Children's socioeconomic circumstances, family relationships and subjective well-being:

Evidence from Understanding Society, the UK Household Longitudinal Study

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Abstract

Using data from Understanding Society: the UK Household Longitudinal Study (UKHLS), this thesis seeks to understand how different constellations of socioeconomic circumstances, family contexts and family relationships combine to explain differences in children's quality of life, as measured through self-reported measures of subjective well-being (SWB). The statistical methods used include confirmatory factor analysis, logistic and linear regression, fixed and random effects models, latent class analysis and structural equation modelling.

Measurement is a central theme. Chapter 2 adds to the nascent literature on measurement of children's SWB to deepen understanding of what SWB is measuring in children, and why different measures have different correlates. There is support for a four-domain model of SWB –family, friends, school and appearance – which had longitudinal invariance. However, testing of this model with children of different ages, sexes and ethnicities cautions against unreflective use of composite SWB scores to compare sub-groups. The appearance domain, in particular, appears to have different salience for different sub-groups of children.

Chapter 3 considers measurement of socioeconomic circumstances and finds that measures that take account of children's perspectives on their material circumstances have the strongest associations with SWB. Chapter 4, which examines family composition, finds that nuanced measures that acknowledge variation in the formality of step-parent structures and the additional layer of support provided to some families by extended family offer insights into the processes that link family structures to SWB.

Chapter 5 considers children and adult perspectives on family relationship quality. Once measures of support, closeness and conflict are combined in typologies of parent-child and

sibling relationships, a clear theme emerges of socioeconomic disadvantage and financial stress being associated with lower relationship quality and, in turn, with children's SWB. Neglectful parent-child relationships characterised by high levels of conflict and low warmth, and sibling relationships characterised by high conflict had the strongest associations with SWB.

Acknowledgements

Contents

List of figures

List of tables

Chapter 1: Introductory chapter

Overview

Socioeconomic disadvantage has been shown to be detrimental to children and to have various negative effects, including in relation to their physical and mental health, and their success within the education system. In addition, qualitative research points to the myriad of ways in which a lack of resources shapes - and often limits - children's quality of life. Yet subjective well-being (SWB), another way of measuring children's quality of life – whereby children are asked how they feel about their life as a whole and different aspects of life – has not been found to be strongly associated with socioeconomic disadvantage. There appear to be two main reasons for this disjuncture between the findings of qualitative and quantitative research, and of studies focused on SWB compared to other children's outcomes. The first relates to the measurement of socioeconomic disadvantage, which is generally not 'child-centred' and may not adequately capture the complexity of children's experiences; and the second relates to the extent to which children's family relationships and circumstances - which are known to be of fundamental importance to children's quality of life – are themselves related to or exacerbated by socioeconomic disadvantage.

Drawing on longitudinal data about children's lives from the Understanding Society study, in this thesis I seek to explore these themes and deepen understanding of the ways in which children's socioeconomic circumstances and family relationships inter-relate to explain differences in their quality of life. This chapter introduces the central concept that is explored in this thesis – children's SWB – and provides a rationale for the analysis. It outlines why research on children's SWB is needed, what it contributes to existing literature and why it is pertinent to public policy. It also summarises what is known about SWB, including from the

small number of studies that are focused on children's SWB and its correlates. Understanding Society is described in detail, as this dataset is common to the whole thesis.

Why is research on children's SWB needed?

In this thesis, I focus on children's SWB as the main outcome variable of interest. A central proposition of this thesis is that children's current quality of life is important in and of itself, and not just because it predicts future well-being as adults. SWB, or happiness as it is often referred to in shorthand (Lucas and Diener, 2008), is a simple concept, and one that is widely understood by expert and lay audiences. It is an inherently democratic measure, as it is determined entirely by the individual in question: 'a person feels and thinks his or her life is desirable regardless of how others see it' (Diener, 2009). With SWB, the respondent is free to define the scope of the question and points of reference, which may be themselves under different timeframes or circumstances, other people they know, or a larger universe of people that are like or unlike them.

The subjective nature of the measure has been criticised for being liable to different interpretations by different people (Ruggeri *et al.*, 2020). However, in my view, this is precisely its value. Only the person feeling emotions can know if those emotions are felt, and only the person experiencing their life in a particular way can evaluate the quality of that life. Thus, subjectivity is fundamental to SWB, and what differentiates it from other children's outcomes, which may involve children as informants (e.g. sitting standardised tests, answering questions about behaviours) but are usually defined and assessed by adults or expert criteria. Nonetheless, the subjectivity of SWB has its shortcomings, including that different aspects of children's lives may have more or less salience to children in different

circumstances and contexts, which may make it susceptible to measurement error. For this reason, measurement of SWB is a core component of this thesis.

In order to understand the factors that influence the quality of children's lives, I take the position that in respect of children's thoughts, feelings and opinions - and not just in relation to SWB - self-reported data from children is the 'gold standard' (Pople and Rees, 2018). Proxy data from adults captures an additional, valuable perspective, but when the research focus is on children's experienced quality of life, adult views are a poor substitute (de Leeuw, Borgers and Smits, 2004). Moreover, there is evidence of poor correlations between children's and parents' responses to questions about children's feelings and behaviours (Goodman, Lamping and Ploubidis, 2010; Patalay and Fitzsimons, 2018; Fattore, Mason and Watson, 2017). Relatedly, there is relatively little research on children's perceptions on their quality of life, and even less that is longitudinal in nature. With respect to children's 'voices', Asher Ben-Arieh in the preface to 'Children's Understandings of Well-being' acknowledges that:

> we are only starting to truly listen to children, to discover their opinions and evaluations and to recognise that children's points of view may be different from those of adults and that it is no longer clear that we adults are the ones who are 'right'.
>
> (Fattore, Mason and Watson, 2017, p. vi)

Other outcomes - such as children's psychological difficulties and academic success – are central pieces of the jigsaw contributing to our understanding of the quality of children's lives, but they are inadequate proxies for experienced well-being. Furthermore, studies have shown that rather than being two ends of a continuum, children's SWB and mental health problems are distinctive concepts (Antaramian *et al.*, 2010; Greenspoon and Saklofske, 2001), and have different correlates (Patalay and Fitzsimons, 2016; Patalay and Fitzsimons, 2018). Children may feel happy or unhappy with different aspects of their lives regardless of whether they have emotional - and especially behavioural – difficulties (Pople and Rees,

2016). However, whilst there is a vast research literature on the factors predicting

psychological difficulties and educational attainment, the literature on children's SWB is

much more limited (Rees, 2018; Patalay and Fitzsimons, 2016).

Relevance for policy

The simplest argument for the relevance of SWB for policy is that, for most people,

happiness is the ultimate goal toward which they strive (Lucas and Diener, 2009, p. 76).

Thus, measuring and seeking to improve SWB is an important component of ensuring that

societies are successfully meeting the needs of their citizens that should be reflected in

research budgets and priorities for public policy.

> It seems only reasonable to find out from the individuals a social system is designed
> to serve how they perceive their lives under that system.

(Andrews, 1974, p. 283)

It hardly needs to be said that, seeing as they comprise more than a fifth (21.2%) of the

population (Office for National Statistics, 2021a), children are a fundamental part of society

whose needs should be met. If there are sub-groups of children who have lower SWB, there

is a strong basis for arguing that they deserve special policy attention (Andrews, 1974).

A different type of argument comes from the growing body of multi-disciplinary research

that has sprung up over the last half century to investigate the concept and measurement of

SWB, along with its antecedents and consequences. In respect of measurement, there is

evidence of correlations with objective, 'expert' or physiological measurement of well-being

to support the validity of self-report methods of SWB (Lucas and Diener, 2008).

Furthermore, systematic differences between children and adults living in different

circumstances demonstrates that SWB is connected to the social and material contexts in

which people live (Easterlin, 2021; Main and Bradshaw, 2014; Diener, 1984). Understood in

this way, SWB is, at least in theory, something that can be changed at the individual and societal level with 'well-being focused' policies.

There is also evidence to document the consequences of SWB. Not only are happy people more successful, engaged, trusting and cooperative (Diener, 2009); the opposite appears to be true. Studies have found low SWB to predict mental health and other outcomes, such as onset of depression and suicide (Koivumaa-Honkanen *et al.*, 2004; Koivumaa-Honkanen *et al.*, 2001). Unhappiness begets unhappiness: 'People who say they are unsatisfied do things that psychologists would expect unsatisfied people to do' (Lucas and Diener, 2009, p. 81). Thus, SWB has consequences for other, large-budget policy areas as well such as health, crime and policing, education and employment.

The concept of SWB

Although SWB is a modern-day concept, it has a long history of study. Ancient Greek philosophical writings on happiness are embedded within Aristotle's concept of eudaimonia, which in modern-day terms is concerned more with being a 'good person' and living a 'virtuous life' than having positive thoughts and feelings about life. However, subjective appraisals of quality of life also have roots that can be traced back to ancient Greek philosophy, such as the writings of Marcus Aurelius:

> 'No man is happy who does not think himself so.'

(Aurelius, 2013)

This focus on the individual's experience came to the fore in the Enlightenment period, with a shift towards more democratic and secular ideas of happiness. Scholars have argued that, at this point, there was a divergence between Western thinking, with its emphasis on

individualism, and the more collective and selfless orientations central to Eastern thought. In parallel, the focus on the individual within the philosophical ideas of the Enlightenment was accompanied by the increasing prominence of scientific measurement, and the possibility of developing a science of well-being (Fattore, Mason and Watson, 2017), that involved 'rigorous conceptualization, valid measurement, broadly representative data, and sophisticated analysis' (Andrews, 1974, p. 280). In this way, contemporary scientific methods made it possible to provide some answers to questions posed by ancient philosophers about the nature of happiness (Diener, 2009). However, until recent decades, most research has focused on negative states such as depression, with little known about the causes of happiness.

In the literature, well-being is typically characterised as being multi-dimensional. As indicated above, there are established philosophical distinctions between hedonic and eudaimonic traditions (Diener, 1984). While eudaimonia relates to standards that are usually external to the individual about what constitutes a good life, hedonic well-being is concerned with the emotions, behaviours and values that are identified and prioritised by the individual, such as feelings of pleasure and enjoyment. Within hedonic well-being, there is a further separation between cognitive components, which relate to judgements about the quality of one's life, and affective components (Andrews and Withey, 1976), which include pleasurable emotions such as joy, serenity and contentment on the one hand, and unpleasant emotions such as anger, sadness and worry on the other.

