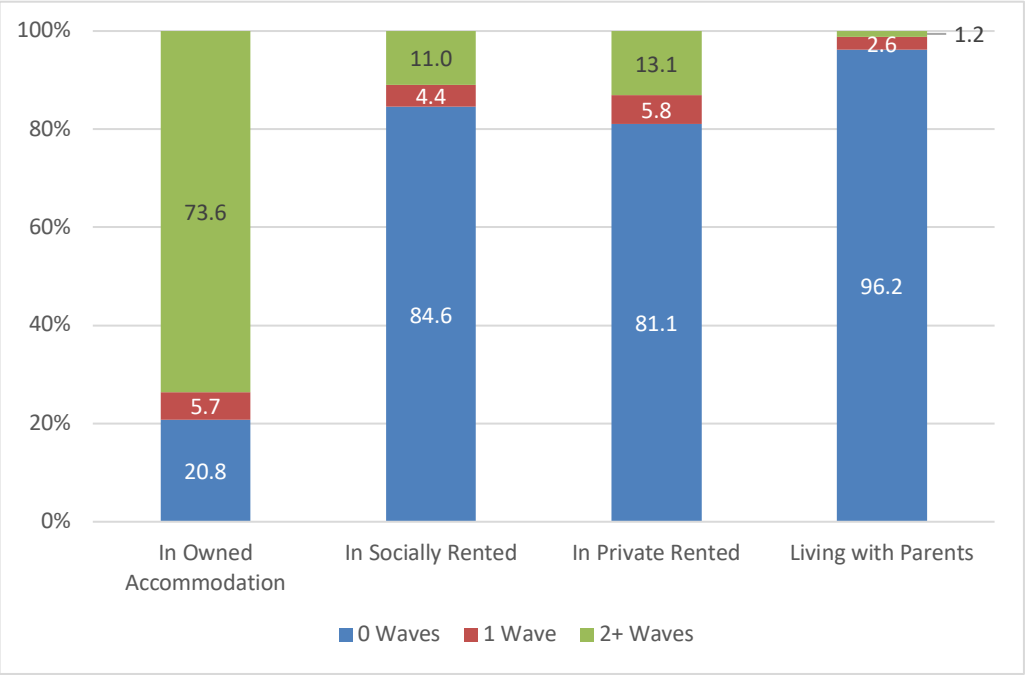
In order to measure potential difference in the duration of exposure to different housing conditions, we examine children's cumulative experience of housing conditions across all waves for which the information is available. Figure 2.6 shows that there is variation in the number of times children experience different housing conditions which may be relevant to the impact of these conditions on their development (see Chapter 4). Figure 2.7 also shows the number of waves young people spent in different types of housing tenancies.

FIGURE 2.6 CUMULATIVE EXPOSURE TO INDICATORS OF HOUSING INADEQUACY ACROSS WAVE 2, WAVE 3 AND WAVE 5



Source: GUI Cohort '08 waves 1, 2, 3 and 5.
Notes: N = 7,303, only those present in all waves are included; weighted by longitudinal weight; all cumulative scores are based on waves 2, 3 and 5 except cumulative neighbourhood disorder measure which is based on waves 1, 2 and 5. See note to fig 2.5 for details of disorder measure.

FIGURE 2.7 CUMULATIVE EXPERIENCE OF LIVING IN DIFFERENT TENANCY TYPES ACROSS WAVE 2, WAVE 3 AND WAVE 5



Source: GUI Cohort '08 waves 2, 3 & 5. We limit to these waves for consistency with the other housing indicators
Notes: N = 7,303, only those present in all waves are included; weighted by longitudinal weight.

2.3 FACTORS ASSOCIATED WITH HOUSING ADEQUACY

2.3.1 Predictors of housing tenure

Table 2.1 presents a multinomial logistic regression model of the factors (measured when the child was nine years old) associated with being in different types of housing tenure when the child was nine years old. The likelihood of being in social housing, the private rented sector or living with parents is contrasted against the chances of being in owner-occupied accommodation. A nested model approach was taken: model 1 first looks at the role of family characteristics, model 2 takes account of socio-demographic factors and model 3 looks at variation by location (urban, that is a city or town with a population of at least 10,000, or rural). Table 2.1 displays the results for model 3, exploring all predictors together, while the full nested modelling results (Models 1–3) are available in Appendix A2.1. Model coefficients show the relative risk ratios among different groups compared to a baseline group. For example, for ethnicity, the results for the Other White, Black, Asian and Other groups show their likelihood of being in different tenancies compared to the White Irish group (the baseline). Values above 1 are associated with a higher likelihood of being in a tenancy and values below 1 are associated with a lower likelihood.

Lone-parent families, especially those with two or more children, were more likely to be in social housing than two-parent families, with larger two-parent families being least likely to be in this sector (Model 1, Appendix A2.1). Parents with a long-

term illness were also more likely to be in social housing. There was some variation by ethnicity and citizenship, with families where neither parent was an Irish citizen and those with Black ethnicity more likely to live in social housing.

Not surprisingly, given the criteria for access, socio-economic factors were strongly associated with being in social housing. Families with lower levels of education, lower levels of income and where parents were unemployed were all more likely to be in this sector. The primary caregiver not being economically active was also related to the chances of being in social housing. The overrepresentation of larger lone-parent families, households headed by those with an illness and non-Irish citizens in social housing was at least partly explained by these socio-demographic factors (compare Models 1 and 2 in Appendix A2.1). The chances of being in social housing was less in rural areas than in towns and cities (Model 3, Table 2.1), reflecting the geographical clustering of such provision.

There are several similarities in the profile of those living in the private rented and social housing sectors, with the overrepresentation of lone-parent families and households headed by parents with disabilities. There are differences, however, in the patterns for ethnic minority and migrant-origin families. All ethnic groups were more likely to be in private rented housing than White Irish families. In addition, non-citizens and Irish mothers with non-citizen partners/spouses were more likely to be in the private rented sector. The private rented sector was not as strongly socially differentiated as social housing. However, being in the sector was more prevalent among households with lower levels of education, where the partner was unemployed and in the lower three income quintiles. Living in private rented accommodation was least likely in rural areas and most likely in cities (Model 3, Table 2.1).

Only a small proportion of households were living with the grandparent(s) of the child (see Figure 2.1). These families were more likely to be headed by lone parents and, not surprisingly, much more likely to be of Irish ethnicity or citizenship. Such living arrangements were also more common in the lowest income quintile and where the mother was unemployed but did not vary by location.

We note that our predictors of tenure do not explicitly capture several key economic drivers of tenure assignment, such as mortgage credit access, rental and house prices levels, or a household's absolute income (given we capture their position in the income distribution). In this way, our predictors of socio-economic status operate as proxies for these key drivers of tenure assignment, providing insights into how socio-economic status shapes the tenures in which families are more likely to live, in part, via such key economic drivers of assignment.

TABLE 2.1 WAVE 5 PREDICTORS OF HOUSING TENURE AT WAVE 5 – MULTINOMIAL LOGISTIC REGRESSION MODEL (BASELINE CATEGORY: OWNER-OCCUPIED ACCOMMODATION) (RELATIVE RISK RATIOS)

Compared to being in owner occupied housing		Outcome: Social Housing	Outcome: Private Renting	Outcome: living with PCG/SCG parents
CG and HH characteristics (measured at wave 5)				
Ethnicity	Baseline: White Irish			
	Other White	1.428	4.157***	0.816
	Black	10.096***	13.638***	0.000***
	Asian	1.253	4.794***	0.000***
	Other	2.238	6.050***	0.000***
HH composition	One parent, one child < 18	3.555**	5.229***	11.388***
	One parent, two+ children < 18	4.772***	4.136***	3.207*
	Baseline: Two parents, one child < 18			
	Two parents, two+ children < 18	0.393***	0.501**	0.441
	Citizenship of CGs			
Irish Citizenship of CGs	Baseline: Both CG citizens			
	PCG citizen/SCG not	1.329	2.502***	4.190*
	PCG not/SCG citizen	0.905	0.709	0.327
	Both CG not citizens	2.269*	5.157***	0.000***
	SCG present but no survey completed	2.297***	2.308***	0.872
	PCG limiting long-term illness			
PCG long-term illness	Baseline: No			
	Yes	1.330+	1.200	0.605
SCG long-term illness	Baseline: No			
	Yes	1.818**	1.520*	0.441
Qualifications	Baseline: Junior Cert or less			
	Leaving Cert	0.726	0.579*	1.191
	Non-degree	0.501***	0.754	1.180
	Degree or more	0.197***	0.500**	1.268
PCG employment status	Baseline: Employed			
	Unemployed	1.924*	1.258	4.076**
	Inactive	1.579**	1.157	1.515
SCG employment status	Baseline: Employed			
	Unemployed	9.595***	2.958*	0.395
	Inactive	1.607+	0.910	1.422
HH income quintiles	Baseline: Lowest			
	2nd	0.678*	0.945	0.229*
	3rd	0.327***	0.683*	0.433+
	4th	0.137***	0.481***	0.198**
	Highest	0.035***	0.265***	0.195**
	Missing	0.352***	0.532**	1.087
Urban/rural	Baseline: Rural			
	Small town	2.578***	1.644*	0.667
	Other urban	2.599***	1.795***	1.658
	Large urban	2.726***	2.412***	1.789+
Constant		0.267***	0.14***	0.028***
Pseudo R-squared		0.27		
Observations		7303		

Source: Growing Up in Ireland 2008 Infant Cohort

Note: *** p<.001, ** p<.01, * p<.05, + p<.10. Sample restricted to households who responded in waves 1, 2, 3 and 5; CG = caregiver; PCG = primary caregiver; SCG = secondary caregiver; HH = household. All predictors measured at wave 5 except for ethnicity measured at wave 1. Full model results available in Appendix A2.1.

2.3.2 Predictors of living in unsuitable accommodation

Table 2.2 examines the factors associated with living in unsuitable accommodation, as reported by the primary caregiver. Model 1 explores whether the likelihood of living in unsuitable accommodation differs depending on the family structure of households, and demographic characteristics of caregivers. In Model 2, we add socio-economic predictors such as mother's qualifications, parental employment and family income. Finally, in Model 3 we add other housing characteristics, including urban/rural and housing tenure.

Family structure, ethnicity, citizenship and disability/chronic illness all predict the chances of living in unsuitable accommodation. Children in lone-parent households were more likely to live in unsuitable accommodation compared to households with two parents and one child. Two-parent families with two or more children were also more likely to live in unsuitable housing compared to the reference group (i.e. two parents with one child). Children born into households where one or both caregivers were not Irish citizens had higher odds of being in unsuitable housing as did those from a Black or Asian background. Children whose primary or secondary caregivers had a limiting long-term illness were more likely to be in unsuitable accommodation. Most of these demographic influences remain significant in Model 2 when we control for the socio-economic characteristics of caregivers. The exceptions relate to being of Asian ethnicity and father's illness which both are explained by differences in income, education and employment status.

For the most part, indicators of higher socio-economic status were linked to better housing outcomes. Families in which the father was unemployed, or the mother was inactive (compared to employed), were more likely to live in unsuitable accommodation. Children in higher-income households were less likely to live in unsuitable accommodation while those in lower-income households were more likely to do so. Net of household income and parent's employment status, mother's educational attainment had little impact: only families where the mother had post-secondary qualifications had significantly lower odds of living in unsuitable accommodation (relative to Junior Certificate or less). Those living in rural areas were less likely to live in unsuitable accommodation while those in cities were most likely to do so (Model 3).

TABLE 2.2 WAVE 5 FACTORS ASSOCIATED WITH LIVING IN UNSUITABLE ACCOMMODATION IN WAVE 5 (ORDERED LOGISTIC REGRESSION) (ODDS RATIOS)

		Model 1	Model 2	Model 3
CG and HH characteristics (measured at wave 5)		Unsuitable Accommodation	Unsuitable Accommodation	Unsuitable Accommodation
Ethnicity	Baseline: White Irish			
	Other White	1.035	1.095	0.853
	Black	2.801***	2.199**	1.167
	Asian	1.870*	1.526	1.114
	Other	0.477	0.381	0.285*
HH composition	One parent, one child < 18	2.938**	2.186*	1.493
	One parent, two+ children < 18	6.255***	3.807***	2.681**
	Baseline: Two parents, one child <18			
	Two parents, two+ children < 18	2.206**	1.936*	2.298**
Irish Citizenship of CGs	Baseline: Both CG citizens			
	PCG citizen/SCG not	2.370***	2.504***	2.095**
	PCG not/SCG citizen	1.538	1.632+	1.857*
	Both CG not citizens	1.751+	1.483	1.313
	SCG present – no completion	1.569***	1.378*	1.226
PCG long-term illness	Baseline: No			
	Yes	1.520***	1.273*	1.200
SCG long-term illness	Baseline: No			
	Yes	1.399*	1.203	1.083
Qualifications of PCG	Baseline: Junior Cert or less			
	Leaving Cert		0.745	0.818
	Non-degree		0.689*	0.818
	Degree or more		0.729+	0.923
PCG employment status	Baseline: Employed			
	Unemployed		1.488	1.320
	Inactive		1.548***	1.434**
SCG employment status	Baseline: Employed			
	Unemployed		2.029*	1.234
	Inactive		1.120	1.162
HH income quintiles	Baseline: Lowest			
	2nd		0.635**	0.672*
	3rd		0.568**	0.623*
	4th		0.410***	0.475***
	Highest		0.404***	0.418***
	Missing		0.464***	0.503**
Urban/rural	Baseline: Rural			
	Small town			1.715**
	Other urban			1.689***
	Large urban			2.358***
Tenancy	Baseline: Owner			
	Rent – Social Housing			2.946***
	Rent – Private Housing			1.984***
	Living with PCG/SCG parents			3.512***
Constant		0.038***	0.09***	0.04***
Pseudo R-squared		0.04	0.07	0.12
Observations		7303	7303	7303

Source: Growing Up in Ireland 2008 Infant Cohort

Note: *** p<.001, ** p<.01, * p<.05, + p<.10. Sample restricted to households who responded in waves 1, 2, 3 and 5; CG = caregiver; PCG = primary caregiver; SCG = secondary caregiver; HH = household. All predictors measured at wave 5 except for ethnicity measured at wave 1.

Model 3 includes housing tenure in the model. Those in owner-occupied accommodation were less likely than all other groups to be living in unsuitable accommodation, with private rented tenants occupying an interim position and the poorest quality suitability reported by those living with their own parents or in social housing. Many of the socio-demographic factors remain significant, controlling for housing tenure, including larger family size, mother's inactivity and income, suggesting socially structured variation in quality within sectors.

2.3.3 Predictors of heating deprivation

Seven per cent of primary caregivers reported that their household had had to go without heating for financial reasons over the past year in wave 5 (Figure 2.2). Table 2.3 explores the factors predicting this experience of heating deprivation. Being a lone-parent family, mother's illness/disability and being Black emerged as significant risk factors for such deprivation (Model 1). Being in the top three income quintiles was linked to lower chances of going without heating but there was little difference among the lowest two quintiles (Model 2). Even taking account of income, parental unemployment was a risk factor for heating deprivation. Such deprivation was less prevalent in cities (even controlling for socio-demographic factors) and more common in private rented accommodation and social housing.

TABLE 2.3 WAVE 5 FACTORS ASSOCIATED WITH BEING UNABLE TO HEAT HOME AT WAVE 5 (ODDS RATIOS)

		Model 1	Model 2	Model 3
CG and HH characteristics (measured at wave 5)		Struggle to Heat Home	Struggle to Heat Home	Struggle to Heat Home
Ethnicity	Baseline: White Irish			
	Other White	0.738	0.719	0.578*
	Black	2.273*	1.629	1.303
	Asian	1.873+	1.527	1.404
	Other	0.205	0.194	0.156+
HH composition	One parent, one child < 18	5.379***	3.526**	3.302**
	One parent, two+ children < 18	8.257***	4.501***	4.219***
	Baseline: Two parents, one child <18			
	Two parents, two+ children < 18	1.081	0.895	1.020
Irish Citizenship of CGs	Baseline: Both CG citizens			
	PCG citizen/SCG not Irish citizen	0.689	0.666	0.673
	PCG not/SCG Irish citizen	1.655	1.934	1.922
	Both CG not Irish citizens	1.984	1.611	1.277
	SCG present – no completion	2.175***	1.843**	1.690**
PCG limiting illness	Baseline: No			
	Yes	2.533***	2.147***	2.061***
SCG limiting illness	Baseline: No			
	Yes	1.289	1.002	0.910
Qualifications of PCG	Baseline: Junior Cert or less			
	Leaving Cert		0.772	0.811
	Non-degree		0.889	0.933
	Degree or more		0.751	0.817
PCG employment status	Baseline: Employed			
	Unemployed		2.262**	2.242*
	Inactive		1.180	1.138
SCG employment status	Baseline: Employed			
	Unemployed		2.180*	1.871
	Inactive		1.401	1.458
HH income quintiles	Baseline: Lowest			
	2nd		0.720+	0.726+
	3rd		0.584*	0.618+
	4th		0.272***	0.305***
	Highest		0.113***	0.145***
	Missing		0.557*	0.671
Urban/rural	Baseline: Rural			
	Small town			1.381
	Other urban			1.377+
	Large urban			0.629*
Tenancy	Baseline: Owner			
	Rent – Social Housing			1.644*
	Rent – Private Housing			2.240***
	Living with PCG/SCG parents			0.323+
Constant		0.025***	0.067***	0.049***
Pseudo R-squared		0.11	0.16	0.18
Observations		7303	7303	7303

Source: Growing Up in Ireland 2008 Infant Cohort

Note: *** p<.001, ** p<.01, * p<.05, + p<.10. Sample restricted to households who responded in waves 1, 2, 3 and 5; CG = caregiver; PCG = primary caregiver; SCG = secondary caregiver; HH = household. All predictors measured at wave 5 except for ethnicity measured at wave 1.

2.3.4 Predictors of neighbourhood disorder

Just under a fifth of the families lived in neighbourhoods they considered disorderly at age nine (Figure 2.4). This was more common for lone-parent families and families where parents had an illness/disability (Model 1). These patterns were not explained by income, education and employment status. Living in disorderly neighbourhoods was less prevalent for graduate families and more prevalent in the lowest income quintile and where one or both parents were unemployed (Model 2). Disorderly neighbourhoods were most common in large urban areas and among those living in social housing (Model 3). Living in social housing explains the greater tendency of lone-parent and unemployed families to live in disorderly neighbourhoods but parental illness and low income remain significant risk factors for neighbourhood disorder, regardless of tenure type (compare Models 2 and 3).

TABLE 2.4 WAVE 5 FACTORS ASSOCIATED WITH NEIGHBOURHOOD DISORDER AT WAVE 5 (OLS)

		Model 1	Model 2	Model 3
CG and HH characteristics (measured at wave 5)		Neighbourhood Disorder	Neighbourhood Disorder	Neighbourhood Disorder
Ethnicity	Baseline: White Irish			
	Other White	-0.015	-0.005	-0.060
	Black	-0.027	-0.083	-0.282***
	Asian	0.134+	0.117	0.021
	Other	-0.232*	-0.279**	-0.356***
HH composition	One parent, one child < 18	0.216**	0.151*	0.081
	One parent, two+ children < 18	0.276***	0.189**	0.087
	Baseline: Two parents, one child < 18			
	Two parents, two+ children < 18	-0.033	-0.044	-0.013
Irish Citizenship of CGs	Baseline: Both CG citizens			
	PCG citizen/SCG not	-0.034	-0.040	-0.080+
	PCG not/SCG citizen	0.034	0.053	0.084+
	Both CG not citizens	0.016	-0.009	0.018
	SCG present – no completion	0.062*	0.036	0.028
PCG limiting illness	Yes	0.141***	0.118***	0.097***
SCG limiting illness	Yes	0.108***	0.094**	0.065*
Qualifications of PCG	Baseline: Junior Cert or less			
	Leaving Cert		-0.079	-0.042
	Non-degree		-0.055	0.003
	Degree or more		-0.109*	-0.051
PCG employment status	Baseline: Employed			
	Unemployed		0.194*	0.158+
	Inactive		0.010	-0.022
SCG employment status	Baseline: Employed			
	Unemployed		0.265**	0.112
	Inactive		-0.034	0.010
HH income quintiles	Baseline: Lowest			
	2nd		-0.117**	-0.095*
	3rd		-0.096*	-0.066+
	4th		-0.183***	-0.151***
	Highest		-0.173***	-0.201***
	Missing		-0.157***	-0.127**
Urban/rural	Baseline: Rural			
	Small town			0.197***
	Other urban			0.167***
	Large urban			0.381***
Tenancy	Baseline: Owner			
	Rent – Social Housing			0.343***
	Rent – Private Housing			-0.023
	Living with PCG/SCG parents			0.121
Constant		1.631***	1.840***	1.608***
R-squared		0.037	0.063	0.157
Observations		7303	7303	7303

Source: Growing Up in Ireland 2008 Infant Cohort
Note: *** p<.001, ** p<.01, * p<.05, + p<.10. Sample restricted to households who responded in waves 1, 2, 3 and 5; CG = caregiver; PCG = primary caregiver; SCG = secondary caregiver; HH = household.

2.4 CONCLUSIONS

This chapter has examined the type and quality of housing lived in by children from infancy to middle childhood. At the aggregate level, there is relative stability in housing tenure, though some shift away from private rented to social housing over the lifecycle. Levels of neighbourhood disorder are also relatively stable which is likely to reflect low rates of residential mobility (see Chapter 3). A notable minority of children experience persistent neighbourhood disorder. There was a small increase in the proportion of respondents saying their accommodation was unsuitable, which was driven by a rise in the perception that the house was too small. There is a very slight reduction over time in reported heating deprivation but 7 per cent of children experienced persistent heating deprivation (for two or more interview waves) which is likely to intensify any negative effects on health outcomes.

The analyses highlight important differences by socio-demographic characteristics in housing tenure and conditions. Not surprisingly, income is a key driver of access to owner-occupied accommodation, with lower-income groups overrepresented in social housing, multigenerational households and, to a somewhat lesser extent, private rented accommodation. Income is also predictive of access to adequate housing, with lower-income groups more likely to report unsuitable accommodation, heating deprivation and disorderly neighbourhoods. The influence of income on housing quality does not solely operate through tenure type, suggesting a social gradient in quality within housing sectors.

Lone-parent families emerge as a distinctive group, being more likely to live in social or private rented housing or in multigenerational households. As a result, the children of lone-parent families are more likely to be brought up in disorderly neighbourhoods, a risk factor for behaviour difficulties in adolescence (Smyth and Darmody, 2021). Even taking account of tenure, those in lone-parent families are more likely to experience heating deprivation and unsuitable accommodation (the latter only in larger lone-parent families).

Children from migrant-origin families are more likely to live in rented accommodation, either private or social housing. This is consistent with Census analysis which shows that across the whole population, over half (56 per cent) of all migrants were living in private rented housing in 2016, compared to 13 per cent of Irish-born, though the proportion living in social housing was very similar for both groups (10%) (McGinnity et al., 2022). In terms of housing quality, children of Black ethnicity are less likely to live in suitable accommodation, largely because of their concentration in rented accommodation. However, in keeping with earlier research by Fahey et al. (2019), there is no evidence that minority ethnic groups are more concentrated in disorderly neighbourhoods.

The association between urban/rural location and housing varies across the dimensions of housing. While those in larger urban settings are more likely to experience unsuitable accommodation and neighbourhood disorder and to live in private rented or social housing than those living in rural areas, they are less likely to live in houses experiencing heating deprivation.

CHAPTER 3

Residential mobility

3.1 EXPERIENCES OF RESIDENTIAL MOBILITY

3.1.1 Frequency of moving house

We begin by looking at how frequently children in Ireland experience residential mobility between their birth and age nine. To explore this, we use a question in the Growing Up in Ireland (GUI) data where primary caregivers were asked about whether the study child had experienced 'moving house'. This was asked in wave 3 of the survey about residential mobility since the child was born; this covers the period between the child's birth and age five. They were also asked the same question in the wave 5 survey about mobility since the family were surveyed at wave 3; this covers the period between age five and age nine. Using these measures, we can look at the proportion of children who never experienced moving house between birth and age nine, the proportion who experienced *at least one* move, and the proportion who experienced *at least two moves.*[16] While considerable efforts were made by the GUI study team to retain respondents that move house within the State, it is still likely that attrition will be higher amongst those who are more mobile. Therefore, while the longitudinal survey weights address attrition, it is likely that mobility is underestimated.

Table 3.1 demonstrates that a substantial majority of children in the sample (71.4 per cent) have never moved house between birth and age nine. However, this means that close to 30 per cent of children have experienced moving house by the time they are nine years old. Among those who have moved house, most experience at least one move (21.8 per cent) while a smaller proportion experience at least two moves (6.7 per cent). Moving home is slightly more common in early childhood (19.8 per cent of children experienced a move from birth to age five) compared to middle childhood (15.5 per cent moved between ages five and nine), although the two periods are not equal in length.

[16] The GUI data do not allow us to measure the full number of times a child has moved house. These available measures can tell us whether a child has never experienced moving house. They can also tell us whether a child has experienced *at least one* move. This would be if a PCG mentioned the child had experienced 'moving house' *either* between 'birth and wave 3' *or* 'wave 3 and wave 5' (although children in this category may have experienced more than one move within either of those periods). They can also tell us whether a child has experienced *at least two* moves. This would be if a PCG mentioned the child had experienced 'moving house' *both* between 'birth and wave 3' *and* 'wave 3 and wave 5' (although, again, children in this category may have experienced more than two moves, if they experienced more than one move within either of those periods).

TABLE 3.1 PROPORTION OF CHILDREN MOVING HOUSE BETWEEN WAVE 1 AND WAVE 5

	%	N
No moves	71.44	5204
Moved in early *or* middle childhood	21.79	1617
Moved in early *and* middle childhood	6.77	482

Source: Growing Up in Ireland 2008 Infant Cohort
Notes: Sample restricted to households who responded in waves 1, 2, 3 and 5

3.1.2 Drivers of household mobility during a child's early years and middle years

We next want to understand what types of household are more likely to experience residential mobility during their child's early and middle years. In particular, we look at the characteristics of households and caregivers when their children were nine months old (when households were surveyed in the first wave of the data, wave 1) and examine which kinds of socio-demographic groups are more likely to go on to experience residential mobility (1) during their child's early years (birth to five years old) and (2) during their child's middle years (five to nine years old), and explore whether differences emerge between the periods.

To explore which characteristics are most important for residential mobility, we perform logistic regression modelling to predict whether a child experienced a move between birth and age five (Table 3.2) and between age five and age nine (Table 3.3). Estimates from the logistic regressions are interpreted as odds ratios. Odds greater than 1 mean that a group is more likely to have moved house than the reference category. Odds of 1 indicate that the group has the same odds of having moved as the reference group. Odds of less than 1 indicate that the group has lower odds of having moved compared to the reference category. In this way, if we are looking at how household tenancy predicts moving, then homeowners would be considered the reference category and the odds of moving from being in other types of tenancy would be explored relative to homeowners.

We begin by looking at what characteristics of households and caregivers at the time of their child's birth predict moving house when their child was aged between birth and five years old – their early years (Table 3.2). Model 1 explores whether the odds of having experienced a move differ depending on the family structure of households, and the social and demographic characteristics of parents, such as whether they have a limiting long-term illness or their ethnicity. In Model 2, we explore socio-economic predictors of moving, such as educational qualifications or household income. Finally, in Model 3, we look at whether odds of moving differ by children's housing situation, including the tenancy of their families' household and whether they live in a more urban or rural area.

TABLE 3.2 WAVE 1 FACTORS ASSOCIATED WITH MOVING HOUSE BETWEEN AGES 0 TO 5 YEARS OLD (LOGISTIC REGRESSION) (ODDS RATIOS)

		MODEL 1	MODEL 2	MODEL 3
CG and HH characteristics (measured at wave 1)		Moved wave 1 to wave 3	Moved wave 1 to wave 3	Moved wave 1 to wave 3
Ethnicity	Baseline: White Irish			
	Other White	1.176	1.084	0.680+
	Black	1.426	1.267	0.706
	Asian	1.170	1.097	0.584+
	Other	1.106	1.090	0.685
HH composition	One parent, one child < 18	4.298***	3.780***	1.952***
	One parent, two+ children < 18	2.290***	1.928***	1.127
	Baseline: Two parents, one child < 18			
	Two parents, two+ children < 18	0.576***	0.553***	0.714***
Irish Citizenship of CGs	Baseline: Both CG citizens			
	PCG citizen/SCG not	1.434*	1.389+	1.039
	PCG not/SCG citizen	1.859**	1.772**	1.846**
	Both CG not citizens	3.021***	2.755***	1.422
	SCG present – no completion	1.385*	1.389*	1.234
PCG long-term illness	Baseline: No			
		1.456**	1.447**	1.546***
SCG long-term illness	Baseline: No			
		1.540*	1.624**	1.499*
Qualifications of PCG	Baseline: Junior Cert or less			
	Leaving Cert		1.061	1.098
	Non-degree		1.198	1.388*
	Degree or more		1.462**	1.708**
PCG employment status	Baseline: Employed			
	Unemployed		1.533*	1.187
	Inactive		1.324**	1.143
SCG employment status	Baseline: Employed			
	Unemployed		1.478*	1.076
	Inactive		0.676*	0.618*
HH income quintiles	Baseline: Lowest			
	2nd		0.948	1.052
	3rd		0.646**	0.795
	4th		0.581***	0.857
	Highest		0.840	1.250
	Missing		0.586**	0.804
Urban/rural	Baseline: Rural			
	Small town			1.860***
	Other urban			1.593***
	Large urban			1.508***
Tenancy	Baseline: Owner			
	Rent – Social Housing			2.885***
	Rent – Private Housing			7.554***
	Living with PCG/SCG parents			5.004***
Constant		0.195***	0.194***	0.076***
Pseudo R-squared		0.078	0.092	0.164
Observations		7303	7303	7303

Source: Growing Up in Ireland 2008 Infant Cohort

Note: Sample restricted to households who responded in waves 1, 2, 3 and 5; CG = caregiver; PCG = primary caregiver; SCG = secondary caregiver; HH = household

Looking first at the role of parents' socio-demographic status and family structure (Model 1, Table 3.2), the strongest predictor of a child experiencing moving house between birth and age five is if they were born into a lone-parent household where they were also the only child under 18 in the household (compared to being born into a two-parent household with only one child under 18). Children born into a lone-parent household with two or more children under 18 were also more likely to experience moving house, compared to being born into a two-parent household with only one child under 18. At the same time, children born into a two-parent household with two or more children under 18 years old were less likely to experience a move during their early years. Children born into households where one, or especially both caregivers, were not Irish citizens had higher odds of moving between birth and age five. Concurrently, children whose primary and secondary caregivers had a limiting long-term illness when they were born also had higher odds of moving house during their early years. Lastly, there is no difference in the odds of moving between different ethnic groups. However, this may be due to the strong relationship between citizenship status and ethnicity, rendering the latter non-significant.