With respect to measurement, the experience of momentary feelings of joy or unhappiness – a person's affective well-being – is typically assessed over a short time-period to reflect the

time-frame of emotions. In contrast, being a global judgement about quality of life, cognitive well-being is not usually measured in relation to a specific timeframe. Research points to differences in the correlates of affective and cognitive SWB for adults (Diener, 1984) and children (Rees and Bradshaw, 2018), but also to people's experience of positive and negative affect exerting an influence on their cognitive judgements about life (Lucas and Diener, 2008). It is because of the distinctiveness of these different components of SWB - and the greater stability and reflectiveness of cognitive evaluations compared to passing emotions - that life satisfaction is the focus of this thesis.

In addition to the overall measures of SWB that have been outlined above, much attention has been given to the different domains of life in which well-being is experienced (Cummins, 1996). Numerous studies using different methodologies have proposed lists of domains of SWB that are intended to be comprehensive yet differ from each other. There is no clear consensus on whether these lists of domains have cross-cultural equivalence, although there is widespread agreement that certain aspects of life – for example, economic, health and family factors - are relevant to people all over the world (Easterlin, 2021). For adults, research suggests that satisfaction with self, standard of living and family life make larger contributions to overall SWB than satisfaction with work and health (Diener, 1984). The most widely used set of domains is Cummins' Personal Well-being Index, which for children has an overall measure and seven domains: money, health, achievement, personal relationships, safety, community, and the future (Cummins, 1996).

A related consideration is whether 'top-down' or 'bottom-up' theories best explain well-being. 'Top-down' theories give precedence to the attitudes and temperament of the

individual, while 'bottom-up' theories emphasise external conditions such as income and status (Diener, 2009). In extremis, the top-down approach argues that only individual personality matters for SWB since people adapt to all circumstances over time, while the bottom-up approach conceives of well-being as the product of economic and other societal factors. In practice, it is likely that both 'bottom-up' and 'top-down' approaches to SWB are at play, and also that they are heavily interlinked. Support for bottom-up theories of children's SWB can be found in the fact that children experiencing events such as bullying systematically report lower SWB. However, given that individual children perceive similar events differently, it is inevitable that SWB is also shaped by top-down processes.

In social research, objective indicators are often pitted against subjective measures as being more heavyweight, tangible or policy-relevant, while people's perceptions and feelings can be dismissed for being idiosyncratic or difficult to interpret. However, there are philosophical and empirical counter-arguments to be made to these criticisms. A child's feelings of happiness or unhappiness about life as a whole or some aspect of life – whatever their source – are themselves 'a significant fact' and a fundamental part of 'what life *is*' for that child (Andrews, 1974, p. 288), and also a direct measure of the concept being studied. Subjective measures also have an inherent comparability that objective measures lack because they are 'on the same dimension' (Andrews, 1974) and, generally, use the same scale. Thus, it is meaningful to compare children's happiness with their family relationships and how they feel about school, when it would make no sense to make an equivalent comparison between unemployment and divorce rates.

Furthermore, research with both adults and children has shown that self-reported measures of SWB are both reliable and valid (Fattore, Mason and Watson, 2017), and that objective or 'expert' evaluations are correlated with subjective measures (Lucas and Diener, 2008; Fattore, Mason and Watson, 2017). Although method variance cannot be completely disregarded when using subjective measures of well-being, it is not thought to 'overwhelm the valid variance' accessed by self-report methods (Lucas and Diener, 2008).

Causes and correlates of SWB

For adults, research has demonstrated differences in people's SWB that are related to objective conditions such as income (Easterlin, 2021), employment (Diener, 1984), age (Blanchflower, 2021), sex (Batz and Tay, 2018), ethnicity (Diener, 1984), marital status (Stutzer and Frey, 2006), physical environment (Capaldi, Dopko and Zelenski, 2014) and health (Fleche, Smith and Sorsa, 2012), as well as to subjective conditions such as the quality of interpersonal relationships (Lucas and Dyrenforth, 2006). There is also evidence of person-specific factors such as an individual's genetic inheritance (Nes and Røysamb, 2015) and personality (DeNeve and Cooper, 1998) having a significant role in determining their levels of SWB. Relatedly, aspirations are thought to be influential, with a person's SWB being shaped by the discrepancy between their expectations for life and the actual conditions experienced. In this sense, high aspirations can pose as much a threat to SWB as poor conditions (Diener, 1984, p. 46).

Research on the antecedents of SWB, therefore, points to SWB being both a trait and a state. As a trait, SWB is a 'predisposition to experience certain levels of affect', which needs to be considered separately from a person's state of mind at a particular point in time (Diener, 1984). Of the different components of SWB, life satisfaction has been found to be the most

stable component, and to have substantial consistency across different situations and timepoints (Diener and Larsen, 1984). However, since this stability can be attributable to stable environmental factors as well as person-specific factors, most well-being scholars believe life circumstances to be an important influence on SWB (Diener, 2009).

The concept of children's SWB

As outlined already, there has been much less research on SWB in children and an 'adultcentricism in the history of thinking on well-being', whereby children are conceptualised as incomplete adults and thus, their well-being is judged in terms of their well-becoming (Fattore, Mason and Watson, 2017, p. 11). In parallel, there is a tendency within the literature to treat SWB as a universal concept that can be understood in similar ways for people of all ages in all circumstances, although there is acknowledgement of subtleties of difference in the salience of the distinctive components or domains of SWB across cultural groups and ages. Thus, SWB is not conceptualised as being qualitatively different in children (Savahl, Casas and Adams, 2021). However, given the lack of research focused on the conceptualisation and measurement of children's SWB, this assumption has not been fully tested.

Furthermore, there are theoretical reasons why children's SWB may be different - and have different causes - to adult SWB. Of relevance to this thesis is the idea that children - like adults - judge the quality of their lives in relation to 'proximal others' (Festinger, 1954). Social comparison theories are central to understandings of how economic circumstances shape SWB. Townsend's (1979) theory of relative deprivation defines poverty in terms of what other people have and what society considers customary. People are deprived if they do not have the resources to keep up with these socially accepted standards of living (Townsend,

1979). 'Keeping up with the Joneses' is also a key explanation for the relationship between income and adult SWB in which short-term but not long-term trends in income are related to SWB: increases in SWB related to one's own income rising are thought to be cancelled out by decreases in SWB related to other people's incomes rising (Easterlin, 2021). Whether this is true in children has not been fully investigated, but there is ample evidence of social comparisons to proximal others being important to children (Ridge, 2002; Ridge, 2009; Mahony *et al.*, 2017).

Nonetheless, Bronfenbrenner's ecological framework (Bronfenbrenner, 1979) suggests that children's social comparisons may be narrower than adults due to their limited exposure to the experiences of others across society, who are understood as distal rather than proximal influences on children. Furthermore, children in disadvantaged circumstances - who less often leave their neighbourhoods and may learn a sense of 'constraint, as opposed to entitlement' (Lareau, 2011, p. 83) - are likely to have even smaller worlds than their affluent peers, who are more regularly exposed to different contexts through travel and more geographically dispersed networks of kin (Chan and Ermisch, 2013). For these reasons, it is likely that the diversity of economic circumstances in children's neighbourhoods will interact with their own circumstances to shape their views and aspirations.

Another consideration is whether person-specific factors – such as personality and optimistic orientations – are more or less relevant for children compared to adults. There is some evidence that children are more hopeful, optimistic and have higher aspirations for life than older children and adults (Bamford and Lagattuta, 2020). If a more optimistic and hopeful outlook on life leads to more positive evaluations of the quality of their lives, this will have consequences for measurement, including that common method variance may be more of an

issue amongst children than for adults. On the other hand, person-specific factors such as self-efficacy, environmental mastery and locus of control are also known to contribute to SWB (Ryan and Deci, 2001). Given that children have less autonomy to make changes to their circumstances and environments than adults, this may lead to lower SWB, especially amongst older children whose increasing independence may throw the limits of their autonomy into sharp relief.

A final point is that, just as mental health research has found that different childhood disorders have distinctive correlates (Ford, Goodman and Meltzer, 2004), it is likely that the same is true of different measures of children's well-being (Diener, 2009; Rees and Bradshaw, 2018). There has been little research to establish empirically how children's affective and cognitive happiness relate to each other, and to other factors. However, Rees (2018) used confirmatory factor analysis to explore a 'tripartite' model of children's SWB using data from the Millennium Cohort Study when children were aged 11. This provided empirical support for a distinction between children's life satisfaction, positive and negative affect, and also found distinctive correlates for the three measures, highlighting the value of considering each aspect of child SWB separately (Rees, 2018).

What is known about children's SWB in the UK?

A small but growing research literature has drawn on data from household panel and cohort studies to investigate children's SWB and its correlates. These studies include explorations of multiple predictors of SWB (Moore *et al.*, 2018; Chanfreau *et al.*, 2013; Rees and Bradshaw, 2018; Patalay and Fitzsimons, 2018; Patalay and Fitzsimons, 2016; Parkes, Sweeting and Wight, 2016; Arseneault, Bowes and Shakoor, 2010) as well as a focus on specific predictors

such as parenting style (Chan and Koo, 2011), family structure (Robson, 2010; Bjarnason *et al.*, 2012), parental mental health (Powdthavee and Vignoles, 2008; Webb *et al.*, 2017), parental SWB (Clair, 2012), household income (Knies, 2017; Knies, 2012), income poverty (Mostafa and Platt, 2014), material deprivation and resource sharing (Main, 2013; Main, 2018), parental unemployment (Powdthavee and Vernoit, 2013), social relationships (Goswami, 2012), health-related behaviours (Booker *et al.*, 2014), social media use (Booker *et al.*, 2015) and bullying (Wolke and Skew, 2011b; Wolke and Skew, 2011a; Yucel and Yuan, 2016; Bradshaw *et al.*, 2017). The sections that follow summarise the main findings from this literature. More detail on research into SWB and socioeconomic circumstances, family structure and family relationships are included in the relevant chapters. Moreover, since there are limited studies on children's SWB, specific chapters also contain discussions of research on other children's outcomes such as mental health and educational attainment where relevant.

Individual characteristics

There is consistent evidence of a relationship between children's age and SWB, with lower average levels of SWB found amongst older children (Pople and Rees, 2016). In comparison, the evidence for sex is more mixed, with some studies finding no statistical difference in SWB between the sexes (Goswami, 2014), and others highlighting the lower SWB of girls (Patalay and Fitzsimons, 2016), particularly in relation to feelings about their appearance (Pople and Rees, 2016). Prior research has reached inconsistent findings about the SWB of children from different ethnic groups. There is some evidence of higher SWB amongst Indian, Pakistani and Bangladeshi children (Rees and Bradshaw, 2018), but ethnic variations do not seem to be pronounced (Patalay and Fitzsimons, 2016; Rees and Bradshaw, 2018; Rees, 2018). Two UK studies of SWB have found children in Northern Ireland to have

significantly higher SWB than children in the other three countries of the UK (Rees and Bradshaw, 2018; Patalay and Fitzsimons, 2016). Overall, the child characteristics mentioned thus far have only been found to account for a small amount of the variation in children's SWB (Rees and Bradshaw, 2018; Patalay and Fitzsimons, 2016).