Model 2 includes the socio-economic characteristics of caregivers in the model. For the most part, indicators of higher socio-economic status are linked to less residential mobility during a child's early years. Children born into households with a higher income are generally less likely to have moved between birth and age five. Those born into households where the father was unemployed (compared to employed), or the mother was unemployed or inactive[17] (compared to employed), are also more likely to have experienced a move during their child's early years. However, higher socio-economic status can also be linked to greater residential mobility. Children born to mothers with degree-level qualifications or higher are more likely to move during their early years, compared to those with a Junior Certificate or less, while those born to employed fathers (compared to inactive fathers) are also more likely to experience a move.

Indeed, the relationship between household income and moving is not straightforward. The children least likely to move are those born into the fourth household income quintile, compared to those born into the lowest income quintile. However, children born into the fifth (highest) income quintile are just as likely to experience an early years move as children in the lowest income quintile. In fact, they are actually more likely to experience a move than those born into the fourth income quintile.[18] The socio-economic status of parents does not account for much of the previously observed effects of family structure and socio-demographic characteristics. Family structure, limiting long-term illness and, to a

17 This inactive group does not include mothers on maternity leave when the child was nine months old who are classed as employed.

18 Testing demonstrates that this difference is statistically significant.

lesser extent, citizenship status continue to predict likelihood of moving, even after controlling for socio-economic status.

In the final model (Model 3), we add in household tenancy and whether a child is born into a more urban or rural area. The tenancy of the household into which a child is born is the strongest predictor of whether they experience a move over their early years across all predictors. Children born to parents in social housing are more likely to experience a move compared to being born into a homeowning household, despite nominally having the same security of tenure as homeowners. However, research in the UK also shows families in social housing are more likely to experience moves during their child's early years compared to families in owned homes[19]. The numbers are too small to check if these reflect movements from social housing into ownership (see Table 3.5 below). However, those odds of moving home are even higher for children born to caregivers who are living in their parents' homes, and are especially high for children born to families in private rental accommodation. Children born in more urban (compared to rural) areas are also more likely to experience moves before age five.

Importantly, the tenancy into which a child is born, and the urban/rural location of their home, can explain a large part of the effects of the other predictors of moving previously observed. The effects of being born into a lone-parent household with two children under 18, to most parents without Irish citizenship, having an unemployed or inactive (compared to employed) mother, an unemployed (compared to employed) father, or being born into a household with a higher income, are all reduced and now rendered non-significant at the $p<0.05$ level when we account for urban/rural location and particularly tenancy.[20] At the same time, the higher odds of moving among children born into a lone-parent household with one child under 18 and the lower odds of moving among those born into a two-parent household with two or more children under 18 (compared to two-parent households with one child under 18) are notably reduced. In other words, much of the reason children born to these groups are more likely to experience moving house between birth and age five is that they are less likely to have been born into homeowning households, and more likely to have been born into social housing, private renting, or to parents living with their own parents. However, even accounting for tenancy and urban/rural location, we continue to see that family structure, education, limiting long-term illness, and labour market inactivity remain associated with moving over a child's early years.

---

19 Using the Millennium Cohort Study, Gambaro et al. (2017) showed that children in social housing at age nine months were more likely to experience moving house between nine months and five years of age compared to those born into owned homes. Although, children born into private renting tenancies experienced the highest likelihoods of moving home.

20 Re-running Model 3 but only controlling for tenancy (not urban/rural location) demonstrates most of the changes are driven by this variable.

We next explore whether those groups who were more likely to experience moving house during their child's early years are also more likely to see residential mobility during their child's middle years (Table 3.3). In other words, we look at whether the characteristics of households and parents when a child was nine months old go on to predict residential mobility between the ages of five to nine years old. The family structure a child was born into remains a key predictor of moving even into their middle years (Model 1). This includes children born to lone parents, who are more likely to move house in both their early and middle years, compared to those born into two-parent households with one child. Similarly, children born to two-parent households with two or more children under 18 are less likely to experience moving house in either their early or middle years (compared to those born into two-parent households with one child). Citizenship status also remains important for residential mobility. Families where the father or both parents are not Irish citizens are more likely to move during their child's early and middle years (although families where only the mother is not a citizen become more residentially stable in their child's middle years) (Model 1).

TABLE 3.3 WAVE 1 FACTORS ASSOCIATED WITH MOVING HOUSE BETWEEN AGES 5 TO 9 YEARS OLD (LOGISTIC REGRESSION) (ODDS RATIOS)

		MODEL 1	MODEL 2	MODEL 3
CG and HH characteristics (measured at wave 1)		Moved wave 3 to wave 5	Moved wave 3 to wave 5	Moved wave 3 to wave 5
Ethnicity	Baseline: White Irish			
	Other White	1.537*	1.413+	1.006
	Black	1.383	1.223	0.799
	Asian	2.142*	1.955*	1.301
	Other	1.685	1.547	1.146
HH composition	One parent, one child < 18	3.170***	2.847***	1.791**
	One parent, two+ children < 18	1.937***	1.690*	1.162
	Baseline: Two parents, one child < 18			
	Two parents, two+ children < 18	0.550***	0.536***	0.641***
Irish Citizenship of CGs	Baseline: Both CG citizens			
	PCG citizen/SCG not	1.487*	1.440+	1.174
	PCG not/SCG citizen	0.971	0.946	0.951
	Both CG not citizens	1.773**	1.678*	1.011
	SCG present – no completion	1.261	1.220	1.108
PCG long-term illness	Baseline: No			
	Yes	1.252+	1.255+	1.313+
SCG long-term illness	Baseline: No			
	Yes	1.148	1.164	1.081
Qualifications of PCG	Baseline: Junior Cert or less			
	Leaving Cert		1.183	1.221
	Non-degree		1.296	1.419*
	Degree or more		1.571**	1.715**
PCG employment status	Baseline: Employed			
	Unemployed		1.111	0.909
	Inactive		1.154	1.018
SCG employment status	Baseline: Employed			
	Unemployed		1.218	0.966
	Inactive		0.794	0.780
HH income quintiles	Baseline: Lowest			
	2nd		0.775	0.803
	3rd		0.647**	0.741+
	4th		0.563***	0.719+
	Highest		0.695*	0.872
	Missing		0.803	1.016
Urban/rural	Baseline: Rural			
	Small town			1.754***
	Other urban			1.371*
	Large urban			1.480***
Tenancy	Baseline: Owner			
	Rent – Social Housing			1.994***
	Rent – Private Housing			4.143***
	Living with PCG/SCG parents			2.048**
Constant		0.164***	0.174***	0.092***
Pseudo R-squared		0.0601	0.067	0.1051
Observations		7303	7303	7303

Source: Growing Up in Ireland 2008 Infant Cohort
Note: Sample restricted to households who responded in waves 1, 2, 3 and 5; CG = caregiver; PCG = primary caregiver; SCG = secondary caregiver; HH = household

Higher qualifications remain important for residential mobility even into children's middle years. Those born to mothers who had degree-level qualifications or higher at the time of their birth are more likely to move house during their middle years, as well as their early years, compared to those with a Junior Certificate or less. Higher household incomes also continue to predict greater residential stability, with those born into households in the third- or fourth-income quintile being less likely to move in both their early and middle years, compared to those born into the lowest income quintile. In fact, children born into households in the highest income quintile now experience greater stability in their middle years than those in the lowest quintile (compared to their similar likelihood of moving during their early years). Children born in more urban compared to rural areas also continue to experience greater mobility into their middle years as well as their early years.

At the same time, some household characteristics that were important for mobility during a child's early years are no longer significant predictors of moving house during their middle years. Children born into households where their parents had a long-term illness are only more likely to move house during their early years. They are no more likely to move during their middle years as those born to parents without a long-term illness (although the effect of a mother's long-term illness remains significant at the $p<.1$ level) (Model 1). Similarly, the employment status of either a child's mother or father at their birth is important for their likelihood of moving in their early years. However, these no longer significantly predict moving home during a child's middle years (Model 2). This may be because characteristics like employment status are much more changeable over time.

Importantly, the type of tenancy a child is born into (when they were nine months old) continues to strongly predict their experiences of moving house into their middle years. Those children born into social housing, private rentals or those living with their caregivers' parents are more likely to experience moving home in their middle years along with their early years, compared to those in housing owned by their parents. Although, the odds of these children moving home are reduced in their middle compared to their early years.

3.2 RESIDENTIAL MOBILITY AND HOUSING ADEQUACY

We next look at how experiences of moving house are associated with changes in our key indicators of housing adequacy: housing suitability, tenancy, whether households are able to heat their home, and neighbourhood disorder. Moving house is perhaps the most important driver of changes in housing adequacy, both towards better but also worse housing outcomes.

In the following section, we examine the proportion of children who experience different types of housing adequacy transitions from residential mobility in their early childhood (between wave 1, when they are nine months old, and wave 3, when they are five years old) and middle childhood (between wave 3, when they are five years old, and wave 5, when they are nine years old). Table 3.4 shows how residential mobility is associated with transitions in accommodation suitability. As previously seen, moving home is a relatively uncommon event. Eighty-five per cent of children experienced no residential mobility between age five and nine, while moving home is slightly more common, although still relatively rare, during a child's early years (80 per cent of children experienced no residential mobility between nine months and five years of age). During a child's middle years, among those that did move house, the most common type of transition is from homes where the accommodation is reported as suitable to homes where it is also reported as suitable (10.5 per cent). Importantly, we also see that positive housing adequacy transitions (from not suitable to suitable) are twice as common (2.9 per cent) as negative housing adequacy transitions (from suitable to not suitable accommodation) (1.5 per cent). The least common transition from residential mobility is between homes that are both not suitable to a family's needs (0.7 per cent). The same pattern exists for moves during a child's early years. Moves from 'suitable to suitable' accommodation is the most common (14.8 per cent) and positive housing adequacy transitions (from not suitable to suitable) are similarly twice as common (2.9 per cent) as negative housing adequacy transitions (from suitable to not suitable accommodation) (1.5 per cent). The least common also remains transitions between homes that are both not suitable to a family's needs (0.6 per cent).

TABLE 3.4 TRANSITIONS IN ACCOMMODATION QUALITY BETWEEN (1) AGES 9 MONTHS TO 5 YEARS, (2) AGES 5 TO 9

Accommodation Suitability	Age 9 months to 5 years		Age 5 to 9 years	
	(%)	Freq.	(%)	Freq.
No move	80.21	5844	84.47	6181
Suitable -> Suitable	14.78	1092	10.46	797
Not suitable -> Suitable	2.9	217	2.89	208
Suitable -> Not suitable	1.49	109	1.5	85
Not suitable -> Not suitable	0.62	41	0.68	32

Source: Growing Up in Ireland 2008 Infant Cohort
Notes: Sample restricted to households who responded in waves 1, 2, 3 and 5

Table 3.5 shows how moving house is associated with transitions between 'owner-occupied homes' and 'rented homes or other tenancies' (where other tenancies is primarily where children are living with their grandparents); although patterns of this 'rented and other' tenancy group are largely driven by the much larger number

of social and private renters in this group.[21] When moving house, we find that people are more likely to stay within the same type of tenancy than experience a change in tenancy during children's middle years: 7 per cent of people move from rented/other accommodation to rented/other accommodation, while 4 per cent move from a home that they own to another home they own. When tenancies do change during a child's middle years, we find children are more likely to move from a rented/other home to an owned home (2.8 per cent), although 1.6 per cent of children also experience a move from an owned home to rented/other tenancy. During a child's early years, we also see that when people do move, they are more likely to stay within the same type of tenancy: 5 per cent of moves are between homes that a family owns and 9.6 per cent are between rented accommodation. However, a key difference during a child's early years is that children are more likely to move from an owned home to rented/other accommodation (3.5 per cent) than from rented/other accommodation to an owned home (1.7 per cent).

TABLE 3.5 TRANSITIONS IN TENANCY BETWEEN (1) AGES 9 MONTHS TO 5 YEARS, (2) AGES 5 TO 9

Tenancy	Age 9 months to 5 years		Age 5 to 9 years	
	(%)	Freq.	(%)	Freq.
No move	80.2	5844	84.5	6181
Own -> Own	5.1	417	4.1	328
Rent and other -> Own	1.7	184	2.8	239
Own -> Rent and other	3.5	203	1.6	113
Rent and other -> Rent and other	9.6	655	7.1	442

Source: Growing Up in Ireland 2008 Infant Cohort
Notes: Sample restricted to households who responded in waves 1, 2, 3 and 5

Table 3.6 explores how residential mobility is associated with the ability of households to keep their home warm. Among those households that move during a child's middle years, most experience positive housing transitions. The largest share of moves is from homes where the household is able to keep the home warm to homes where they are able to keep their homes warm (11.5 per cent). While 2.1 per cent of households move from homes where they struggle to keep their household warm to homes where they can warm the household. Only 1 per cent of children experience moves from homes where the family is able to warm the household to homes where they struggle to do so. While only 1 per cent of children transition between homes where the family has had to go without heating. Among moves during a child's early years, the largest share of moves is again between homes which families are able to warm (14.45 per cent). However, in contrast to experiences during a child's middle years, we see that during a child's early years families are more likely to have moved from homes where they are able to warm

21 The numbers of moving respondents in the 'social renters', 'private renters' and 'child living with grandparents' are not large enough to analyse separately and so are combined into the single 'rented homes or other tenancies' group.

the household to homes where they struggle to do so (2.9 per cent) than they are to move from homes where they struggle to keep their household warm to homes where they can (1.6 per cent).