Family characteristics

There is evidence of variation in children's SWB according to family structure, with lower levels of SWB amongst children in step- and single-parent families (Rees and Bradshaw, 2018; Rees, 2018; Robson, 2010). However, some studies have found no difference in the SWB of children in single-parent families after controlling for other factors (Patalay and Fitzsimons, 2018; Chan and Koo, 2011). Large family size and young maternal age at birth of first child are known correlates of poverty (Bradshaw *et al.*, 2006; Townsend, 1979), and may therefore exert an influence on children's SWB because of this. On the other hand, having siblings appears to be beneficial for children's SWB (Patalay and Fitzsimons, 2018), thus, it may be difficult to disentangle the positive and negative effects of family size.

Using the British Household Panel Survey (BHPS), Powdthavee and Vignoles (2007) examined whether the mental health of mothers and fathers in two-parent families influences children's life satisfaction and *vice versa*, finding that the psychological difficulties of both parents predicted the lower life satisfaction of girls, but only paternal difficulties predicted the lower life satisfaction of boys. Conversely, the life satisfaction of both boys and girls predicted the mental health of fathers, but not of mothers (Powdthavee and Vignoles, 2008). Also focusing on children in two-parent families, Webb et al (2016) used repeated-measures structural equation modelling to explore reciprocal relationships between parental psychological distress and children's SWB. Similar to Powdthavee and Vignoles (2008),

there were different findings according to the sex of the child, with parental distress affecting the SWB of girls - but not boys (Webb *et al.*, 2017). Clair (2012) used the BHPS to explore parental and child well-being in single-parent as well as two-parent families. The life satisfaction of both parents was associated with children's life satisfaction cross-sectionally, however, only the life satisfaction of fathers predicted children's life satisfaction longitudinally (Clair, 2012).

Explanations for causal mechanisms between parent and child SWB include a direct path whereby the parent or child has an 'empathic reaction' to the emotional well-being of the other (Powdthavee and Vignoles, 2008). This is supported by qualitative research in low-income families that finds children to be empathic to the financial stress experienced by their parents (Mahony and Pople, 2018; Mahony *et al.*, 2017). Not only do children worry about parental financial stress, they also exert agency by moderating their demands and self-excluding from activities that cost money (Ridge, 2002; Mahony *et al.*, 2017). A number of studies – both quantitative and qualitative – have highlighted the greater sensitivity of adolescent girls to parental difficulties, including to psychological distress (VanderValk *et al.*, 2007; Powdthavee and Vignoles, 2008; Webb *et al.*, 2017), financial stress and indebtedness (Mahony *et al.*, 2017; Mahony and Pople, 2018), and marital conflict (Harold and Conger, 1997).

Socioeconomic circumstances
A small number of quantitative studies examine the relationship between children's socioeconomic circumstances and SWB in the UK. In cross-sectional analyses, Knies (2012), Rees and Bradshaw (2016) and Patalay and Fitzsimons (2018) all found small associations between household income and children's SWB. In longitudinal analyses, household income

at age 11 predicted SWB at age 14 in the Millennium Cohort Study (Patalay and Fitzsimons, 2018), and in the UKHLS, there was a significant effect of income on the SWB of children aged 13 to 15 in, but not of younger children (Knies, 2017). Parental job loss was found to have a positive influence on children's SWB at younger ages, but a negative or statistically insignificant association for older children (Powdthavee and Vernoit, 2013). Home ownership, subjective poverty and adult-reported child deprivation were associated with children's SWB in cross-sectional research (Rees and Bradshaw, 2018), and child deprivation also predicted children's SWB longitudinally (Knies, 2017). However, none of these adult-reported measures had a large effect on children's SWB when controlling for other factors.

This study

Measurement is a central theme running through the whole thesis. As outlined above, children's SWB is a neglected area of research in comparison to the adult literature, and as a result, questions remain about measurement. Many studies of children's SWB in the UK consider measurement only minimally, relying either on single-item measures of overall SWB, or multi-domain measures in which higher- and lower-order concepts are combined. This thesis seeks to add to the nascent literature on measurement of children's SWB to deepen understanding of what SWB is measuring in children, and why different measures have different correlates. There is a particular focus on whether children at different timepoints or of different ages, sex and ethnicities conceptualise their SWB in similar ways. This aids the interpretation of findings about children's SWB presented in subsequent chapters of this thesis - as well as in other, published research - and also makes the case for more careful treatment of conceptual and measurement issues in future research on children's SWB.

A related issue is that much of the research on children's quality of life draws conclusions on the basis of adult-reported data, or combines adult- and child-reports without reflecting on how and why there might be differences in these. In addition to detailed consideration of children's SWB (in Chapter 2), measurement is further elaborated in the chapters on socioeconomic circumstances (Chapter 3) and family relationships (Chapters 4 and 5). There are various explanations for discrepancies between children and adult perspectives on jointly experienced circumstances and relationships, but they can be broadly separated into differences that are 'true' and those that relate to measurement error. This thesis considers situations in which the construct under investigation is being measured inaccurately or unreflectively, as well as situations in which differences in perspective between adults and children are genuine and of substantive interest.

A central proposition of Chapter 3 is that children's socioeconomic circumstances are often more complicated than allowed for by research designs that do not take account of intra- and inter-household allocation of resources. This thesis adds to the knowledge base about sharing within and across households, including to investigate whether children are protected from hardship because parents prioritise their needs, whether financial support from extended family members protects children in income-poor households, and whether siblings have access to different resources. It is also possible that, within the same household, children of different ages, sexes, temperaments and biological ties have differential access to material resources and varying relationship quality with other family members. This is explored in Chapters 4 and 5.

An exploration of children's SWB lends itself to the promotion of children's voices. Whilst children can provide insights into every aspect of their lives, there are other ways of

acquiring information about their educational progress, material environments and behaviours. But SWB can only be assessed by the person to whom it relates. In order to understand the factors that influence the quality of children's lives, self-reported data from children about children's perspectives and experiences are placed centre-stage. This gives an additional, valuable perspective to that provided by research on children's lives that focuses on adult's assessments.

This thesis is also underpinned by the principles of interconnected and interdependent lives (Elder, 1998). As exemplified in Bronfenbrenner's ecological model, which is adapted for this thesis in Figure 1, the quality of children's lives are conceived of as being inextricably linked to and rooted within their families and the other social worlds that they inhabit (Bronfenbrenner, 1979). Family relationships represent one of the primary proximal influences on children's lives. However, the ecological model highlights the need to understand the multiple interlocking environments in which children are situated, starting with the nuclear family and extending beyond the household to include friends, the wider peer group, school, extended family, neighbourhoods and wider society. Rather than existing separately of each other, these contexts overlap and interact with each other. Difficulties in one domain of life may be accompanied – or exacerbated - by difficulties in other domains of life.

Although developmental approaches that emphasise person-specific factors, 'old' sociological approaches that emphasise structures and 'new' sociological approaches that recognise children as social actors are often seen as in conflict, in this thesis, I see little benefit to treating these approaches as incompatible, or to understanding children's lives in narrow terms. Children are constrained by structures, including socioeconomic and family

structures, but they also have agency (James and Prout, 2003; Main, 2018), which is often overlooked. The paths that they follow reflect the choices that they make given the available options and the constraints of social circumstances (Grusky and Weisshaar, 2014). There is a plurality of childhoods (Jenks, 2004), and these reflect both social locations and individual differences between children.

Furthermore, in keeping with life course theory, children's lives are also understood as being shaped by their historical contexts, which for the geography and timeframe covered by this thesis would include the 2008 recession, Brexit and the COVID-19 pandemic. However, these period effects - whilst being of relevance to an understanding of children's SWB - are not centre stage to this analysis and are considered only insofar as they can be discounted, for example, by controlling for the wave of the survey. Of more relevance are the types of life events – such as a change in socioeconomic circumstances or family structure - that connect children's fates and misfortunes to that of their parents (Elder, 1998; Conger *et al.*, 1999). These are explored in detail throughout the thesis.

There are only a few UK datasets that contain relevant questions of children that researchers can draw on to evaluate children's SWB and associated factors. The two main sources of data are the UKHLS and the Millennium Cohort Study (MCS), each with different merits and shortcomings. As a cohort study, the MCS contains detailed information about different aspects of children's lives relevant to their age and stage of development. However, different waves of the study are undertaken several years apart (there is currently data available on children at 9 months, and aged three, five, eight, eleven, fourteen and seventeen years of age). Thus, it is not a good source of information on factors relevant to children's lives at ages other than those studied, and the gaps between fieldwork periods mean that changes

experienced by children between waves may not be well documented. In comparison, the UKHLS is well suited to study children of every age from 10 years upwards, and the annual fieldwork period means that children can participate at regular intervals allowing for comparison of their circumstances over two or more consecutive years. However, the interview burden of a survey that interviews every member of the household once a year is high, thus, it is not possible to ask children about every aspect of their lives or at the same level of detail as the cohort studies. Nonetheless, the range of information contained within the UKHLS from multiple respondents within the household (including siblings) about different aspects of children's lives, including a rich set of questions about children's relationships with members of their immediate family, and with regular follow-up and coverage of children of different ages make this an excellent dataset with which to investigate children's socioeconomic circumstances, family relationships and SWB.

This thesis is entirely focused on the UKHLS. Other studies of children's SWB have made use of this study (e.g.Rees, 2018; Clair, 2012; Wolke and Skew, 2011a; Knies, 2017; Knies, 2012; Webb *et al.*, 2017), however, this is the first to draw on the first eleven waves of the youth survey data. As the UKHLS is representative of the UK population, the findings of this thesis are generalisable to the UK population of children. The sample is also large enough to consider sub-group differences that would not be possible in other studies, such as the comparison of specific ethnic groups, as described in more detail later in this chapter. As children join the youth survey at the age of 10 and move on to the adult survey when they are 16, the sample is constantly changing. Thus, despite being longitudinal, much of the value of the UKHLS youth sample is in the pooled cross-sectional sample.

Overall research aims

The analysis in this thesis addresses four main research aims related to the introduction presented thus far.

1. To identify the best way of representing children's SWB with measures contained within the UKHLS and test their validity and reliability across sex, age, ethnicity and time

2. To identify child-centred measures of socioeconomic disadvantage in the UKHLS and explore their associations with children's SWB

3. To consider complexity in respect of children's family structures and how the stability, formality, social support and socioeconomic circumstances of different structures are associated with children's SWB

4. To compare child and adult perspectives on the quality of children's family relationships and explore their associations with children's SWB

Overall conceptual framework

As explained above, the conceptual framework for this thesis is underpinned by a combination of a new sociology of childhood perspective – which recognises that children are social actors and, within the constraints of their social circumstances, make choices about the paths that their lives take – and a developmental, life course perspective that recognises the interconnected nature of children's lives with proximal others. Figure 1, which is an adapted version of the microsystem at the heart of Bronfenbrenner's ecological model, depicts the proximal spheres of influence that are most relevant to children's SWB, and the ways in which they relate to each other (the mesosystem) (Bronfenbrenner, 1979).