TABLE 3.6 TRANSITIONS IN ABILITY TO WARM HOME BETWEEN (1) AGES 9 MONTHS TO 5 YEARS, (2) AGES 5 TO 9

Struggle to warm home	Age 9 months to 5 years		Age 5 to 9 years	
	(%)	Freq.	(%)	Freq.
No move	80.21	5844	84.47	6181
Able to warm home -> Able to warm home	14.45	1132	11.54	885
Gone without heating -> Able to warm home	1.61	94	2.12	133
Able to warm home -> Gone without heating	2.9	188	0.95	48
Gone without heating -> Gone without heating	0.83	45	0.91	56

Source: Growing Up in Ireland 2008 Infant Cohort
Notes: Sample restricted to households who responded in waves 1, 2, 3 and 5

Table 3.7 looks at how residential mobility is related to transitions between different levels of neighbourhood disorder. The largest share of moves during children's middle years is from areas with low disorder to areas with low disorder (10.6 per cent), while 2.6 per cent of children experience moves from areas with high disorder to low disorder. However, 1.6 per cent of children transition from low disorder areas to high disorder areas during their middle years, while 1.2 per cent of children experience moves from high disorder areas to other areas with high levels of disorder. The same pattern exists for moves during a child's early years. The largest share of moves involves positive housing transitions: 12.2 per cent experience moves from low disorder areas to other low disorder areas while 3.6 per cent move from high disorder areas to low disorder areas. Still, a non-trivial group of people move from low disorder areas to high disorder areas (2.2 per cent) while 1.8 per cent of children experience moves from high disorder areas to other areas with high levels of disorder during their early years.

TABLE 3.7 TRANSITIONS IN NEIGHBOURHOOD DISORDER BETWEEN (1) AGES 9 MONTHS TO 5 YEARS, (2) AGES 5 TO 9

Neighbourhood disorder	Age 9 months to 5 years		Age 5 to 9 years	
	(%)	Freq.	(%)	Freq.
No move	80.21	5844	84.47	6181
Low disorder -> Low disorder	12.16	964	10.56	798
High disorder -> Low disorder	3.63	242	2.18	150
Low disorder -> High disorder	2.2	147	1.63	107
High disorder -> High disorder	1.81	106	1.17	67

Source: Growing Up in Ireland 2008 Infant Cohort
Notes: Sample restricted to households who responded in waves 1, 2, 3 and 5; the neighbourhood disorder measure is a scale created by averaging the responses to four indicators of disorder, coded 1 to 4. If a respondent scored 1–2 on the mean neighbourhood disorder scale, they are categorised as living in lower disorder areas. Scores of 3–4 are categorised as living in higher disorder areas.

3.3 DRIVERS OF RESIDENTIAL MOBILITY DURING A CHILD'S MIDDLE YEARS

The tables above demonstrate how moving home, while not common, can still drive important changes in housing adequacy during a child's early and middle years. Previously we examined which characteristics of families and households when the child was nine months old predicted a higher likelihood of experiencing residential mobility both during a child's early years and during their middle years. We now focus in on what drives home moves between the ages of five and nine (waves 3 and 5) in particular. Here we seek to examine how *transitions* in families' lives during a child's middle years, such as gaining or losing a partner or experiencing a change in household income, might trigger moving house over the period. Exploring the dynamics of residential mobility during children's middle years will also be important for our analysis of how middle years residential mobility (ages five to nine) can affect children's socio-emotional, cognitive and health outcomes at age nine (in Chapter 4).

To examine the drivers of residential mobility during a child's middle years, we perform logistic regression modelling to predict whether a child experienced a move between age five and age nine (Table 3.8). We include two types of predictors in the models: static predictors, which generally do not change much over time, such as parent's qualifications, ethnicity or limiting long-term illnesses; and dynamic predictors, such as changes in household income, partnerships, or employment status. When examining the effects of static predictors, we use their value at wave 3, just before any move took place. When examining the effects of dynamic predictors (changes between wave 3 and wave 5), we distinguish those whose status does not change over time from those who experience a transition. For example, in the case of employment status, we look at the effects of remaining employed between wave 3 and wave 5, changing from employed to not employed, changing from not employed to employed, and those remaining not employed

between wave 3 and wave 5. We begin by testing the role of static and dynamic socio-demographic and family structure predictors in Model 1. Model 2 introduces static and dynamic predictors of socio-economic status. In Model 3, we include whether a child lives in a more urban or rural area.

In Model 1, we find that the strongest predictor of whether a child moves home between age five and age nine is their mother's relationship status. Compared to those mothers who have a partner[22] in both wave 3 and wave 5, we see that changing from having a partner to being a lone parent or transitioning from being a lone parent to having a partner have equally strong positive effects on the odds of moving home. In addition, children of mothers who remain lone parents over time are also more likely to experience a move, compared to children who were in two-parent households between waves 3 and 5[23]. However, at the same time, changes in the number of children under 18 in the household does not predict families moving home in a child's middle years. Certain ethnic groups, including those with an Other White background and especially Asians, are more likely to move compared to the White Irish group, while children where both parents are not Irish citizens are also more likely to experience a move, compared to families where both parents are citizens. Lastly, children whose mother has a limiting long-term illness are somewhat more likely to move home in their middle years.

Model 2 introduces socio-economic predictors to the model. Changes in employment status, either among the mother or father, do not appear to trigger moving house. What is important for residential mobility among children is where the mother remains not employed over time, which is associated with a higher odds of moving house. Children in households that remain in the top third, fourth or fifth quintile of household income between waves 3 and 5 are no more likely to experience a move than children in households that remain in the lower first and second quintile over time. Furthermore, those experiencing a transition from the upper household income quintiles (third to fifth) to the lower quintiles (first to second) are also no more likely to move. However, households transiting from the lower quintiles to the upper quintiles are more likely to move house, compared to those remaining in the lower quintiles over time. Lastly, we find that children whose mother has a degree or higher are more likely to experience moving house, compared to those whose mother has a Junior Certificate or less.

In Model 3, we look at whether children living in more urban compared to more rural areas are more likely to experience moving. Compared to children in rural

22 This need not necessarily be the same partner at both waves.

23 Potentially, the partner in these households could have changed between waves 3 and 5 even though a child is in a two-parent household in both waves.

areas, children living in more urban environments are more likely to move house over their middle years.

TABLE 3.8 PREDICTORS OF RESIDENTIAL MOBILITY BETWEEN AGES 5 AND 9

		MODEL 1	MODEL 2	MODEL 3
Parent and HH characteristics (measured at wave 3, or *change* between wave 3 and wave 5)		Moved wave 3 to wave 5	Moved wave 3 to wave 5	Moved wave 3 to wave 5
Ethnicity	Baseline: White Irish			
	Other White	1.469*	1.415*	1.337+
	Black	1.378	1.427	1.283
	Asian	2.280**	2.214**	2.019**
	Other	1.750	1.708	1.546
Change in partnership status	Baseline: Partner -> Partner			
	Partner -> Lone	5.074***	5.121***	4.963***
	Lone -> Partner	5.691***	6.139***	5.527***
	Lone -> Lone	2.191***	2.317***	2.107***
Irish Citizenship of CGs	Baseline: Both CG citizens			
	PCG citizen/SCG not	1.415	1.387	1.344
	PCG not/SCG citizen	0.921	0.895	0.909
	Both CG not citizens	1.988**	2.036**	1.913**
	No SCG			
	SCG present – no completion	1.253	1.302	1.277
PCG limiting long-term illness	Baseline: No			
	Yes	1.271+	1.250+	1.209
SCG limiting long-term illness	Baseline: No			
	Yes	0.935	0.951	0.940
	No SCG			
	SCG present – no completion			
Change in N of children in HH	Baseline: only child in HH -> only child in HH			
	only child in HH -> 2+ children	0.898	0.871	0.852
	2+ -> only child in HH	0.739	0.775	0.780
	2+ -> 2+ children	0.804	0.786	0.804
Qualification of PCG	Baseline: Junior Cert or less			
	Leaving Cert		0.890	0.923
	Non-degree		1.121	1.167
	Degree or more		1.515*	1.547*
Change in PCG employment status	Emp -> Emp			
	Emp -> Not Emp		1.122	1.096
	Not Emp -> Emp		1.090	1.083
	Not Emp -> Not Emp		1.375**	1.340*
Change in SCG employment status	Emp -> Emp			
	Emp -> Not Emp		1.064	1.086
	Not Emp -> Emp		0.976	1.009
	Not Emp -> Not Emp		1.023	1.078
Change in HH income quintiles	Baseline: stayed in lowest/2nd			
	Lowest/2nd -> 3rd/4th/5th		1.475*	1.462*
	3rd/4th/5th -> Lowest/2nd		1.199	1.205
	Stayed in 3rd/4th/5th		1.075	1.056

	Missing		1.054	1.051
Urban/rural	Baseline: Rural			
	Small town			1.686***
	Other urban			1.407**
	Large urban			1.472***
Constant		0.139***	0.097***	0.076***
Pseudo R-squared		0.065	0.071	0.077
Observations		7303	7303	7303

Source: Growing Up in Ireland 2008 Infant Cohort
Notes: Sample restricted to households who responded in waves 1, 2, 3 and 5

3.4 CONCLUSIONS

This chapter examined the experiences of residential mobility among children from infancy to middle childhood. Moving house remains relatively uncommon among children between birth and age nine, and most children experience a move in either early childhood or middle childhood; only a small proportion experience moving house in both periods. However, the analyses demonstrate important differences in which groups of people are more likely to experience residential mobility.

Family structure is a key driver of residential mobility. Lone-parent households are much more likely to experience moving house than two-parent households during a child's early years and to middle years. Family dissolution (transitioning from a two-parent to a one-parent household) and family formation (transitioning from a one- to a two-parent household) are also the strongest drivers of mobility during a child's middle years. A significant part of the residential instability experienced by lone parents is because they tend to be in rented accommodation or living with their parents. However, even accounting for this and their socio-economic characteristics as well, people's partnership status remains critical for their likelihood of experiencing moving home.

On the whole, groups with lower socio-economic status or who are experiencing greater disadvantage are also more likely to experience residential mobility. Households where one or both parents have a limiting long-term illness or are economically inactive, or where the father is unemployed, are more likely to move home during a child's early years. This is particularly the case for parents who remain out of employment over time. Households with lower household incomes are also more likely to move house. part of the reason more disadvantaged groups tend to be more likely to move is again accounted for by their higher concentration in rental accommodation or from living with their parents. However, at the same time, some markers of higher socio-economic status are also linked to greater residential mobility. Mothers with higher qualifications are actually more likely to move house than those with a Junior Certificate or less. Furthermore, transitions from a lower to higher household income can also lead to moving house (at least during a child's middle years). Moving house is therefore likely something families

can be forced to do due to limited opportunities and resources but also choose to do to improve their situations due to the availability of resources.

We also find that families where one, or especially both parents, are not Irish citizens are more likely to experience residential mobility. Residents of more urban areas (from small towns to cities) are also more likely to move house than those in rural areas.

Residential mobility can act as an important driver of change in housing adequacy. Generally speaking, when households move home, they tend to move to homes with a similar level of housing adequacy. For example, moving from rented accommodation to rented accommodation, or to and from a home they are able to heat, or to and from a home that is suitable to their needs. However, when a change in adequacy does occur from a move, moves to more adequate housing are more common than moves to less adequate housing. In particular, moves from rented to owned properties, from unsuitable to suitable homes, from being unable to warm their home to being able to, and moves from higher to lower disorder neighbourhoods, are more common than their alternative transitions from more to less adequate housing.

These positive housing trajectories were particularly evident during a child's middle years. However, during their early years, transitions were somewhat more mixed. While positive transitions to more suitable accommodation and lower neighbourhood disorder were more common, negative transitions from owned to rented accommodation, and from homes families were able to heat to homes where they were not, were more common. This likely stemmed from the significant financial impact of the Great Recession, where some households saw a significant fall in their incomes, likely triggering more experiences of heating deprivation and the inability to continue paying mortgages. Indeed, as Figure 2.4 shows, the proportion of all people who experienced difficulties heating their home over their child's early years increased from 8.1 per cent to 13.5 per cent.

CHAPTER 4

Housing and child outcomes

4.1 HOW DOES HOUSING INFLUENCE CHILD OUTCOMES?

The discussion of previous research in Chapter 1 highlighted the variety of ways in which housing influences children's outcomes and the need for greater clarity on the different aspects of housing conditions that may be relevant. Here we consider a range of dimensions, namely residential mobility, unsuitable housing conditions (including size, problem conditions damp/dark, etc.), ability to keep the home warm, housing tenure, and neighbourhood disorder. The review of the literature also underlined that the importance of these aspects varies depending on the outcome considered. For example, neighbourhood characteristics have been found to be particularly influential in the case of socio-emotional and behavioural development, while physical conditions such as warmth and dampness have been implicated in health outcomes. The following analysis considers the role of housing in socio-emotional/behavioural, cognitive and health outcomes at age nine. Chapter 2 highlighted that there are significant differences in exposure to inadequate housing across children in Ireland. Children in lone-parent families, living with a disabled parent, or parents that were not employed and those in low-income families were more likely to experience poorer housing conditions. Moreover, some groups were more likely to have experienced residential moves, including those whose partnership status changed, lone parents, non-Irish citizens and those living in urban areas (Chapter 3). These patterns may therefore provide insights into some of the processes behind previously observed social inequalities in child outcomes.

While some previous research on child outcomes in Ireland has included one or two housing indicators, such as housing tenure (e.g. Layte, 2022) or neighbourhood characteristics (e.g. Smyth and Darmody, 2021; Russell et al., 2016), to date there has been no systematic assessment of a wider range of housing contexts.

4.2 ANALYTICAL STRATEGY

Growing Up in Ireland (GUI) provides the opportunity to separate the analysis of housing effects into a range of dimensions, namely residential mobility, unsuitable conditions (too small, damp/dark, etc.), ability to keep the home warm, housing tenure and neighbourhood disorder. This allows us, for example, to test whether the effect of home ownership persists when we control for other housing conditions that co-vary with tenure such as mobility. We use the number of waves

that children experienced housing conditions as an indicator of length of exposure, as conditions may change over the period.[24]

Previous chapters have shown how experiences of inadequate housing, such as unsuitable homes or inability to keep households warm, are correlated with factors like household income and markers of disadvantage (e.g. lone parenthood). These features of households and parents may also be correlated with children's social, developmental and health outcomes. Our primary aim here therefore is to examine whether there is an association between children's outcomes and their experiences of housing inadequacy *over and above* their family and household resources. To this end, the models will control for the full range of household and parent characteristics previously found to be relevant for predicting experiences of housing inadequacy to better isolate whether housing inadequacy does shape children's health and developmental outcomes.

We adopt a lagged dependent variable modelling approach, in which our models include an earlier measure of the dependent variable. For most outcomes, this is the value of the outcome at wave 2, given our cumulative housing inadequacy measures capture inadequacy starting from wave 2. For example, in the model of SDQ at age nine we include the SDQ score at age three as a control (we also tested models controlling for lagged outcome measures at age five, which returned substantively similar results). The exception to this is a child's cognitive outcomes (reading score at wave 5) where we use lagged child's naming vocabulary score, at wave 3, given data availability.

Including a lagged outcome measure in a model can help strengthen our confidence that it is indeed housing adequacy shaping children's outcomes and not some other factor in their lives. For example, we may find that children who experienced moving house (between ages five and nine) have worse mental health than those who did not. This may be because moving house harms mental health for children. Alternatively, it could be that young people who moved house between ages five and nine already had poorer mental health at age five *before* the move took place. For example, families, including their children, with poorer mental health may end up having to move house more frequently. In this instance, including a lagged measure of a child's mental health before they moved house allows us to go some way towards controlling for such bias.[25] We do not include accidents at an earlier

[24] As a robustness check, we tested the effects of housing conditions using only the most recent observation; the direction of the results was similar, but the strength of the association was stronger when the duration of exposure is considered.

[25] There is a risk that including the lagged outcome (e.g. at wave 2) in the models will lead to a more conservative test of the impact of cumulative housing inadequacy (inadequacy at waves 2, 3 and 5), given part of the effect of cumulative inadequacy (at waves 2, 3 and 5) on our outcome at wave 5 may be accounted for through its effect on the lagged outcome at wave 2. However, the cumulative measures also contain degrees of exposure at wave 3 (as well as waves

time point for the accident model as we do not consider past accidents can influence current accidents independently of common risk factors. However, it is important to keep in mind that such lagged dependent variable approaches do not completely account for the effects of unobserved time-invariant heterogeneity in our models. For example, there may be some other characteristics of children, such as early childhood experiences or those of their parents, that are correlated with both their outcomes at age nine and their experiences of housing inadequacy over their early and middle years.[26]

We use a range of different models depending on the outcome in question. In the case of the SDQ measures and reading score, we use Ordinary Least Squares regression models as the outcome measures are continuous. Episodes of respiratory problems and number of accidents are both count variables where there is a large number of zeros; therefore, we use negative binomial regression models. Finally, in the case of parent-rated general heath where the response consists of four categories, we use an ordinal logistic regression approach, where the coefficients are log odds. We also test whether any impact of moving home differs depending on a household's income, by including interaction terms between whether a child moved house (between waves 3 and 5) and a household's income quintile (at wave 5). This can help explore whether moving among those with higher incomes (who may be moving to improve their circumstances) may have different effects on children's outcomes than those moving house with lower incomes (who may be having to move due to negative changes in their circumstances, or who live in more unstable housing situations). Where any effects of moving home differs between quintiles of household income, we report the results in the table. Where no results are reported for the interaction effects, the interaction tests were not significant and thus excluded from the reported model.

4.3 RESULTS

Controlling for a range of relevant characteristics, and SDQ score at age five, we find that length of exposure to housing that is considered too small for the family,

2 and 5). Furthermore, the lagged outcome approach strengthens our confidence that any identified cumulative housing inadequacy effects are more likely to be causal. Testing with and without the inclusion of the lagged outcome does not change the substantive findings of the model. In addition, substituting the cumulative inadequacy measures for contemporaneous inadequacy measures (measured at wave 5) returns largely similar results. However, we lose important variance in experiences of housing inadequacy experienced over a child's early and middle years which plays an important role in their outcomes. Comparing the results from cumulative and contemporaneous measures we observe the former are a better predictor of child outcomes and explain more variance in child outcomes.

26 An alternative approach to strengthening our confidence that any impacts of housing inadequacy are likely causal is to undertake two- or three-wave fixed effects modelling. However, the relatively high degree of housing inadequacy stability over time means such tests produce very conservative estimates. Furthermore, fixed effects modelling cannot identify the effects of non-time varying factors (e.g. mother's education, citizenship, etc.). In addition, they do not easily capture the important effects of cumulative exposure to housing adequacy that appear important above and beyond a child's current experiences of housing inadequacy. Re-running the models in a fixed-effects framework reduces the statistical significance of the relationships as expected although effect size and direction is broadly similar across approaches.

problems keeping the home warm, and length of exposure to a disorderly neighbourhood all significantly increase total SDQ difficulties scores at age nine (Table 4.1). Moving house between the age of five and nine years was associated with a significant increase in total difficulties score (+ 1.5 points). However, this was only the case for movers in low-income families; in contrast for the highest income group, moving reduces socio-emotional difficulties (see Figure 4.1).[27] Once physical housing conditions, mobility and neighbourhood context are controlled, length of time spent in private rental housing or living in a multi-family household has no significant effect but the number of waves in social housing is associated with an additional increase in SDQ. Urban/ rural location has no independent effect in the model.

Prosocial behaviour is negatively associated with the length of time the child has spent in a disorderly neighbourhood; however, neither physical housing conditions nor residential mobility have a significant effect.[28] Housing tenure remains significant: prosocial scores decrease with the number of waves spent in social housing, though the effect size is small. Duration in private rented and multi-family households is also associated with reduced prosocial scores but the effects are only significant at the 10 per cent level.

Turning to cognitive outcomes, we find that of the housing measures only tenure has a significant effect. The number of waves living in social housing and the number of waves living with grandparents were both associated with reduced reading scores. In contrast to some earlier studies which found crowding negatively impacted on cognitive development, we find no effect for the house being perceived as too small. However, living in a multi-generational household may also be an indicator of a lack of space and privacy. Neighbourhood disorder and residential mobility have no significant effect on reading scores.[29]

Turning to health outcomes, we find that exposure to problems heating the home (number of waves the family was unable to keep the home adequately warm) was associated with all three outcomes: respiratory problems, accidents and general health as rated by the mother. Cumulative exposure to poor physical housing conditions, which included dampness and leaks, was also associated with greater respiratory problems at age nine, which is consistent with previous research outlined in Chapter 1. As expected, based on previous findings, living in a neighbourhood with higher levels of disorder is associated with a greater number of accidents; however, the size of the effect is small. Interestingly, children living in

---

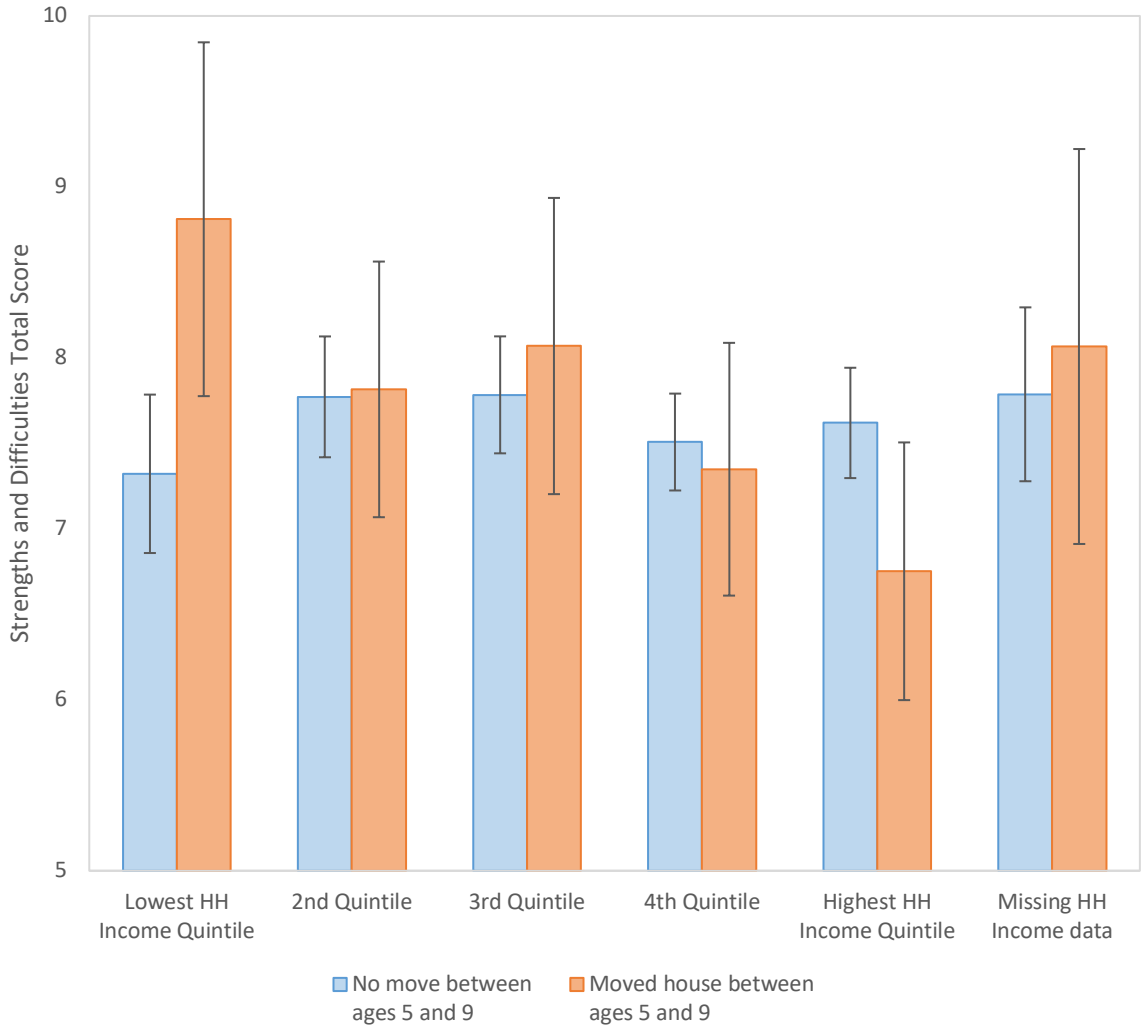
27 Subtracting -2.4 from the base coefficient 1.5 leaves a net decrease of -.9 for the top quintile. The significance of this effect was also separately tested.

28 The interaction between mobility and income is not significant.

29 We also ran a model controlling for the class a child is in, but the results remain substantively identical.

a large urban area are more likely to have experienced an accident compared to those living in a rural area, which may be picking up additional neighbourhood characteristics not captured in the disorder index. It is interesting that housing tenure has no independent effect on child health outcomes when other characteristics of the home and neighbourhood are taken into account (as well as other socio-economic characteristics).

FIGURE 4.1 RELATIONSHIP BETWEEN RESIDENTIAL MOBILITY AND STRENGTHS AND DIFFICULTIES TOTAL SCORE ACROSS INCOME GROUPS



Source: Growing Up in Ireland 2008 Infant Cohort
Notes: Sample restricted to households who responded in waves 1, 2, 3 and 5

4.4 DISCUSSION

The analysis shows that housing and neighbourhood context matter for children's developmental and health outcomes in Ireland. The strongest influences emerge in the case of children's socio-emotional outcomes, though significant associations are also found for cognitive and health outcomes. These are important outcomes

not only for children's current wellbeing but also their longer-term trajectories. The most consistent influence is found for lack of warmth in the home, which is not only associated with all three health measures but also with children's SDQ score.

Housing tenure has a significant relationship with children's socio-emotional outcomes and cognitive development. However, it is important to note that the association between tenure, for example social housing status, and child outcomes may not be solely driven by being in social housing. For example, the negative association between social housing and reading scores may reflect a greater concentration of disadvantage in the neighbourhoods that the children live in and the schools they attend. Unfortunately, area-based measures of deprivation or affluence, which are widely used in the international research, are not currently available in the GUI dataset. Alternatively, the association could be driven by omitted variables such as within-household family dynamics, which explain why children in social housing tend to have poorer socio-emotional and cognitive outcomes. Accordingly, housing tenure itself might not be problematic for children's outcomes but the issues associated with different types of tenure.

We find the effect of residential mobility is context specific; only in the case of children living in low-income households is there evidence of a harmful effect. For low-income households, moving may indicate underlying housing insecurity while for many families with young children residential moves may be associated with improved conditions. However, there are limitations to the measure of mobility in the study as it does not fully capture families' housing history, while attrition is likely to be higher for the most mobile; therefore, the results do not rule out the possibility that frequent house moves are more disruptive to children's development.

These effects of housing identified here may operate directly, for example where damp or cold conditions could exacerbate respiratory problems, or indirectly through family stress processes. Further disentangling possible mediating and moderating factors would be a fruitful avenue for future research. These results also point to possible directions for policy intervention, an issue which is considered in the concluding chapter.

TABLE 4.1 IMPACTS OF HOUSING INADEQUACY MEASURES ON CHILD OUTCOMES AT AGE 9

		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Outcomes measured at wave 5:		**SDQ Total**	**SDQ Prosocial**	**Reading score**	**Episodes of wheezing**	**Accidents since interview**	**Better reported child health**
Model type		OLS	OLS	OLS	NBREG	NBREG	OLOGIT (log odds)
CG and HH characteristics measured at wave 5 (unless stated)							
Cumulative Housing Inadequacy Scores	N waves poor conditions, e.g. damp (waves 2, 3, 5)	-0.163	0.149	0.404	0.344*	0.032	-0.099
	N waves accommodation 'too small' (waves 2, 3, 5)	0.330*	-0.009	0.702	-0.071	-0.075	0.059
	N waves accommodation 'not child-friendly' (waves 2, 3, 5)	-0.188	-0.253*	1.905+	-0.083	-0.115	0.014
	N of waves in social housing (waves 2, 3, 5)	0.253*	-0.064+	-1.438***	-0.016	0.036	0.072
	N of waves in private renting (waves 2, 3, 5)	-0.030	-0.081*	-0.043	-0.030	-0.044	0.017
	N of waves in grandparents' home (waves 2, 3, 5)	-0.124	-0.175+	-1.921*	0.139	-0.099	0.055
	N waves in household without warmth (waves 2, 3, 5)	0.442**	-0.067	-0.571	0.197**	0.111*	-0.171**
	Cumulative area disadvantage (waves 1, 3, 5)	0.219***	-0.060***	-0.004	-0.035	0.041*	-0.034
Moved – Ref: did not move	Moved house between wave 3 and wave 5	1.489*	0.010	-0.438	-0.116	0.070	-0.079
Income Quintile	2nd	0.450	-0.064	2.702**	0.049	0.133	0.071
Ref: lowest	3rd	0.462	-0.071	3.227***	-0.133	0.018	0.14
	4th	0.186	-0.066	3.640***	-0.019	0.074	0.183
	Highest	0.298	-0.103	5.903***	0.065	0.303**	0.326+
	Missing	0.465	-0.063	3.491***	-0.193	0.145	0.312+
Moved*income	Moved house # 2nd Inc quintile	-1.445*					
	Moved house # 3rd Inc quintile	-1.204					
	Moved house # 4th Inc quintile	-1.648*					
	Moved house # Highest Inc quintile	-2.357***					
	Moved house # missing income	-1.210					
Urban/Rural	Small town	0.245	-0.080	0.037	0.234	0.059	-0.115
Ref: rural	Other urban	0.182	-0.062	-0.298	0.056	-0.010	0.014
	Large urban	0.065	0.090	0.435	-0.045	0.162*	-0.036