Figure 1: Bronfenbrenner's ecological framework: the microsystem [adapted]

Socioeconomic circumstances

Family
Family structure
Relationships with parents,
siblings & extended family

Child
age, sex, ethnicity

Child
SWB

personality, genes

Friends and the peer
group

School and teachers

Neighbourhood
Quality, deprivation, crime
and safety

Socioeconomic circumstances
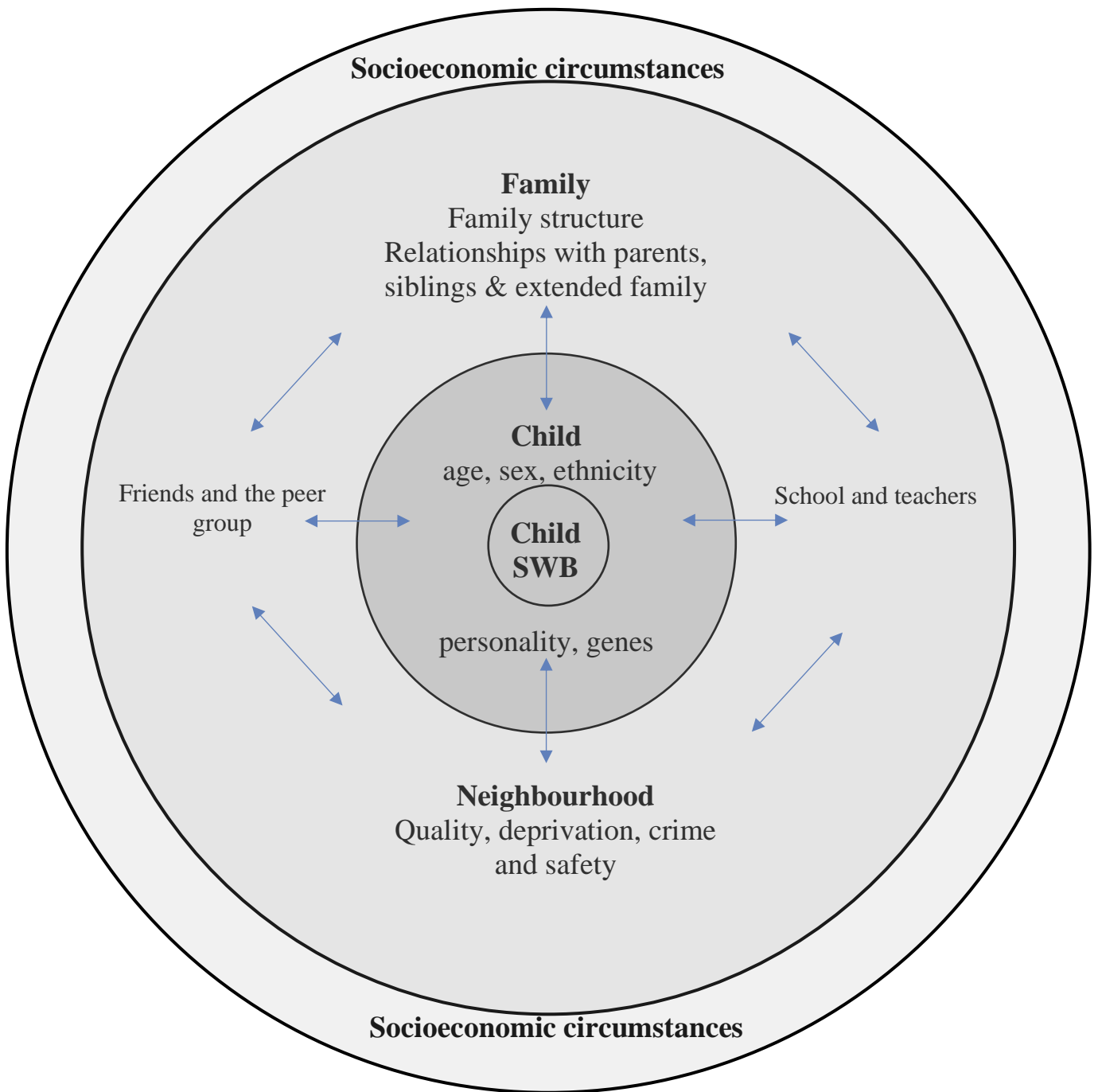
In the centre is the child, for whom there are individual differences in respect of age, sex and

ethnicity, and unobserved differences in respect of personality, outlook, genetic inheritance

and other factors. All of these factors are expected to influence the child's SWB, although

measurement is central to understanding causal pathways, as different aspects of SWB may

have different salience to children with different characteristics, and unobserved differences

between children need to be taken into account. Within the microsystem are the proximal influences on children's SWB, most notably, their families, friends, wider peer group, schools and neighbourhoods. Family and neighbourhood influences are presented in larger font as they are explored in detail in this thesis, however, the font size is not intended to convey the relative importance of different proximal influences on children's SWB. In keeping with Bronfenbrenner (1986), in this thesis, the family is considered to be the most influential context.

Socioeconomic circumstances are located within an outer circle (the exosystem) as they are conceptualised as exerting an influence on children through their social relationships with family, friends, the wider peer group, and adults within their schools and neighbourhoods. This is in keeping with Townsend, who defines socioeconomic disadvantage in relation to the circumstances of proximal others and the standards of living that are customary within society (Townsend, 1979). Thus, although in this thesis socioeconomic factors are considered first and foremost in relation to children's immediate family contexts– as this is where they tend to be measured – they are thought to exert an influence on every aspect of the microsystem, including on children's peers, schools and neighbourhoods. The child's SWB is depicted as an inner circle within the child to reflect the child's agency in making sense of and responding to the various proximal influences around them. Different children in similar circumstances have differential perceptions of - and responses to - their environments.

Although not depicted in Figure 1, the macrosystem - which relates to the wider attitudes and cultures that exert an influence on children's lives - and the chronosystem - which captures the passage of time in terms of changes and continuities experienced both within a person and

also within their environment - are also considered to be important, and are considered in various ways throughout the thesis.

Defining children and childhood

There is no universal, cross-cultural consensus on what constitutes childhood and when or how it comes to an end. However, in the UK, childhood is generally considered to last until the age of 18, at which point children are treated as adults by the law, for example, in relation to the criminal justice system and their entitlement to vote, amongst other things. Although the whole span of childhood from birth to 17 is of relevance to the topics explored in this thesis, the age range considered is constrained by measurement issues both in respect of what is feasible and what data is available. As the central concept under investigation is a cognitive judgement about the quality of one's life, there are cognitive considerations related to the age of children who can be expected to provide a reliable response. It has been argued that 'with special care' children can complete self-reported questionnaires from the age of 7 onwards as at this stage of development they start mastering 'systematic thought using multiple pieces of information' (de Leeuw, Borgers and Smits, 2004). However, to take part in the youth survey of the UKHLS, which is the primary source of information for this thesis, children have to be at least 10 years of age, and at age 16, they transition from the youth to the adult survey in which they are asked a different set of questions. Thus, the age range for this analysis is 10 to 15 years.

Defining child-centredness

In addition to the concept of SWB, which has been described above, there are three terms that are central to this thesis and require definition: child-centredness, child-reporting, and the child as the unit of analysis.

Firstly, exactly as implied, a measure that is *child-reported* is one in which children give a response. This means that I differentiate - and give precedence to - questions that are asked of children from those that are asked of adults who live with them, such as parents and carers, or know them, such as teachers. This is an important distinction because when questions about children's thoughts and feelings are asked of adults, which is common practice in research on children's outcomes, there is likely to be measurement error. No matter how close the relationship between adult and child, it is not possible for one person to know exactly what another thinks and feels. Thus, although adult reports of children's emotions and behaviours may contribute additional insights to our understanding of children's well-being, they are measuring something quite distinct from children's self-reports.

In one UK study of children's mental health and SWB, child-reported SWB was found to be a better predictor of subsequent depressive symptoms than parent-reported mental health symptoms, leading the authors to conclude that there is a 'chasm between self-reports and parent-reports' (Patalay and Fitzsimons, 2018). In another study of time-varying and time-invariant dimensions of depression, children's reports about temporal changes were observed to be 'completely different from what parents, peers, and teachers are reporting' (Cole *et al.*, 2017). However, it is important to clarify that my preference for self-reported data from children only applies when the concept in question relates to the child's thoughts and feelings. For example, it makes little sense to select a child-reported measure of low household income – or a proxy for this such as eligibility for or receipt of free school meals (FSM) - over an adult-reported one when the latter is available since there would likely be greater measurement error in using child-reported over adult-reported data.

Secondly, I focus on whether *the child is the unit of analysis* to acknowledge that there is a difference between indicators of the circumstances of the household and of the child, and that sometimes in the way data are collected, children can be 'hidden' within their families (Matthews, 2007). Inherent to this are questions about intra- and inter-household sharing. An example of intra-household sharing is the well-evidenced finding that parents in poor households often forego their own needs to prioritise those of their children. Parents are known to cut their own expenditure on clothing, social activities and food intake, in order to ensure that children do not miss out on these items (Pemberton, Sutton and Fahmy, 2013; Main and Bradshaw, 2015). In relation to inter-household sharing, a focus on a single household can obscure the fact that relatives and friends outside the nuclear family may pay for the more costly items that a child wants – such as a bicycle, a mobile phone or a holiday – when these items cannot be absorbed into constrained budgets (Mahony *et al.*, 2017). Grandparents appear to play an important role in providing financial support such as this, especially in lone-parent families (Ridge, 2002). Relatedly, children within the same household may have differential access to material items if they have different non-resident relatives from each other, or are allocated items on the basis of individual characteristics such as their age and sex, or the quality of their relationship with the resource-provider in question.

Thirdly, wherever possible I draw on research that is *child-centred* to focus on aspects of life that are highlighted by children in qualitative research as important to their quality of life. Much can be learned from qualitative studies that have asked children directly about their experiences of living in constrained circumstances (Matthews, 2007). In contrast, I use the term 'adult-centred' to refer to factors that research has shown to be important for adults and are, therefore, assumed to be equally relevant for children. Adult-centred measures provide an important, contextual understanding of children's circumstances, but they do not always

tally with children's accounts of what is needed for social participation and an acceptable standard of living (Main, 2013).