Child's gender Ref: male	Female	-0.726***	0.363***	0.664	-0.135	-0.125*	-0.031
Ethnicity	Other White	-0.135	-0.250*	2.155*	-0.148	-0.381**	0.124
Ref: White Irish	Black	-1.992***	0.150	2.464	-0.089	-0.448	0.384
	Asian	-0.540	0.173	3.129*	0.440+	-0.080	-0.016
	Other	0.445	-0.243	1.489	-0.046	-1.284**	0.252
HH composition	Lone parent, one child under 18	0.498	0.202	1.599	-0.206	0.339*	-0.344
Ref: Two parent one child <18	Lone parent, two+ children under 18	-0.400	0.233+	-2.859*	-0.056	0.045	-0.383+
	Two parent two+ children under 18	-0.569+	0.078	-0.607	-0.122	-0.071	-0.076
Citizenship	PCG citizen/SCG not	0.542	0.022	0.745	0.122	-0.277	0.18
Ref: both CG	PCG not/SCG citizen	-0.022	-0.017	-0.482	0.440	0.158	-0.221
citizens	Both CG not citizens	0.689	0.102	-1.496	-0.230	0.265	-0.075
	SCG present – no completion	0.385*	0.019	-1.762**	0.160	-0.020	-0.198+
PCG disabled	Yes	1.106***	-0.073	0.176	0.367***	0.345***	-0.505***
SCG disabled	Yes	0.346	0.098	0.619	-0.274*	0.138	-0.261*
PCG education	Leaving Cert	-0.527	-0.154	3.335**	0.084	0.086	0.136
Ref: < Leaving Cert	Non-degree	-0.446	-0.048	4.434***	-0.080	0.155	-0.021
	Degree or more	-0.558+	-0.232*	7.945***	-0.044	0.138	0.029
PCG Ref: employ	Unemployed	-0.788	-0.052	-2.156	0.191	0.070	-0.32
	Inactive	0.076	-0.040	0.117	0.008	0.023	-0.243**
SCG Ref: employ	Unemployed	0.772	0.165	-0.492	-0.840**	0.072	-0.07
	Inactive	-0.388	-0.126	-0.604	0.242	-0.327*	-0.087
Lagged	SDQ Total difficulties score – Wave 2	0.621***					
Dependent	SDQ Prosocial subscale – Wave 2		0.248***				
Variables	Naming vocabulary – Wave 3			0.520***			
	Episodes of wheezing – Wave 2				0.335***		
	Child's health – Wave 2						1.158***
Constant		2.115***	7.304***	23.653***	-1.073***	-1.590***	-
Adjusted R-squared		0.405	0.125	0.227			
Observations		7296	7294	7020	7287	7296	7296

Source: *Growing Up in Ireland 2008 Cohort wave 1, wave 2, wave 3 and wave 5.*

Note: *Sample restricted to households in waves 1, 2, 3 and 5; CG = caregiver; PCG = primary caregiver; SCG = secondary caregiver; HH = household. N of waves for the cumulative housing indicators refer to wave 2, wave 3 and wave 5, except for area disadvantage which is measured at wave 1, wave 3 and wave 5. In models 2 to 6 the interaction between mobility and income quintile was insignificant so it was not included. OLS = Ordinary Least Squares; NBREG = Negative Binomial Regression; OLOGIT = Ordered Logistic Regression; SDQ = Strengths and Difficulties Questionnaire Score.*

CHAPTER 5

Conclusions and implications for policy

5.1 INTRODUCTION

Housing, particularly housing affordability, has attracted a good deal of policy debate in Ireland recently (see, for example, Hearne, 2020; Norris and Byrne, 2021; Russell et al., 2021). In this context, there has been an increasing focus on the issue of child homelessness (Ombudsman for Children, 2019; Long et al., 2019). However, to date there has been a lack of information on the nature and quality of accommodation in which children are raised and the consequences for their development. International research has shown that poor-quality housing and high levels of residential mobility are detrimental to child outcomes (see, for example, Coulton et al., 2016; Leventhal and Newman, 2010; Fowler et al., 2014). However, it is not clear that such findings, particularly from the US context, apply equally in Ireland, where levels of home ownership are relatively high and levels of social and ethnic segregation at neighbourhood level much lower. This report uses Growing Up in Ireland (GUI) Cohort '08 data to provide new insights into the quality of accommodation experienced from infancy to middle childhood across different groups of children. It also analyses the consequences of poor-quality housing and residential mobility for their health, socio-emotional wellbeing and cognitive development. The remainder of this chapter outlines the main findings of the study and the implications for policy development.

5.2 MAIN FINDINGS

This study adopts a multidimensional approach to assessing housing quality, including housing tenure, exposure to poor housing conditions (such as damp), living in accommodation that is too small for family needs, living in settings that are not child-friendly, having to go without adequate heating for financial reasons, residential mobility and living in a neighbourhood characterised by disorder (such as graffiti and public drinking or drug-taking).

In keeping with national patterns, the majority – around three-quarters – of children are living in owner-occupied accommodation (either with or without a mortgage). Between infancy and middle childhood (nine years of age), reflecting lifecycle factors, there is some reduction in the proportion living in the private rented sector and some increase in those living in social housing, to the point where

nine-year-olds are fairly equally divided between the two sectors.[30] A very small proportion (1–2%) are living with their parent(s) in their grandparents' home.

In terms of housing quality, around a tenth of children at both nine months and nine years are living in accommodation seen as unsuitable for the needs of the family (in terms of poor conditions such as damp, small size or not being child-friendly), with the main reason cited being size. In addition, 6–8 per cent of families report going without heating for financial reasons. Just under a fifth of mothers report that neighbourhood disorder is very or fairly common where they live. For most of the children concerned, poor housing conditions are a somewhat transient phenomenon, though about a third of those in accommodation that is too small or not adequately heated report this at two or more timepoints. In addition, exposure to neighbourhood disorder tends to be more persistent over time, reflecting relatively low levels of residential mobility.

Not surprisingly, given the resources needed to purchase a home and the criteria used for the allocation of social housing, socio-economic factors are strongly associated with both housing type and quality. More disadvantaged families, in terms of education, income and parental unemployment, are overrepresented in social housing. The profile of those in the private rented sector is not as disadvantaged as that of the social housing group but they tend to have lower levels of education and income than those in owner-occupied housing. Low income, parental illness/disability and parental unemployment are all risk factors for unsuitable housing. The poorer-quality housing among the unemployed and those with disabilities largely reflects their housing tenure status. However, income continues to have a strong effect, meaning that even within housing sectors, low-income families experience poorer housing conditions, are more likely to go without heat for financial reasons and are more likely to live in disorderly neighbourhoods. Those in private rented housing are more likely to go without heating, even taking account of income; this may reflect poorer-quality accommodation which is difficult to heat adequately without significant expense or reflect curtailed spending on heating to deal with housing costs.

Lone-parent families emerge as having a distinctive profile in terms of housing (see also Russell et al., 2021). They are more likely than two-parent families to be in private rented or social housing or to live with their own parents. Lone-parent families are much more likely than two-parent families to be living in unsuitable accommodation. Much of this effect is due to their concentration in rented (private or social) housing, though even within housing sectors, larger lone-parent families experience poorer conditions. Lone-parent families are also more likely to go

[30] In practice, Housing Assistance Payment (HAP) blurs the boundaries between private rented and social housing. Unfortunately, recipients of HAP cannot be consistently identified using GUI data.

without adequate heating for financial reasons, a pattern that holds even taking account of their income levels. They are more likely to live in disorderly neighbourhoods, again reflecting their overrepresentation in private rented or social housing.

Differences by migrant status are also evident, with ethnic minority and non-Irish citizens more likely to be found in the private rented sector and, to some extent, social housing. Children from Black ethnic backgrounds are more likely to experience unsuitable housing, largely because they are underrepresented in owner-occupied accommodation.

The study provides new evidence about residential mobility among young children – almost 30 per cent of children had experienced at least one move of house by the time they were nine years old. Around 7 per cent had experienced at least two such moves. In previous research, particularly in the United States, residential mobility has been taken as reflecting housing insecurity (Gambaro et al., 2022). The pattern in Ireland appears more nuanced. Lone-parent and low-income families are more likely to move house as are families with parental unemployment or illness, and where parents are not Irish citizens. These patterns are largely, though not entirely, due to being overrepresented in rented housing. However, residential mobility is also more common in graduate families and among families that experience an increase in income. A change in partnership status (either from two- to lone-parent or from lone- to two-parent families) is strongly related to moving house. Moving house most commonly involves a move from suitable accommodation to another suitable setting, while moving from unsuitable to suitable accommodation is more common than moving into unsuitable housing.

The findings clearly indicate that some groups of children – particularly those from low-income or lone-parent households – experience poorer-quality housing and are more likely to move house. While investigating this issue is beyond the scope of the current study, residential mobility will potentially disrupt children's peer networks and education. What are the consequences of these patterns for child outcomes? Table 5.1 summarises the main relationships between housing characteristics and child outcomes (based on the analyses presented in Chapter 4).

In keeping with previous research (see Chapter 1), socio-emotional wellbeing is responsive to neighbourhood disorder, with more socio-emotional difficulties and less prosocial behaviour among nine-year-olds living in disorderly neighbourhoods. Living in social housing is also linked to poorer socio-emotional wellbeing, even taking account of greater disorder in such areas. Lacking adequate heating is significantly related to greater socio-emotional difficulties; this may reflect the effect of economic deprivation not otherwise captured by the models or

alternatively that children in colder homes may spend more time elsewhere in the neighbourhood, thus reinforcing the effects of neighbourhood disadvantage.

In contrast to socio-emotional wellbeing, cognitive development, as captured by reading test scores at age nine, is not systematically affected by housing quality. The exception is lower scores among those who have spent more time in social housing and those spending more time living in their grandparents' house. The latter pattern may reflect overcrowded conditions, with a lack of space to do homework as well as the likely effects of greater parental stress in such settings. The effect of social housing may reflect other aspects of area-level disadvantage (than disorder) as well as the greater likelihood of children in social housing to attend schools with a concentration of socio-economic disadvantage.[31]

Different dimensions of housing are associated with different aspects of health among children. In keeping with previous research (Leventhal and Newman, 2010), episodes of wheezing are more common for children living in poor housing conditions (including damp) as well as in homes not adequately heated. Inadequate heating is also associated with poorer child health, as rated by the mother. Children are more likely to have had an accident or injury that necessitated a doctor or hospital visit when they live in disorderly neighbourhoods and where houses are not heated adequately. As with socio-emotional wellbeing, this may reflect other aspects of deprivation or greater exposure to neighbourhood conditions (and therefore greater risk of accidents).

In contrast to previous research, moving house does not emerge as a risk factor in child development, largely because it is driven by both negative (insecurity) and positive factors. However, residential mobility is linked to poorer socio-emotional wellbeing for children from the lowest-income families, indicating the role of housing insecurity in disrupting child wellbeing.

5.3 LIMITATIONS OF THE STUDY

A limitation of the study is that we do not have full information on the scale of residential mobility so are unable to differentiate, for example, between those who moved once or more than once between survey waves. Greater attrition would also be expected among the most mobile groups, so they may be underrepresented in our findings. Increasingly, social supports for housing needs are provided via the Housing Assistance Payment (HAP) to those living in private rented accommodation. In 2019, 42 per cent of HAP recipients were lone-parent families

[31] Thirty-seven per cent of those attending Urban Band 1 DEIS schools (the most disadvantaged schools) are in social housing compared with 21 per cent in Urban Band 2 and 9 per cent in non-DEIS/rural DEIS schools.

while 26 per cent were two-parent families.[32] Unfortunately, GUI data do not consistently capture receipt of housing supports so respondents in the private rented sector will be made up of both those in receipt of support and those paying the full cost of their accommodation. Given rent thresholds for HAP, this may mean poorer-quality accommodation among that segment of the private rented group but this cannot be investigated here.

A further limitation relates to the lack of area-based indicators in GUI Cohort '08 data. Much of the international research uses objective measure of area advantage and disadvantage (see Chapter 1). These indicators are available at the small area level in Ireland and have been matched onto other datasets, such as The Irish Longitudinal Study on Ageing (TILDA) and GUI Cohort '98 (at least for the first wave), but have not been matched onto GUI Cohort '08 data. Such matching, especially if done for each wave of data, would greatly enhance possibilities for investigating neighbourhood effects on children, young people and their families. These data would also facilitate multilevel analysis, allowing for more precise estimates of neighbourhood influences on child outcomes.

It should be noted that GUI data do not necessarily capture children and families experiencing the worst form of housing exclusion – homelessness – or at least not in the numbers to permit identifying them separately. Similarly, numbers are too small to identify children from the Traveller or Roma communities who more often experience extreme housing deprivation and overcrowding (see Russell et al., 2021). The cohort was sampled when the cohort was nine months old so does not include more recently arrived immigrants or asylum seekers, likely to be living in temporary accommodation. Given that the GUI sample does not necessarily cover those in the worst-quality or most unstable forms of accommodation, the findings presented here can therefore be taken as a conservative estimate of the association between poor housing conditions and child outcomes.

[32] https://www.cso.ie/en/releasesandpublications/ep/p-hhwl/socialhousinginireland2019-analysisofhousingassistancepaymenthapscheme/duringafterhap/

TABLE 5.1 SUMMARY OF RELATIONSHIPS BETWEEN HOUSING FACTORS AND CHILD OUTCOMES

	Moving house	Exposure to poor housing conditions	Exposure to too small accommodation	Exposure to non-child-friendly accommodation	Exposure to housing without adequate heating	Housing tenure	Neighbourhood disorder
Socio-emotional wellbeing							
SDQ total difficulties	+ (low-income group)	NS	++	NS	+++	++ social	+++
SDQ prosocial	NS	NS	NS	(-)	NS	- social, private rented (-) grandparents' home	---
Cognitive development							
Reading test score	NS	NS	NS	NS	NS	- social, grandparents' home	NS
Child health							
Parent-rated general health	NS	NS	NS	NS	--	NS	NS
Episodes of wheezing	NS	+	NS	NS	++	NS	NS
Accidents	NS	NS	NS	NS	+	NS	+

Note: +++/--- p<.001; ++/-- p<.01; +/- p<.10; NS non-significant.

5.4 IMPLICATIONS FOR POLICY

Commentators have increasingly advocated a broad conceptualisation of family policy that encompasses housing policy, given the way in which housing conditions can influence physical and mental wellbeing among family members and location can shape their access to networks and services (Berger and Carlson, 2020). Children are often overlooked in current debates about housing but findings from this study show the ways in which their housing situation can reinforce inequality in children's experiences and outcomes. Much of the discourse on housing in Ireland has focused on housing supply and affordability rather than quality. However, the findings in this study point to the intertwining of affordability and quality as more disadvantaged families have poorer-quality housing, the most frequently cited feature of which is lack of space.

More general measures to address housing quality and affordability will, of course, have positive knock-on effects for children. Existing housing support payments are found to enhance affordability for recipients, but Doolan et al. (2022) suggest that there are issues in relation to the targeting of supports, given existing variation in receipt of payments among low-income renters. The strong link found between low income and poorer housing circumstances highlights the importance of broader income and welfare supports as well as specific housing supports in alleviating disadvantage. Even taking account of income, children from lone-parent families are found to experience poor-quality and more insecure housing, largely, but not entirely, because of their lack of access to owner-occupied housing. This suggests the need to look more specifically at housing supports for this group, especially in a context where differential rent schemes across local authorities mean disparities in the level of subsidies received (Doolan et al., 2022). The growth in the relative size of the private rental sector over time raises issues around the regulation of standards, with levels of inspection being low and a lack of enforcement of compliance measures where needed (Russell et al., 2021). This suggests the need for greater emphasis on inspection and follow-up of standards in the private rented sector, though much of the quality issues highlighted in this study centre on the accommodation being too small for family needs, which relates to more general housing affordability rather than standards per se.

The findings indicate that in 2017/18, prior to the current energy crisis, 7 per cent of nine-year-old children were living in homes without adequate heating for financial reasons, a factor linked to poor parent and child health and wellbeing. The current rapid rise in fuel and other prices has had a greater proportionate impact on households in the lowest quintile of the income distribution (Barrett et al., 2022). One-off measures in Budget 2023 are estimated to significantly cushion incomes, especially for those in lower-income households, raising challenges in

helping low-income families to avoid fuel poverty when these measures lapse (Doolan, Doorley, Regan and Roantree, 2022).