Data and methods

Understanding Society: the UK Household Longitudinal Study

This analysis draws on data from Understanding Society: the UK Household Longitudinal Study (UKHLS), which was initiated in 2009 with a sample of approximately 40,000 households (University of Essex Institute for Social and Economic Research, 2022). The UKHLS sample was designed to represent the UK population and includes a General Population Sample (GPS), two ethnic minority and immigrant boost (EMB and IEMB) samples, which were introduced at Wave 1 and Wave 6, and the original British Household Panel Study (BHPS) sample. Sampled households are interviewed every year, but the fieldwork period covers two years. As the UKHLS has a multi-stage sampling design, it is necessary to take account of the stratification and clustering of households, as well as the non-response and attrition of respondents. These are described in more detail below.

An advantage of using the UKHLS for research into children's SWB is that it is possible to match data from children with information about their family's circumstances provided by the adults with whom they live. An annual youth survey invites all children aged 10 to 15 living in participating households to complete a self-completion questionnaire. The youth questionnaire contains questions about children's SWB, relationships with family and material possessions, which are central to this thesis. The adult and household questionnaires also include detailed information about the socioeconomic circumstances of households and the nature and quality of relationships between different household members. Furthermore, the two ethnic minority boost samples make it is possible to distinguish between children

who have a White ethnic background and those who are Black Caribbean, Black African, Indian, Pakistani, Bangladeshi, Mixed or from another minority ethnic group. This is a strength of the UKHLS, since prior research has mixed findings about the SWB of children from different ethnic groups (Patalay and Fitzsimons, 2016; Patalay and Fitzsimons, 2018; Goswami, 2014), with some evidence of higher SWB for children in some ethnic groups (e.g. Black African, Indian) and lower SWB for children in other ethnic groups (e.g. Black Caribbean, Mixed).

There are now eleven waves of data available, with 39,752 observations of 10 to 15-year-olds having participated in the youth survey, which relates to 14,354 children. The maximum number of waves that children can participate in the youth survey is limited by the age range for the survey. Nonetheless, 1,044 children participated in six or seven consecutive waves, and 10,004 children participated in at least two waves, generating a substantial longitudinal sample.

Representativeness of the UKHLS

This thesis follows Benzeval et al (2020) in considering survey representativeness to have two main purposes: firstly, to allow for inferences to be drawn about the target population - in this case, all children living in the UK - and secondly, to provide large enough samples to support analyses of subpopulations of interest such as children from ethnic minority backgrounds or those within the care system (Benzeval *et al.*, 2020, pp. 6-7). In line with these two purposes, the UKHLS was designed to be representative of the UK population in 2009, but also to over-sample some sub-populations that would otherwise be represented in small numbers if a simple random sample were drawn, including ethnic minorities and people living in certain geographical regions (e.g. Northern Ireland).

The main UKHLS sample comprises a General Population Sample (GPS), which in England, Scotland and Wales is clustered for cost effectiveness. The GPS is also stratified by region, social class and population density in order to enhance the representativeness of the sample and, therefore, the precision of estimates. Within each of the resulting 108 strata, systematic random sampling was used to select 18 postal addresses from within 2,640 primary sampling units (PSUs) based on postal sectors. In Northern Ireland an un-clustered, simple random sample was drawn, with selection probability approximately twice as high as in the GPS. In addition to the GPS, an ethnic minority boost sample targeted ethnic minorities from wave 1. Additionally, to reflect new immigration to the UK and the fact that ongoing participation of some ethnic minorities had declined over time, a further Immigrant and Ethnic Minority Boost (IEMB) sample was introduced in wave 6 of the survey (Lynn *et al.*, 2018). The IEMB contains over 6,000 adults from all ethnic minority groups, in addition to over 5,500 in the main, nationally representative sample. A review of the representativeness of the UKHLS in 2020 concluded that initial and subsequent response rates are comparable or superior to other UK surveys and that weighted estimates from the UKHLS are comparable to benchmark datasets (e.g. the ONS Annual Population Survey), although it was noted that younger age groups, and some ethnic groups – namely, Indian, Pakistani, Bangladeshi and Black/Black British groups – were slightly underestimated in the UKHLS (Benzeval *et al.*, 2020).

Given the multi-stage sampling design described above, throughout this thesis I have used the *svyset* suite of commands in Stata to take account of the stratification and clustering of households. However, some statistical procedures in Stata do not support the use of these survey commands, thus, in these cases, I make it clear in the text what approach has been taken.

Non-response in the UKHLS

Response and retention rates - including differential non-response amongst different sub-populations - are important data quality considerations in longitudinal studies as they influence the sample size upon which population inference is based and also generate a risk of non-response bias (Benzeval *et al.*, 2020, p. 10). Crucially, non-response bias depends upon there being an association between non-response and the specific variable of interest: if respondents and non-respondents differ with respect to a survey variable, then this will lead to the sample statistic under- or over-estimating the population parameter. However, weighting provides a counterbalance to non-response bias at the person-level by making a non-response adjustment to the weight assigned to each respondent. Weighting also adjusts for selection probability. For this reason, unless otherwise stated, all analysis in this thesis takes account of the non-response and attrition of respondents by using the appropriate weighting variables that are supplied with the dataset. For example, in the calculation of median incomes in Chapter 3, the household weighting variable is applied. Furthermore, for all of the analysis in which multiple waves of data from children are pooled, the youth weighting variables are applied after being scaled for different combinations of waves.

Table 1 below shows the response rates amongst 10 to 15-year-olds to the youth questionnaire within participating households. In each wave, response rates were higher amongst the BHPS and GPS samples, and lower amongst the EMB and IEMB samples (figures not shown). It is notable that there was a drop in response rates in wave 8 of the survey and a continuing decline between waves 8 and 11. One potential explanation lies in interview mode, which for adults increasingly changed from face-to-face to online from wave 8 onwards. Interview mode may also explain the markedly lower youth response rates of 63%

and 58% in waves 10 and 11 since from April 2020 all interviewing moved online due to the COVID-19 lockdown.

Table 1: Response rates for UKHLS youth survey amongst children aged 10 to 15

Wave	1	2	3	4	5	6	7	8	9	10	11
Response rate %	74	74	75	75	75	80	82	72	68	63	58

Non-response also needs to be considered at the item-level and can be problematic if the children (or adults with whom they live) that do not answer particular questions in the survey would give different responses to those who do respond. Mavletova and Lynn (2017) considered the data quality of survey responses from 10 to 15-year-olds in waves 1 to 4 of the UKHLS and found evidence of younger children having higher item non-response rates in all waves considered, boys having higher item non-response rates in waves 1 and 3 (which were described as being less 'cognitively demanding' waves of the survey), and children with lower educated or unemployed mothers having higher item non-response in waves 2 and 4 (which were described as more 'cognitively demanding' waves of the survey that also contained sensitive items on smoking, alcohol and drugs). In their analysis, the individual survey items with the highest non-response rates were open-ended questions (e.g. about amounts of spending money and earned money received), questions about height and weight, and sensitive items about smoking, alcohol and drugs, which had item non-response rates ranging from 19% to 82% (Mavletova and Lynn, 2017, pp. 8-9).

As this thesis does not include analysis of the types of questions that elicited high non-response rates in Mavletova and Lynn (2017), I do not consider item-missingness of child-reported questions to be a major concern. For the questions that I have analysed, there were generally low levels of missingness, with item non-response rates of 0.8% to 1.0% for the SWB questions and 0.4% to 2.3% for the child-reported questions about socioeconomic and

neighbourhood circumstances. The highest levels of 'missing' data related to Chapter 5, which considers the quality of children's relationships with different family members. However, in most cases, a lack of a substantive response was due to the non-existence of the relationship in question. For example, for the two questions about children's relationships with fathers that are analysed in Chapter 5, between 5.8 and 5.9% of respondents said that they 'do not have a father'. Once these observations were disregarded, there were low levels of missing data (1.9-2.3%). There was a similar pattern for 'only' children in the analysis of sibling relationships in Chapter 5 as 11.4% of children did not have siblings living with them. Once children without siblings were accounted for, missing responses ranged from 1.7% (for physical bullying by siblings) to 3.0% (take belongings from siblings). However, to aid comparisons between the different analyses of relationship quality in Chapter 5, information is provided about the characteristics of children in different analytical samples.

Due to the way that demographic information was collected - and the availability within the UKHLS data files of derived variables using data from multiple sources to resolve inconsistencies - there were low levels of missing data on age, sex, ethnicity and household composition. There were also generally low levels of missing data for the adult-reported data (Fisher *et al.*, 2019), with a few notable exceptions. Income, which had high levels of non-response at the interview stage, is imputed by the UKHLS research team prior to release, thus there are income estimates for all households (ISER, 2021). The deprivation scale developed in Chapter 3 had relatively low rates of item non-response for individual items (ranging from 0.6% to 9.5%), however these combined to generate a high rate of non-response (20.4%) for the scale as a whole. For this reason, analysis of the deprivation scale in Chapter 3 made use of multiple imputation techniques to ensure that the findings remained substantively the same with missing cases included.

Missing data strategy

Various strategies are employed in this thesis to address missing data at the item-level, namely, listwise deletion, assigning missing responses to a specific category, using data from multiple respondents and statistical techniques that account for missing data. For the descriptive and regression analyses presented throughout the thesis, listwise deletion is used. Given that there are low levels of missing data for the majority of the variables included in these analyses - as described above and in more detail in the relevant chapters – missingness is anticipated to cause minimal bias to the estimates. There is no established threshold for the level of missing data that is defensible with respect to statistical inference, however, a commonly used cut-off is 5%, which is higher than the item non-response rates of almost all of the measures used in this thesis.

In each chapter, I present a 'missing data' section to outline whether and how the SWB and characteristics of children that are included in the analytical samples differ from those that are not included. The results of this analysis offer reassurance about the strategy of listwise deletion. In Chapters 3 and 4, there were no statistical differences in the SWB of children included or missing from the main analytical samples. The same is true of the samples used for the analysis of the child-reported socioeconomic measures in Chapters 3 and 4, except that in Chapter 4, the proportion of children with low overall SWB was fractionally higher amongst those included in the sample compared to those missing. There were small differences, however, for the analytical sample used for the exploration of the deprivation measures in Chapter 3, with children included in the analytical sample reporting slightly higher SWB than children missing from the analytical sample. As a result of these differences as well as the high rate of non-response for the deprivation scale as a whole, I used multiple imputation techniques as a robustness check for all of the findings relating to deprivation in

Chapter 3 and found the results to be substantively the same (more detail given in Chapter 3 and Appendix 1). There were also small differences in the analytical sample relating the grandparental help measures presented in Chapter 4, with children missing from the analytical sample marginally ($p<0.1$) more likely to have low overall SWB than those included, although there were no significant differences in 4-domain SWB scores. As a result, the discussion of the findings relating to grandparental involvement in children's lives reflects the need for caution to be exercised in interpretation.

The use of specific categories to 'mop up' observations with non-response at the item-level was minimal; however, this was a key strategy for dealing with missing information on children's ethnicity. Although only 0.2% of observations of children had missing information for ethnicity, this data was not missing at random as most (89.9%) related to children living with neither biological parent and, as a result, one in ten (9.7%) children in this family structure had no ethnicity information. In order to retain these children in the analytical samples, all children for whom ethnicity was missing were added to the 'other ethnicity' category.

Another strategy used to minimise missing data for adult-reported indicators of socioeconomic circumstances - such as whether adults living with children faced financial difficulties or felt embarrassed about low income - was to substitute data from more than one household member. Given that there were especially low levels of missing data for mothers, the mother's view was used if available, with data from the father or household reference person substituted if not. The same approach was taken for all questions asked of adult respondents where it was possible to have different responses from the different adults with whom children live.

In other analyses used throughout the thesis, it was possible to draw on statistical methods that take account of missing data directly. For example, the CFA and SEM analysis presented in Chapters 2 and 5 use the maximum likelihood with missing values (MLMV) option in Stata to take account of missing values. The latent class analysis in Chapter 5 – which uses the gsem commands in Stata - also takes account of missing data. Comparison of the estimates generated by these techniques with those derived from methods that do not take account of missing data increase confidence in the results.

Methods used in this thesis

This section gives a short overview of the methods used in the thesis as a whole to explain the thinking behind their selection. A more detailed description of each method used is then included in the relevant chapters. As mentioned above, unless otherwise indicated, all analysis takes account of the complex survey design of the UKHLS – specifically, clustering and stratification - and uses weights to account for non-response at the unit-level. As most of the analysis in this thesis involves large sample sizes, the level used to identify statistically significant findings is the 95% confidence level ($p<0.05$), which is the standard cut-off used by most comparable research. In the tables and figures, statistically significant findings are indicated with asterisks, with one asterisk indicating significance at the 95% confidence level, two asterisks indicating significance at the 99% confidence level, and three asterisks indicating significance at the 99.9% confidence level. However, in recognition of the fact that the 95% confidence level is an arbitrary cut-off, and that I do not present standard errors or confidence intervals in most of the analysis, in places I discuss findings that are marginally significant ($p<0.1$) if the analysis relates to a small sample or subgroup. All analysis was carried out in Stata 16.

Most of the analysis in this thesis draws on the first eleven waves of the UKHLS and combines these into one pooled sample. Even though the sample size of the UKHLS is large, attrition over time has led to an initial youth sample of approximately 5,000 10 to 15-year-old participants in waves 1 and 2 reducing by more than half to just over 2,000 in wave 11. Given the desire in this thesis to analyse the experiences of children in different sub-groups - such as those in eight different ethnic groups, or in six different categorisations of family structure – a pooled sample is necessary to ensure there is sufficient power to detect effects of interest. Much of Chapters 3 and 4 draws on this pooled sample, using linear and logistic regression modelling to explore cross-sectional associations between socioeconomic factors, family circumstances and children's SWB. To take account of there being multiple observations from some children, robust standard errors are used. Furthermore, in order to discount any bias caused by period effects, survey waves are included as control variables in all multivariate analysis.

These cross-sectional techniques are useful for exploratory analysis with the largest possible sample size. However, conclusions generated by cross-sectional analysis about the causes of SWB are necessarily speculative as the contemporaneous measurement of variables does not take account of the sequencing of events. Longitudinal analysis can help with causal inference by highlighting events or circumstances that are temporally prior to observation of children's SWB. This does not always result in clear-cut conclusions, but it can add to the accumulation of evidence about whether and how relationships may be causal. The longitudinal methods used in Chapters 3 and 4 – fixed and random effects – recognise that there are multiple observations of children at different timepoints that are 'nested' within the child. As well as taking account of the time ordering of events, fixed effects modelling can

also take account of time-invariant, person-specific factors that are unobserved such as children's genetic inheritance or stable personality traits, or unmeasured aspects of children's family, school or neighbourhood contexts that do not change over time. Given that stable traits – such as personality, disposition and outlook - are theorised to exert an influence on individual SWB, fixed effects models are a useful technique that can strengthen conclusions about causal relationships of interest.

In addition to benefiting from multiple observations of children in the UKHLS, this thesis also takes advantage of there being families with more than one sibling taking part in the youth survey. In Chapter 4, the multilevel analysis recognises that, for some families, there are multiple observations nested within multiple siblings, who share some aspects of the family context. Thus, unmeasured aspects of children's individual and family contexts can be disregarded by using statistical methods that isolate the effect of changes over time, or differences between siblings, to focus on the main effects of interest.

Finally, given the focus in this thesis on conceptual and measurement questions, Confirmatory Factor Analysis (CFA) and Latent Class Analysis (LCA) are used in Chapter 2 and Chapter 5 respectively to investigate the latent constructs of SWB and family relationship quality. A latent variable is a construct whose true value cannot be directly observed or measured - such as SWB, or relationship quality - but which can be inferred from a set of observed, imperfect variables that *are* measurable (Schumacker, 2010). The covariation between observed indicators of a latent variable – such as different domains of children's SWB or different aspects of relationship quality – is explained by the relationship between the indicators and the underlying latent variable, which is the '"true" source' of the covariation (McCutcheon, 1987). Structural equation modelling (SEM) is then used in

Chapter 5 to explore structural relationships between variables of interest, while also allowing for the consideration of questions relating to measurement. SEM is able to capture the complexity of a theoretical model in which multiple variables are inter-related.

Being entirely based on observational data, none of the analysis in this thesis demonstrates causality, and throughout the thesis I am careful to describe findings using language that does not imply that causality has been proven. However, a desire to better understand the causal pathways between different aspects of children's circumstances and their SWB motivates the thesis overall, and therefore the research questions and conceptual diagrams that I present. Furthermore, the statistical methods and approaches that I have used can increase confidence in the plausibility of some of the relationships found being causal. A number of the Bradford Hill criteria are addressed by this analysis, including the consistency, coherence and plausibility of findings given what is known about SWB, or in relation to other outcomes such as children's experience of emotional and behavioural problems; strength of association, particularly in respect of the quality of children's family relationships; and temporality, for all of the analyses considering changes over time in which children's circumstances are observed prior to their SWB (Shimonovich *et al.*, 2020).

A final methodological point is made here about the value to research into children's SWB of reviewing relevant, qualitative literature to generate hypotheses that can be tested with quantitative methods. Qualitative methods are well suited to research that aims to be child-centred and evoke 'a culture of listening' with children (Moss, 2006). One shortcoming of the interdisciplinary nature of SWB research is that studies often build upon and cite research from within their own disciplines, with apparent ignorance of relevant research from other disciplines (Diener, 2009). This divide is further amplified by a distinction between

qualitative and quantitative methods. Relevant qualitative research on children's quality of life is rarely cited in quantitative studies of children's SWB, especially if qualitative studies do not use the language of SWB. Although social research acknowledges the benefits of cross-fertilisation between qualitative and quantitative approaches, in practice studies that combine insights from mixed methods are the exception rather than the rule, as highlighted by Frank Furstenberg:

> After many years of dismissing and disdaining qualitative studies as inferior to more muscular quantitative methods, social scientists in economics, demography, and sociology are finally recognizing the virtues, indeed the necessity, of paying greater attention to data collected from in-depth interviews, observational and ethnographic studies, and clinical research.

(Furstenberg, 2007, p. 430)

A central proposition that I make in this thesis, as outlined above, is that in order to deepen understanding of the causes of children's SWB, research needs to carefully consider children's perspectives. Thus, throughout this thesis, the analysis is informed by both quantitative and qualitative literatures. This includes qualitative research that I have been involved in myself as a researcher (Mahony *et al.*, 2017; Mahony and Pople, 2018; Pople, 2022; Main and Pople, 2011; Abdallah *et al.*, 2014), because the perspectives of children that I have heard first-hand have had an influential role in the research topics that I have elaborated in this thesis.

Sample characteristics

Every chapter in this thesis draws on Waves 1 to 11 of the UKHLS, covering the fieldwork periods of 2009/11 to 2019/21. The number of children participating in the youth survey at each wave is shown in Table 2. In each fieldwork period, children who have turned 10 are invited to join the youth sample, while children who have turned 16 leave the youth sample to join the adult sample. There were also boosts to the sample when the EMB and IEMB (described in Chapter 1) came into effect at Waves 2 and 7. Thus, the considerable difference in sample sizes for Wave 1 (4,889) and Wave 11 (2,090) is due to attrition and the fact that the youth survey relates to a constantly changing sample. The total number of observations for waves 1 to 11 is 39,752, which relates to 14,354 children.

Table 2: Sample sizes for 10 to 15-year-olds, Waves 1 to 11, UKHLS

Wave	1	2	3	4	5	6
Fieldwork period	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016
Sample size	4,889	5,013	4,420	4,037	3,650	3,457
Wave	7	8	9	10	11	
Fieldwork period	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021	
Sample size	3,628	3,266	2,811	2,491	2,090	

Descriptive statistics about the age, sex, ethnicity and family circumstances of observations of children across waves 1 to 11 of the UKHLS are presented here as these characteristics are common to all analyses that use the pooled sample.

Sex and age

There were approximately equal numbers of children in each age band from 10 to 15 years, and equal proportions of girls and boys in the sample, with 50.0% female and 50.0% male. A small number of children whose sex was inconsistently recorded were recoded to the sex that was most often used. Disaggregation by age and sex shown in Table 3 indicates that there

were approximately equal proportions of girls and boys in each age band. There were slightly

smaller proportions of 10-year-olds of both sexes and of 15-year-old boys, however, a chi-

square test indicates no statistical difference in these figures. In the ONS population estimates

averaged over the years 2009 to 2021 (i.e. relating to the years that relate to the fieldwork

periods for waves 1 to 11 of the UKHLS), there was a pattern of slightly higher proportions

of boys than girls overall and in each age group, which is not apparent in the UKHLS

estimates.