Almost 20 years ago, Watson and Williams (2003) documented poorer-quality accommodation – in terms of condition, space and disorder in the local area – among those living in social housing. The study findings show the persistence of greater levels of inadequate accommodation and disorderly neighbourhoods for those in social housing, factors that impact negatively on parent and child wellbeing. This suggests that investments to improve the physical and social infrastructure in communities by local and national government will have dividends for the youngest members of society. The negative consequences found of the concentration of disadvantage at local area level suggest the need for planning of new social housing to seek to minimise potential socio-economic segregation.

Children living in disadvantaged urban areas are much more likely to attend DEIS schools, a pattern that offers the potential to provide school-based supports to enhance children's educational and socio-emotional development. The DEIS programme has been evaluated positively by stakeholders in its enhancement of literacy skills and broader impact on child outcomes (see, for example, Smyth et al., 2022) but the scale of disadvantage in some urban DEIS schools suggests the need for greater resource allocation to reflect the complexity of need (Smyth et al., 2015). Given the greater socio-emotional difficulties found in disadvantaged areas, the School Completion Programme provides an important channel for promoting wellbeing among children in these settings. At the same time, the majority of children from more disadvantaged backgrounds do not attend DEIS schools, highlighting the need for some measures to counter disadvantage for those in non-DEIS schools (Smyth et al., 2015).

International research has shown that high-quality early years education has particularly strong positive effects on children from disadvantaged backgrounds (Melhuish, 2004). Plans to develop a DEIS-type model for early years settings in Ireland could help enhance the cognitive and socio-emotional wellbeing of children living in social housing and/or disorderly neighbourhoods.

Including housing tenure as a dimension of family background has been common practice in UK-based research (see, for example, Henderson et al., 2018; Gayle et al., 2016) but has been less common in Ireland. The study findings point to the value of considering housing circumstances in looking at children's experiences and outcomes so there is merit in taking account of these factors even where housing is not the primary focus of child research. Future research could usefully unpack the scale of the role played by housing quality and insecurity in explaining inequalities in child outcomes (for example, by income or household structure).

Matching of area-based deprivation measures to each wave of GUI data for both cohorts would provide a rich seam of information for understanding the relative role of neighbourhood, school and family factors in shaping child outcomes. Future waves of GUI data collection could usefully collect additional information on housing security and affordability as well as on the number of residential moves at different stages in children's life course to better understand the dynamics of children's housing circumstances. The next wave of data collection for Cohort '98 at 25 years of age promises to provide complementary insights into the impact of the housing situation on the living situation and wellbeing of young adults.

REFERENCES

Barrett, M., N. Farrell and B. Roantree (2022). *Energy Poverty and Deprivation in Ireland*. Dublin: ESRI.

Berger, L.M. and M.J. Carlson (2020). 'Family policy and complex contemporary families: A decade in review and implications for the next decade of research and policy practice', *Journal of Marriage and Family*, 82 (1), 478-507.

Blau, David M., Nancy Haskell and Donald R. Haurin (2015). 'The Impact of House Characteristics and Homeownership on Child Development and Young Adult Outcomes'. http://dx.doi.org/10.2139/ssrn.2718559.

Boyle, M.H. (2002). 'Home Ownership and the Emotional and Behavioral Problems of Children and Youth', *Child Development*, 73 (3), 883-892.

Breysse, P., N. Farr, W. Galke, B. Lanphear, R. Morley and L. Bergofsky (2004). 'The Relationship between Housing and Health: Children at Risk', *Environmental Health Perspectives*, Vol. 112 (15), 1583-88.

Bronfenbrenner, U. and P.A. Morris (2006). 'The Bioecological Model of Human Development', *Handbook of child psychology: Theoretical models of human development*, R.M. Lerner and W. Damon (Eds.), 793-828. John Wiley & Sons Inc.

Brooks-Gunn, J., G. Duncan and J.L. Aber (Eds.) (1997). *Neighborhood poverty: Policy implications in studying neighborhoods*. Russell Sage Foundation.

Causa, O. and J. Pichelmann (2020). 'Should I stay or should I go? Housing and residential mobility across OECD countries'. Paris: OECD, Working Paper no. 1626.

Centre for Ageing Better (2020). 'Homes, health and COVID-19: How poor-quality homes have contributed to the pandemic'. Centre for Ageing Better and the Kings Fund.

Clair, A. (2019). 'Housing: An Under-Explored Influence on Children's Well-Being and Becoming', *Child Indicators Research* 12**,** 609-626 (2019). https://doi.org/10.1007/s12187-018-9550-7.

Coley, R.L., T. Leventhal, A.D. Lynch and M. Kull (2013). 'Relations between housing characteristics and the well-being of low-income children and adolescents', *Developmental Psychology*, 49 (9), 1775-1789. https://doi.org/10.1037/a0031033.

Conger, R.D., K.J. Conger and M.J. Martin (2010). 'Socioeconomic status, family processes, and individual development', *Journal of Marriage and Family*, 72, 685-704. https://doi.org/10.1111/j.1741-3737.2010.00725.x.

Cooper, K. and K. Stewart (2020). 'Does household income affect children's outcomes? A systematic review of the evidence', *Child Indicators Research*, https://doi.org/10.1007/s12187-020-09782-0.

Corrigan, E., D. Foley, K. McQuinn, C. O'Toole and R. Slaymaker (2019). 'Exploring affordability in the Irish housing market', *The Economic and Social Review*, 50 (1), 119-157.

Cunha, F. and J.J. Heckman (2008). 'Formulating, identifying and estimating the technology of cognitive and non-cognitive skill formation', *Journal of Human Resources*, 43, 45.

Cunningham, M. and G. McDonald (2012). 'Housing as a Platform for Improving Education Outcomes Among Low-Income Children', What Works Collaborative.

Department of Housing, Local Government and Heritage (2022). Monthly Homelessness Report, August 2022. https://www.gov.ie/en/publication/085b6-homeless-report-august-2022/.

Desmond, M. and C. Gershenson (2016). 'Housing and Employment Insecurity among the Working Poor', *Social Problems*, 63 (1), 46-67. Dublin: ESRI

Doolan, M., K. Doorley, M. Regan and B. Roantree (2022). 'Budget 2023: distributional impact analysis'. Dublin: ESRI.

Doolan, M., B. Roantree and R. Slaymaker (2022). *Low Income Renters and Housing Supports*. Dublin: ESRI.

Drew, M. (2022). 'Interpreting the data', *Uncovering Food Poverty in Ireland*, Drew, M. (Ed.). Bristol, UK: Policy Press.

Evans, G.W. (2001). 'Environmental stress and health', *Handbook of health psychology*, A. Baum, T. Revenson and J. Singer (Eds.), 365-385. New Jersey: Erlbaum.

Evans, G.W. (2006). 'Child development and the physical environment', *Annual Review of Psychology*, 57, 423−451.

Evans, G.W. and K. English (2002). 'The environment of poverty: Multiple stressor exposure, psychophysiological stress, and socioemotional adjustment', *Child Development*, 1238-1248.

Eyles, A., S. Gibbons and P. Montebruno (2020) 'COVID-19 School Shutdowns: What Will They Do to Our Children's Education? A CEP COVID-19 Analysis', Paper 001, London School of Economics. London, UK.

Fahey, É., H. Russell, F. McGinnity and R. Grotti (2019). Diverse neighbourhoods: An analysis of the residential distribution of immigrants in Ireland. Dublin: ESRI.

Fisk, W.J., Q. Lei-Gomez and M.J. Mendell (2007). 'Meta-analyses of the associations of respiratory health effects with dampness and mold in homes', *Indoor Air*, 17 (4), 284-296.

Forrest, R. and A. Kearns (2001). 'Social Cohesion, Social Capital and the Neighbourhood'. *Urban Studies*, 38 (12): 2125-2143. https://doi.org/10.1080/00420980120087081.

Fowler, P.J., D.B Henry, M. Schoeny, J. Taylor and D. Chavira (2014). 'Developmental timing of housing mobility: Longitudinal effects on externalizing behaviors among at-risk youth', *Journal of the American Academy of Child & Adolescent Psychiatry*, 53 (2), 199-208.

Gambaro, L., A. Buttaro Jr., H. Joshi and M.C. Lennon (2022). 'Does Residential Mobility Affect Child Development at Age Five? A comparative Study of Children Born in US and UK Cities', *Developmental Psychology*, 18 (4), 700-713.

Gambaro, L. and H. Joshi (2016). 'Moving home in the early years: what happens to children in the UK?', *Longitudinal and Life Course Studies*, 2016, Volume 7, Issue 3, 265-87. http://dx.doi.org/10.14301/llcs.v7i3.375.

Gambaro, L., H. Joshi and R. Lupton (2017). 'Moving to a Better Place? Residential Mobility among Families with Young Children in the Millennium Cohort Study', *Population, Space and Place*, 23, e2072.

Gayle, V., S. Murray and R. Connelly (2016). 'Young people and school General Certificate of Secondary Education attainment: Looking for the "missing middle"', *British Journal of Sociology of Education*, 37 (3), 350-370.

Goux, D. and E. Maurin (2005). 'The Effect of Overcrowded Housing on Children's Performance at School', *Journal of Public Economics*, 89, 797-819.

Grotti, R., H. Russell, É. Fahey and B. Maître (2018). *Discrimination and Inequality in Housing in Ireland*. Dublin: ESRI/IHREC.

Halpenny, A.M., A.F. Keogh and R. Gilligan (2002). 'A Place for Children? Children in Families Living in Emergency Accommodation: The Perspectives of Children, Parents and Professionals'. Dublin: Homeless Agency.

Haurin, D.R., T.L. Parcel and R.J. Haurin (2002). 'Does Homeownership Affect Child Outcomes?', *Real Estate Economics*, 30, 635-666.

Haveman, R. and B. Wolfe (1994). *Succeeding generations: On the effects of investments in children*. New York: Russell Sage Foundation.

Hearne, R. (2020). Housing shock: The Irish housing crisis and how to solve it. Bristol: Policy Press.

Henderson, M., A. Sullivan, J. Anders and V. Moulton (2018). 'Social class, gender and ethnic differences in subjects taken at age 14', *The Curriculum Journal*, 29 (3), 298-318.

Holupka, S. and S.J. Newman (2012). 'The effects of homeownership on children's outcomes: Real effects or self-selection?', *Real Estate Economics*, 40 (3), 566-602.

Jocson, R.M. and V.C. McLoyd (2015). 'Neighborhood and housing disorder, parenting, and youth adjustment in low-income urban families', *American Journal of Community Psychology*, 55 (3-4), 304-313. https://doi.org/10.1007/s10464-015-9710-6.

Layte, R. (2022). 'Does Family Economic Strain Reduce Child Educational Achievement? A Longitudinal Assessment Using the Great Recession in Ireland', *European Sociological Review*, Volume 38, Issue 3, 408-424, https://doi.org/10.1093/esr/jcab049.

Leventhal, T. and J. Brooks-Gunn (2003). 'Moving to Opportunity: An Experimental Study of Neighborhood Effects on Mental Health'*, American Journal of Public Health*, 93, 1576-1582, https://doi.org/10.2105/AJPH.93.9.1576.

Leventhal, T. and S. Newman (2010). 'Housing and child development', *Child and Youth Services Review*, 32, 1165-1174.

Lloyd, J.E.V. and C. Hertzman (2010). 'How neighborhoods matter for rural and urban children's language and cognitive development at kindergarten and Grade 4', *Journal of Community Psychology*, 38 (3), 293-313.

Long, A.E., S. Sheridan, L. Gambi and D. Hoey (2019). 'Family homelessness in Dublin: causes, housing histories, and finding a home'. Dublin: Focus Ireland.

Ludwig, Jens, Greg J. Duncan, Lisa A. Gennetian, Lawrence F. Katz, Ronald C. Kessler, Jeffrey R. Kling and Lisa Sanbonmatsu (2013). 'Long-Term Neighborhood Effects on Low-

Income Families: Evidence from Moving to Opportunity', *American Economic Review*, 103 (3): 226-31.

Lupton, R., R. Tunstall, W. Sigle-Rushton, P. Obolenskaya, R. Sabates, E. Meschi, D. Kneale, E. Salter, C. Hammond, D. Kuh and B. Dodgeon (2009). *Growing up in social housing in Britain*, Joseph Rowntree Foundation, Tenant Services Authority and the Scottish Government.

Masarik, A.S. and R.D. Conger (2017). 'Stress and child development: A review of the Family Stress Model'. *Current opinion in psychology*, 13, 85-90.

Maxwell, L.E. (1996). 'Multiple effects of home and day care crowding', *Environment and Behavior*, 28 (4), 494-511.

McCulloch, A. (2006). 'Variation in children's cognitive and behavioural adjustment between different types of place in the British National Child Development Study', *Social Science & Medicine*, 62 (8), 1865-1879.

McCulloch, A. and H.E. Joshi (2001). 'Neighbourhood and family influences on the cognitive ability of children in the British National Child Development Study', *Social Science & Medicine*, 53 (5), 579-591.

McGinnity, F., I. Privalko, H. Russell, S. Curristan, A. Stapleton and J. Laurence (2022). *Origin and integration: Housing and family among migrants in the 2016 Irish Census*. Dublin: ESRI and Department of Children, Equality, Disability, Integration and Youth, https://doi.org/10.26504/bkmnext422.

McMullin, P., A. Karhulaa, E. Kilpi-Jakonena and J. Erola (2021). 'Geographical mobility and children's non-completion of upper secondary education in Finland and Germany: Do parental resources matter?', *British Educational Research Journal*, Vol. 47, No. 6, 1587-1610. https://doi.org/10.1002/berj.3745.

Melhuish, E.C. (2004). 'A literature review of the impact of early years provision on young children, with emphasis given to children from disadvantaged backgrounds'. London: National Audit Office.

Mohan, G., S. McCoy, E. Carroll, G. Mihut, S. Lyons and M. Domhnaill (2020). *Learning for all? Second-level education in Ireland during COVID-19*, ESRI Survey and Statistical Report Series 92, Dublin: ESRI. https://doi.org/10.26504/sustat92.pdf.

Mollborn, S., E. Lawrence and E.D. Root (2018). 'Residential Mobility across early childhood and children's educational readiness', *Demography*, 55 (2), 485-510 https://doi.org//10.1007/s13524-018-0652-0.

Nixon, E., R. Layte and M. Thornton (2019). 'The effects of economic recession and family stress on the adjustment of 3-year-olds in Ireland: analysis of wave 1 and wave 2 of the '08 (infant) cohort of Growing Up in Ireland'. Dublin: Stationery Office.

Norris, M. and M. Byrne (2021). 'The Political Economy of Housing in Ireland', *The Oxford Handbook of Irish Politics*, D. Farrell and N. Hardiman (Eds.). Oxford University Press.

O'Campo, P., C. Salmon and J. Burke (2009). 'Neighbourhoods and mental well-being: What are the pathways?', *Health & Place*, Volume 15, Issue 1, 56-68.

Ombudsman for Children (2012). Homeless Truths: Children's Experiences of Homelessness in Ireland. Dublin: Ombudsman for Children.