Table 3: Proportion of children in each age group by sex, UKHLS and ONS estimates

Age	Female UKHLS weighted %	Female ONS %	Male UKHLS weighted %	Male ONS %	Total UKHLS weighted %	Total ONS %
10	7.8 *(7.8)*	8.2	8.1 *(7.9)*	8.6	15.9 *(15.7)*	16.8
11	8.3 *(8.2)*	8.1	8.4 *(8.4)*	8.5	16.7 *(16.6)*	16.7
12	8.4 *(8.4)*	8.1	8.4 *(8.5)*	8.5	16.8 *(16.9)*	16.6
13	8.5 *(8.5)*	8.1	8.7 *(8.7)*	8.5	17.2 *(17.3)*	16.6
14	8.4 *(8.6)*	8.1	8.5 *(8.4)*	8.5	16.8 *(17.0)*	16.6
15	8.5 *(8.4)*	8.1	8.2 *(8.2)*	8.6	16.6 *(16.6)*	16.7
Age 10-15	49.8 *(50.0)*	48.8	50.2 *(50.0)*	51.2	100.0	100.0

Note: Unweighted proportions for the UKHLS data are in brackets

Ethnicity

The ethnic composition of the youth sample is shown in Table 4, with unweighted figures in

brackets. As mentioned above, the oversampling of certain ethnic groups in the UKHLS

lends itself to the analysis of ethnicity according to eight different ethnic groupings: the

majority group - White - and seven ethnic minority groups - Mixed, Black Caribbean, Black

African, Indian, Pakistani, Bangladeshi and those of other ethnicities (including Arab and

Chinese). The proportions in each of these groups are shown below alongside the ONS

population estimates[1] for people of all ages and for 10 to 19-year-olds (Office for National Statistics, 2021c), as well as the Department for Education (DfE) estimates for school-aged children generated by the school census[2] (Department for Education, 2022). The UKHLS figures were very similar to the ONS estimates for people of all ages in each ethnic group, which is to be expected since the UKHLS sample was drawn to be representative of the whole population. However, in comparison to the ONS and DfE estimates, there appears to be some under-estimation within the UKHLS of children of Pakistani, Bangladeshi and Black African ethnicities, likely due to the younger age profiles of some of these ethnic groups.

Table 4: Proportion of children in each ethnic group, UKHLS and ONS estimates

	UKHLS weighted %	ONS, 2019 All ages %	ONS, 2019 Age 10-19 %	DfE school pupils, 2015-2020 %
Ethnicity				
White	84.7 *(74.7)*	83.9	77.1	74.9
Mixed	4.4 *(5.2)*	1.8	3.7	5.9
Indian	2.4 *(3.7)*	2.8	2.9	3.1
Pakistani	2.6 *(5.7)*	2.2	3.7	4.5
Bangladeshi	1.0 *(3.3)*	1.0	1.8	2.1
Black Caribbean	0.8 *(1.5)*	1.0	1.1	1.1
Black African	2.3 *(3.5)*	2.3	3.8	5.9
Other ethnicity (incl. those with missing ethnicity data)	1.8 *(2.5)*	-	-	-

Note: Unweighted proportions for the UKHLS data are in brackets

The 'other ethnicity' group includes children of Chinese, Arab, other Asian ethnicity (i.e. not Indian, Pakistani, Bangladeshi or Chinese), other Black ethnicity (i.e. not Black African or Black Caribbean) as well as those with missing information on ethnicity, as explained earlier. Table 5 shows the proportions in each of these groups and the comparison estimates from the

[1] The ONS ethnicity statistics relate to England and Wales rather than the UK
[2] The DfE ethnicity statistics relate to England only, and are averaged across the years 2015/16-2020/21

ONS. Given that the 'other ethnicity' group contains children from a range of ethnicities as well as children with unknown ethnicity, this category is included primarily as a way of ensuring children are not lost from the sample, rather than as an analytical grouping. Thus, throughout this thesis, I generally do not refer to findings in relation to this group.

Table 5: Ethnic background of children in the 'other ethnicity' group, UKHLS and ONS estimates

Ethnicity	UKHLS %	ONS, 2019 All ages %	ONS, 2019 Age 10-19 %	DfE school pupils, 2015-2020 %
Chinese	0.1 *(0.2)*	0.6	0.5	0.5
Any other Asian	0.8 *(1.1)*	1.3	1.6	2.2
Any other Black	0.2 *(0.4)*	0.2	0.4	0.9
Arab	0.3 *(0.4)*	0.4	0.7	-
Any other ethnic group	0.2 *(0.3)*	1.4	1.6	1.9
Missing ethnicity data	0.3 *(0.2)*			
Total	1.8 *(2.6)*			

Note: Unweighted proportions for the UKHLS data are in brackets

Household size and number of siblings

The size of the household and number of siblings that children live with is shown in Table 6. Most children have a sibling living in the household with them, but 14.3% of observations are of 'only children'. Table 5 also indicates that a small proportion of children live with people in the household who are likely not their parents (i.e. household size – number of siblings > 2). The specific relationship of children to the other members of the household is explored in detail in Chapter 4.

Table 6: Proportion of children in each household size by number of siblings, UKHLS

	Number of siblings %				
Household size %	0	1	2	3 or more	Total
2	5.3				5.3
3	8.2	9.3			17.5
4	0.5	35.2	4.6		40.3
5	0.1	0.8	20.0	2.0	23.0
6 or more	0.1	0.4	1.0	12.5	13.9
Total	14.3	45.7	25.6	14.4	100.0

Percentages are for weighted data.

Using quarterly data from the Labour Force Survey, the Office for National Statistics estimated that there were 8.1 million families[3] with 14.5 million dependent children[4] in the UK in 2021, and that 24.0% of these children were in one-child families, 47.7% were in two-child families and 28.3% were in families with three or more children (Office for National Statistics, 2021b). However, there are no equivalent statistics for children aged 10 to 15, thus, these figures are not directly comparable.

Family structure

Chapters 2 and 3 use the four typical categorisations of family type used within the literature of two biological parent families, step-parent families, single-parent families and other (i.e. no biological parents) family types. A more nuanced approach is taken in Chapters 4 and 5, which distinguishes between single-parent alone (SPA) families where there are no other adults in the household (excluding adult children) and single-parent extended (SPE) families where there are. Chapters 4 and 5 also distinguishes between step-families where the step-parent arrangement is formalised and informal step-families where it is not. Table 7 shows the proportion of children living in each family structure.

Table 7: Proportion of children in different family structures, UKHLS

Family structure	Chapters 4 and 5 %	Chapters 2 and 3 %
Two biological-parent family	65.5	65.5
Step-parent family formal	8.2	9.7
Step-parent family informal	1.5	
Single-parent alone (SPA) family	21.6	23.1
Single-parent extended (SPE) family	1.5	
No biological-parent family	1.8	1.8

Percentages are for weighted data.

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[3] Families are married, civil partnered or cohabiting couples or a lone parent with at least one child
[4] Dependent children were defined as children living with their parent(s) and either aged under 16 or aged 16 to 18 and in full-time education

The proportion of children in a SPA family (21.6%) and SPE family (1.5%) combined (23.1%) is almost exactly the same as the ONS estimate of children in lone-parent families in 2011 (23.8%) and similar to the equivalent estimate for 2021 (21.6%), which is reassuring as these measures are comparable and the fieldwork period relating to the UKHLS estimates is 2009 to 2021. As the ONS estimates do not distinguish between biological-, step- and adoptive- parents, it is not possible to derive equivalent estimates for the other categories. However, the proportion of children living in a two-biological parent family (65.5%) is similar to the ONS census estimate of children in non-stepparent couple families in 2011 in England and Wales (64.4%), while the proportion of children living in a step-parent formal family (8.2%) is similar to the ONS census estimate of children in stepparent couple families in 2011 in England and Wales (9.3%).

In summary, the UKHLS weighted estimates of age, sex, ethnicity and family structure are in line with comparable population estimates generated by the ONS census data and other sources. This gives confidence in the extent to which the estimates derived from the UKHLS that are presented in this thesis are generalisable to the whole population of children living in the UK. Having set out the rationale, research aims and theoretical frameworks that motivate and guide this thesis, as well as the dataset and methods that are used, I now move on to present the first empirical analysis in Chapter 2, which focuses on the measurement of children's SWB.

Chapter 2: Measuring children's SWB

Introduction

This chapter examines the measures of children's SWB that are available in the UKHLS to consider different approaches to measuring the concept of overall SWB, and the extent to which measures of SWB are valid and reliable indicators across age, sex, ethnicity and time. An introduction to the concept of well-being was presented in Chapter 1. As highlighted already, the focus in this thesis is on children's cognitive evaluations of the quality of their lives - also known as their life satisfaction - because this approach is felt to be democratic, child-centred, to reflect children's own priorities and social comparisons, and capture global, enduring judgements rather than momentary feelings that may pass. In the rest of this thesis, I use the terms life satisfaction and SWB interchangeably since no other measure of SWB is considered.

As the purpose of this chapter is to assess how well different approaches to measurement capture the concept of SWB elaborated in the literature, the next section sets out the conceptual considerations that are felt to be important and reviews the different approaches to measurement that have been taken by others carrying out research into children's SWB in the UK.

Measuring SWB in the UKHLS

There are six child SWB items in the UKHLS: one measuring feelings about life as a whole, and five measuring different domains of well-being: family, friends, school, schoolwork and appearance. These are similar to child SWB items contained within the British Household Panel Study (BHPS) and the Millennium Cohort Study (MCS), and also the Personal Wellbeing Index for School Children (PWI-SC) developed by Cummins and Lau (2005) in

Australia. In each case, children are asked about their feelings about different domains of life as well as about their lives as a whole.

In much of the literature on children's SWB in the UK that draws on the UKHLS, the BHPS or the MCS, these six SWB items are combined to create an overall measure of children's SWB (Patalay and Fitzsimons, 2016; Wolke and Skew, 2011b). However, there are a number of conceptual shortcomings to this approach. Firstly, a 'higher order' measure of overall SWB is joined together with a set of domain indicators that are of a 'lower order'. The researchers that developed the PWI-SC take the view that the domain questions represent 'the first level deconstruction' of a global measure of life as a whole (Tomyn and Cummins, 2011, p. 405), and that these two different levels of SWB should not be summed together. A similar approach is taken with the Multidimensional Students' Life Satisfaction Scale developed by Huebner (1994) whereby a measure of global life satisfaction is conceptualised as being separate from - and of a higher order to – specific domains of life satisfaction (Huebner *et al.*, 2006; Huebner, 1994).

An additional issue for the SWB domain questions in the UKHLS, is that they are not exhaustive in their coverage of the aspects of children's lives known to matter to them. This exemplifies the 'new sociology of childhood' critique of quantitative studies in which adult researchers decide how to measure children's well-being, and questions whether such research is 'actually reflecting children's voices' (Fattore, Mason and Watson, 2017, p. 14). For example, in the UKHLS questions, children are not asked how they feel about their health, leisure, home or the money and the material possessions that they have, despite research showing that these are important domains of life for them (Rees, 2018; Fattore, Mason and Watson, 2017). On the other hand, due to there being questions about both school

and schoolwork in the UKHLS, children's views on 'school life' are effectively double counted (Rees and Bradshaw, 2018).

'Top-down' and 'bottom-up' measurement of SWB

A 'top-down' approach to measuring SWB is possible if just the measure of 'life as a whole' is used, although a single-item measure is not ideal from a statistical point of view. Single-item measures cannot be evaluated for internal consistency as there is only one wording of the question. Thus, when measuring a single item between two timepoints, reliability is confounded with genuine change (Diener, 1984). It would be preferable to measure overall life satisfaction using a multi-item measure such as the Student's Life Satisfaction Scale, which has been shown to have good psychometric properties (Huebner *et al.*, 2006). However, in relation to the adult SWB literature at least, Diener (1984) argues that the validity and reliability of single-item measures of overall SWB are 'adequate if a very brief measure of global well-being is required' (Diener, 1984).

Another option is to take a 'bottom-up' or summative approach by adding together the domain measures contained within the UKHLS. However, a measure that includes all five domains – family, friends, school, schoolwork and appearance - suffers from the conceptual shortcomings described above of poor coverage of domains and an overemphasis on children's feelings about school. It is not possible to address the coverage of the domains given the constraints of the data. Nonetheless, the latter problem is rectified by using a four-domain measure proposed by Rees (2018), which combines family, friends, school and appearance to represent the concept of SWB.

Increasing mean SWB or reducing low SWB

A related analytical consideration - linked to the sort of conclusions for public policy that might be drawn from research on children's SWB - is whether to focus efforts on increasing SWB for all children, or minimising children's misery by reducing the incidence of low SWB (Rees and Bradshaw, 2018; Lelkes, 2013; Binder and Coad, 2011). A hallmark of measures of life satisfaction is that they are positively phrased and consider positive aspects of functioning (Diener, 1984), in comparison to measures of mental ill-health, which are focused on dysfunction. Thus, there is an argument for focusing on how to maximise children's positive evaluations of their lives. There are also practical reasons for considering well-being scores across the whole distribution, including, not least because this is how SWB is measured. There may be important differences in the lived experience of children reporting different scores on a scale that are not captured by dichotomising the scale into low and high SWB.

On the other hand, there may be a stronger moral imperative to improve the lives of children who are suffering than to try and increase the SWB of children who are already happy, as well as additional theoretical arguments for a focus on low SWB. Cummins' Theory of Homeostasis posits that SWB is maintained within a normal range around a genetically inherited 'set-point' (Cummins, 2010). It is only when suffering caused by negative life circumstances overwhelms a person's homeostatic capacity that SWB will drop below a set-point-range. This offers a theoretical reason for the stability and positivity of SWB in individuals and populations. Whether and how quickly a person is able to recover from homeostatic failure is thought to be determined by their capacity for adaptation, the quality of their interpersonal relationships, their sense of purpose in life and the material resources that they have available to them (Tomyn, Weinberg and Cummins, 2015). Empirical evidence

supports the idea that it is difficult to shift the mean SWB of a population upwards, but that substantial improvements can be made for children with low SWB (Tomyn, Weinberg and Cummins, 2015). In a multi-country study of 29 European countries, low SWB varied markedly according to social factors such as unemployment, poverty and social isolation, while high SWB was harder to explain and felt to be 'more of a private matter, with individual strategies and attitudes, hidden from the eye of a policy-maker' (Lelkes, 2013, p. 121).

For the reasons outlined, this thesis considers the whole distribution of SWB as well as the experience of low SWB, and it draws on overall measures as well as domain measures in an attempt to gain a more nuanced understanding of what factors are related to different aspects of children's SWB and why.

Research aims and hypotheses

There are two overarching primary research aim for this chapter:

- To consider alternative conceptual and statistical approaches to measuring children's SWB to identify the best approach(es) to measuring overall SWB within the UKHLS
- To test the extent to which composite measures of children's SWB are valid, reliable and invariant across time, sex, age and ethnic groups

Data and methods

This analysis draws on data from the youth questionnaire from the first 11 waves of the survey. Three pooled samples were created:

- 39,752 observations relating to 14,354 children in waves 1 to 11 of the survey for the CFA and measurement invariance testing according to sex, age and ethnicity

- 9,340 children who participated in two consecutive waves of the survey for the longitudinal measurement invariance testing

- 6,025 children who participated in three consecutive waves of the survey for the longitudinal measurement invariance testing

Methods

Whether children's SWB in different domains taps into an underlying construct of overall SWB is both a conceptual and empirical question. One approach to conceptualising the SWB measures contained within UKHLS is to view them as a set of measures that capture children's well-being in different spheres of life, which are correlated but distinct. This method assumes that there would be an association between satisfaction with family and friends, for example, in much the same way that it assumes that there would be an association between satisfaction with school and a measure of children's behavioural problems. Some of the analysis in this thesis considers SWB in this way, for example, when correlates of SWB are expected to have distinctive associations with different domains of SWB. However, another approach to conceptualising SWB is to view the domain measures as reflective of an underlying construct of overall SWB, and the correlation between the measures as being entirely due to this unobservable, latent construct. This is the approach that is explored in this chapter.

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) and Latent Class Analysis (LCA) – which is used in Chapter 5 of this thesis – are similar in analysing sets of observed variables with the purpose of discerning patterns of covariation that tap into underlying latent constructs. CFA is appropriate for analysing latent variables such as SWB that are not directly measurable but can be estimated via observed indicators such as the six questions about SWB that are asked in the UKHLS. Following Classical Test Theory (Lord, Novick and Birnbaum, 1968), the child's 'true' SWB score is understood as being composed of the score(s) given for observed indicator(s) plus measurement error. When there is a single observed indicator, such as for the SWB measure of 'life as a whole', it is not possible to separate the true score from the error. However, when there are multiple observed indicators, as there are for different domains of SWB, it is possible to estimate the 'true score' on the underlying construct of overall SWB separately from the measurement error.

CFA is a technique that sits within the structural equation modelling (SEM) family of models. In SEM, an *a priori* theoretical model is fitted to the sample data. 'Model fit' then assesses how well the hypothesised model fits the sample data. In an asymptotic distribution, a chi-squared distribution can be assumed. However, when the sample size is very large – as is the case with the UKHLS – a chi-squared test is likely to generate a significant result. This is because it is a test of exact fit that will reject the model if there are small model-data discrepancies, which is often the case in large samples. Kline (2006: 271) also highlights that the chi-squared test can be affected by multivariate non-normality, correlation size and unique variance (Kline, 2016).

As a result, numerous approximate fit indexes have been proposed to supplement the conclusions of the chi-squared test. These tend to evaluate the model fit in either 'absolute' or 'incremental' terms. Absolute fit indexes compare the hypothesised model to the sample data, with an implied reference to a 'saturated' model that exactly reproduces the sample covariance matrix (Hu and Bentler, 1999). Two widely used examples of absolute fit indexes are the root mean square error of approximation (RMSEA) and the standardized root mean residual (SRMR). Incremental fit indexes evaluate the relative improvement in fit of the hypothesised model over that of a 'baseline' model, which is usually 'null' model in which all of the observed variables are uncorrelated, although this assumption is likely to be improbable in most studies (Kline, 2016). One of the most widely used incremental fix indexes is Bentler's Comparative Fit Index (CFI).

Hu and Bentler (1999) recommend a strategy of reporting an absolute fit index like SRMR and RMSEA alongside an incremental fit index like CFI to avoid mis-specifying factor co-variances and factor loadings. In addition, the coefficient of determination (CD) is often reported and can be interpreted in a similar way to R^2, with a value close to one indicating good fit. The following thresholds are recommended:

- RMSEA: a cut-off close to or below 0.06 (up to 0.08)

- CFI: a cut-off close to or above 0.95

- SRMR: a cut-off close to or below 0.08

(Hu and Bentler, 1999, p. 5)

Measurement invariance

It is possible that the structure of SWB depends on demographic factors such as age, sex and ethnicity. If children of different sexes, ages and ethnicities define and evaluate their SWB in

different ways – or prioritise different domains – variation in children's composite scores across these groups may reflect measurement differences rather than true differences in latent SWB. Thus, it is important to compare the factor structure of the measurement model across groups. There are indications that measurement invariance may be an issue for children's SWB. In line with Bronfenbrenner's theoretical framework of proximal and distal influences on children's lives, research has found that domains that are 'closest and most immediate' to people's lives most influence overall SWB (Diener, 1984), however, the proximity and influence of domains may vary for children of different ages, sexes and ethnicities. Furthermore, early research into adult SWB found different structures of domain satisfaction for different age groups (Cutler, 1979).

Testing for measurement invariance involves adding constraints to evaluate whether factor loadings, measurement intercepts and error variances within a model are equal for different subgroups. The first test is whether the factor structure is comparable for all groups. This is referred to as 'configural invariance' and means that factors are common to – and equivalently patterned across – the subgroups. The next test constrains the factor loadings to be equal across subgroups and is called 'metric invariance'. If achieved, metric invariance would mean that each domain of SWB contributes to the latent construct of overall SWB to a similar degree for each subgroup. A third test, described as 'scalar invariance', constrains the intercepts to be equal as well as the factor loadings. If achieved, this would indicate that the latent 'scale' is used in a similar way by different subgroups, and that mean differences in the latent construct of SWB 'capture all mean differences in the shared variance of the items' (Putnick and Bornstein, 2016). Practically-speaking, scalar invariance is required for composite scores across subgroups to be compared in a meaningful way.

The primary method of comparing the fit statistics of two nested models is to conduct a likelihood ratio test. However, since the likelihood ratio test is an exact test that is sensitive to sample size – since small differences between groups can reach statistical significance in large sample sizes – an alternative approach is to assess change in approximate fit statistics such as RMSEA and CFI (Chen, 2007). The rule of thumb proposed by Chen (2007) for sample sizes that are larger than 300 is that a change in the RMSEA statistic should be less than 0.015, and a change in the CFI statistic should be less than 0.01.

Analytic strategy

This chapter proceeds by first presenting descriptive statistics for the children's SWB measures to explore their distributions. Confirmatory Factor Analysis (CFA) is then carried out with different combinations of the SWB measures, followed by multi-group CFA to test measurement invariance across different subgroups: age, sex, ethnicity and longitudinally. As described above, there is a conceptual argument for using the four domains proposed by Rees (2018) – family, friends, school and appearance – to measure the latent construct of overall SWB, thus, CFA is carried out with the pooled UKHLS sample of waves 1 to 11 to test this model. Several approaches to CFA estimation are taken, including accounting for the complex design of the survey, calculating robust and default standard errors, and using both maximum likelihood (ML) estimation and maximum likelihood with missing values (MLMV) estimation to consider missing values. When survey weights, complex survey designs and cluster robust standard errors are included in estimation, Stata does not report approximate fit statistics such as RMSEA and CFI, although it does report the SRMR and CD. When MLMV is applied alongside survey weights, Stata only reports the CD. However, in practice, the approximate fit statistics are the same or very similar for different approaches. Thus, I present the results of the simplest analysis (i.e. ML with no weighting) and the most

complex analysis (i.e. MLMV with the complex survey design taken into account) for
comparison.

Results

Descriptive statistics for all six children's SWB questions for the pooled sample of Waves 1
to 