Ombudsman for Children (2019). No Place like Home: Children's Experiences of Living in Family Hubs. Dublin: Ombudsman for Children.

Pearce, A., L. Li, J. Abbas, B. Ferguson, H. Graham and C. Law (2012). 'Does the home environment influence inequalities in unintentional injury in early childhood? Findings from the UK Millennium Cohort Study', *Journal of Epidemiology and Community Health*, 66 (2), 181-188.

Peat, J.K., J. Dickerson and J. Li (1998). 'Effects of damp and mould in the home on respiratory health: a review of the literature', *Journal of Epidemiology and Community Health*, 55, 111-22.

Pribesh, S. and D.B. Downey (1999). 'Why are residential and school moves associated with poor school performance?', *Demography*, 36 (4), 521-534.

Roantree, B., B. Maître, A. McTague and I. Privalko (2021). 'Poverty, income inequality and living standards in Ireland'. https://doi.org/10.26504/bkmnext412.

Roantree, B., M. Barrett and P. Redmond (2022). *Poverty, income inequality and living standards in Ireland: 2nd annual report*. Dublin: ESRI. https://doi.org/10.26504/jr1.

Russell, H., O. Kenny and F. McGinnity (2016). Childcare, Early Education and Socio-emotional Outcomes at Age 5: Evidence from the Growing Up in Ireland Study. Dublin: ESRI.

Russell, H., I. Privalko, F. McGinnity and S. Enright (2021). *Monitoring Adequate Housing in Ireland*. Dublin: ESRI.

Sammons, P., K. Sylva, E. Melhuish, I. Siraj-Blatchford, B. Taggart, D. Draghici, R. Smees and K. Toth (2012). Influences on students' development in Key Stage 3: Social-behavioural outcomes in Year 9, Effective Pre-School, Primary and Secondary Education Project (EPPSE 3-14). London: Institute of Education, University of London.

Sellström, E. and S. Bremberg (2006). 'The significance of neighbourhood context to child and adolescent well-being: A systematic review of multi-level studies', *Scandinavian Journal of Public Health*, 34, 544-554.

Shaw, M. (2004). 'Housing and Public Health', *Annual Review of Public Health,* 25, 397-418.

Simsek, M., R. Costa and H. de Valk (2021). 'Childhood residential mobility and health outcomes: A meta-analysis', *Health & Place,* 71, 1-12.

Sirr, Lorcan (Ed.) (2014). *Renting in Ireland*. Dublin: Institute of Public Administration. https://doi.org/10.21427/9ccn-0m32.

Smyth, E. and M. Darmody (2021). Risk and Protective Factors in Adolescent Behaviour: The Role of Family, School and Neighbourhood Characteristics in (Mis)Behaviour Among Young People. Dublin: ESRI.

Smyth, E., A. Devlin, A. Bergin and S. McGuinness (2022). A North-South Comparison of Education and Training Systems: Lessons for Policy. Dublin: ESRI.

Smyth, E., S. McCoy and G. Kingston (2015). *Learning from the Evaluation of DEIS*. Dublin: ESRI.

Smyth, E. and A. Murray (2022). 'The Effect of Pandemic-Related Economic Disruption on Young Adolescents in Ireland', *Children*, 2022, 9, 1037.

Solari, C.D. and R.D. Mare (2012). 'Housing crowding effects on children's wellbeing'. *Social Science Research*, 41 (2), 464-76. https://doi.org/10.1016/j.ssresearch.2011.09.012.

South, S., K. Crowder and K. Trent (1998). 'Children's Residential Mobility and Neighbourhood Environment following Parental Divorce and Remarriage', *Social Forces*, 77 (2), 667-693. https://doi.org/10.2307/3005543.

Sylva, K., E. Melhuish, P. Sammons, I. Siraj-Blatchford and B. Taggart (2012). Final Report from the Key Stage 3 Phase: Influences on Students' Development from Age 11-14, Effective Preschool, Primary and Secondary Education 3-14 Project (EPPSE 3-14). London: Department for Education (DFE).

Thomson, H., M. Petticrew and D. Morrison (2001). 'Health effects of housing improvement: systematic review of intervention studies', *BMJ*, vol 323.

Vyncke, V., B. De Clercq, V. Stevens, C. Costongs, G. Barbareschi, S. Jónsson, S. Curvo, V. Kebza, C. Currie and L. Maes (2013). 'Does neighbourhood social capital aid in levelling the social gradient in the health and well-being of children and adolescents? A literature review', *BMC Public Health*, 13, no. 1, 1-18.

Watson, D. and E. Corrigan (2019). 'Social Housing in the Irish Housing Market,' *The Economic and Social Review*, vol. 50 (1), 213-248.

Watson, D. and J. Williams (2003). *Irish National Survey of Housing Quality 2001-2002*. Dublin: ESRI.

WHO (2010). International Workshop on Housing, Health and Climate Change: Meeting Report, Geneva: World Health Organization.

Wilkinson D. (1999). *Poor housing and ill health: a summary of the research evidence*. Edinburgh: Scottish Office Central Research Unit.

Ziol-Guest, K.M. and C.C. McKenna (2014). 'Early childhood housing instability and school readiness', *Child Development*, 85 (1), 103-113. https://doi.org/10.1111/cdev.12105.

APPENDIX

APPENDIX A2.1 – PREDICTORS OF HOUSING TENURE AT WAVE 5 – MULTINOMIAL LOGISTIC REGRESSION MODEL (BASELINE CATEGORY: OWNER-OCCUPIED ACCOMMODATION) (RELATIVE RISK RATIOS)

	MODEL 1		MODEL 2		MODEL 3	
Compared to being in owner-occupied housing	**Outcome: Social Housing**	**SE**	**Outcome: Social Housing**	**SE**	**Outcome: Social Housing**	**SE**
CG and HH characteristics (measured at wave 5)						
Ethnicity						
Baseline: White Irish						
Other White	1.294	(0.285)	1.766*	(0.416)	1.428	(0.338)
Black	18.979***	(6.495)	14.761***	(5.504)	10.096***	(3.877)
Asian	1.980+	(0.725)	1.728	(0.781)	1.253	(0.596)
Other	3.372+	(2.126)	2.846+	(1.649)	2.238	(1.295)
HH composition						
One parent, one child < 18	5.913***	(1.902)	3.947***	(1.477)	3.555**	(1.376)
One parent, two+ children < 18	11.639***	(3.102)	5.009***	(1.534)	4.772***	(1.512)
Baseline: Two parents, one child < 18						
Two parents, two+ children < 18	0.641*	(0.138)	0.379***	(0.093)	0.393***	(0.101)
Irish Citizenship of CGs						
Baseline: Both CG Irish citizens						
PCG citizen/SCG not Irish citizens	1.329	(0.409)	1.415	(0.476)	1.329	(0.454)
PCG not/SCG Irish citizen	0.602	(0.326)	0.823	(0.427)	0.905	(0.466)
Both CG not Irish citizens	2.743**	(1.011)	2.060+	(0.808)	2.269*	(0.908)
No SCG	-	-	-	-	-	-
SCG present but no survey completed	2.531***	(0.382)	2.315***	(0.403)	2.297***	(0.407)
PCG Limiting long-term illness						
Baseline: No						
Yes	1.861***	(0.242)	1.398*	(0.207)	1.330+	(0.197)
SCG Limiting long-term illness						
Baseline: No						

Yes	2.488***	(0.465)	1.934**	(0.401)	1.818**	(0.387)
No SCG	-	-	-	-	-	-
SCG	-	-	-	-	-	-
Qualifications of PCG						
Baseline: Junior Cert or less						
Leaving Cert			0.699+	(0.143)	0.726	(0.150)
Non-degree			0.465***	(0.087)	0.501***	(0.095)
Degree or more			0.186***	(0.044)	0.197***	(0.047)
PCG employment status						
Baseline: Employed						
Unemployed			2.029*	(0.698)	1.924*	(0.635)
Inactive			1.609***	(0.228)	1.579**	(0.226)
SCG employment status						
Baseline: Employed						
Unemployed			10.132***	(2.908)	9.595***	(2.830)
Inactive			1.425	(0.384)	1.607+	(0.453)
No SCG in HH			-	-	-	-
SCG present but no survey completed			-	-	-	-
HH income quintiles						
Baseline: Lowest						
2nd			0.715*	(0.117)	0.678*	(0.114)
3rd			0.365***	(0.083)	0.327***	(0.073)
4th			0.148***	(0.042)	0.137***	(0.040)
Highest			0.042***	(0.018)	0.035***	(0.015)
Missing			0.371***	(0.079)	0.352***	(0.076)
Urban/rural						
Baseline: Rural						
Small town					2.578***	(0.503)
Other urban					2.599***	(0.446)
Large urban					2.726***	(0.470)
Constant	0.078***	(0.018)	0.453***	(0.156)	0.267***	(0.1)

Compared to being in owner-occupied housing	Outcome: Private Renting	SE	Outcome: Private Renting	SE	Outcome: Private Renting	SE
Ethnicity						
Baseline: White Irish						
Other White	4.319***	(0.676)	4.848***	(0.756)	4.157***	(0.661)
Black	22.267***	(7.290)	18.525***	(6.290)	13.638***	(4.564)
Asian	5.889***	(1.538)	6.146***	(1.768)	4.794***	(1.421)
Other	7.411***	(3.801)	7.197***	(3.856)	6.050***	(3.133)
HH composition						
One parent, one child < 18	6.846***	(2.082)	5.559***	(1.744)	5.229***	(1.662)
One parent, two+ children < 18	6.507***	(1.645)	4.335***	(1.135)	4.136***	(1.091)
Baseline: Two parents, one child < 18						
Two parents, two+ children < 18	0.577*	(0.125)	0.492***	(0.106)	0.501**	(0.108)
Irish Citizenship of CGs						
Baseline: Both CG Irish citizens						
PCG citizen/SCG not Irish citizen	2.626***	(0.679)	2.718***	(0.700)	2.502***	(0.627)
PCG not/SCG Irish citizen	0.622+	(0.172)	0.649	(0.179)	0.709	(0.196)
Both CG not Irish citizens	5.489***	(1.390)	4.736***	(1.204)	5.157***	(1.338)
No SCG	-	-	-	-	-	-
SCG present but no survey completed	2.634***	(0.408)	2.269***	(0.350)	2.308***	(0.357)
PCG Limiting long-term illness						
Baseline: No						
Yes	1.383*	(0.194)	1.238	(0.179)	1.200	(0.173)
SCG Limiting long-term illness						
Baseline: No						
Yes	1.642**	(0.298)	1.577*	(0.291)	1.520*	(0.281)
No SCG	-	-	-	-	-	-
SCG present but no survey completed	-	-	-	-	-	-
Qualifications of PCG						
Baseline: Junior Cert or less						
Leaving Cert			0.552*	(0.133)	0.579*	(0.138)
Non-degree			0.715	(0.155)	0.754	(0.161)
Degree or more			0.479**	(0.109)	0.500**	(0.113)

PCG employment status						
Baseline: Employed						
Unemployed			1.314	(0.507)	1.258	(0.479)
Inactive			1.171	(0.150)	1.157	(0.147)
SCG employment status						
Baseline: Employed						
Unemployed			3.057*	(1.412)	2.958*	(1.319)
Inactive			0.807	(0.242)	0.910	(0.274)
No SCG in HH			-	-	-	-
SCG present but no survey completed			-	-	-	-
HH income quintiles						
Baseline: Lowest						
2nd			0.970	(0.176)	0.945	(0.170)
3rd			0.734	(0.141)	0.683*	(0.132)
4th			0.520**	(0.105)	0.481***	(0.098)
Highest			0.324***	(0.070)	0.265***	(0.058)
Missing			0.570*	(0.125)	0.532**	(0.118)
Urban/rural						
Baseline: Rural						
Small town					1.644*	(0.340)
Other urban					1.795***	(0.291)
Large urban					2.412***	(0.344)
Constant	0.073***	(0.016)	0.201***	(0.067)	0.14***	(0.046)
Compared to being in owner-occupied housing	**Outcome: living with PCG/SCG parents**	**SE**	**Outcome: living with PCG/SCG parents**	**SE**	**Outcome: living with PCG/SCG parents**	**SE**
Ethnicity						
Baseline: White Irish						
Other White	0.978	(0.561)	0.901	(0.556)	0.816	(0.521)
Black	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Asian	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Other	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
HH composition						

One parent, one child < 18	15.740***	(8.487)	11.445***	(6.175)	11.388***	(6.114)
One parent, two+ children < 18	5.574**	(3.048)	3.306*	(1.890)	3.207*	(1.824)
Baseline: Two parents, one child < 18						
Two parents, two+ children < 18	0.506	(0.262)	0.426	(0.229)	0.441	(0.237)
Irish Citizenship of CGs						
Baseline: Both CG Irish citizens						
PCG citizen/SCG not Irish citizen	3.948*	(2.370)	4.354*	(2.686)	4.190*	(2.551)
PCG not/SCG Irish citizen	0.304	(0.342)	0.325	(0.369)	0.327	(0.370)
Both CG not Irish citizens	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
No SCG	-	-	-	-	-	-
SCG present but no survey completed	1.097	(0.454)	0.865	(0.390)	0.872	(0.399)
PCG Limiting long-term illness						
Baseline: No						
Yes	0.798	(0.294)	0.639	(0.258)	0.605	(0.250)
SCG Limiting long-term illness						
Baseline: No						
Yes	0.488	(0.449)	0.461	(0.455)	0.441	(0.433)
No SCG	-	-	-	-	-	-
SCG present but no survey completed	-	-	-	-	-	-
Qualifications of PCG						
Baseline: Junior Cert or less						
Leaving Cert			1.171	(0.690)	1.191	(0.700)
Non-degree			1.173	(0.578)	1.180	(0.563)
Degree or more			1.261	(0.685)	1.268	(0.678)
PCG employment status						
Baseline: Employed						
Unemployed			4.180**	(2.237)	4.076**	(2.182)
Inactive			1.532	(0.436)	1.515	(0.435)
SCG employment status						
Baseline: Employed						
Unemployed			0.417	(0.454)	0.395	(0.432)
Inactive			1.264	(1.131)	1.422	(1.260)
No SCG in HH			-	-	-	-
SCG present but no survey completed			-	-	-	-

HH income quintiles						
Baseline: Lowest						
2nd			0.231*	(0.138)	0.229*	(0.139)
3rd			0.467+	(0.203)	0.433+	(0.190)
4th			0.206**	(0.123)	0.198**	(0.121)
Highest			0.231**	(0.115)	0.195**	(0.100)
Missing			1.134	(0.519)	1.087	(0.497)
Urban/rural						
Baseline: Rural						
Small town					0.667	(0.423)
Other urban					1.658	(0.673)
Large urban					1.789+	(0.589)
Constant	0.016***	(0.008)	0.033***	(0.022)	0.028***	(0.018)
Pseudo R-squared	0.16		0.25		0.27	
Observations	7303		7303		7303	

Whitaker Square,
Sir John Rogerson's Quay,
Dublin 2
Telephone **+353 1 863 2000**
Email **admin@esri.ie**
Web **www.esri.ie**
Twitter **@ESRIDublin**

ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE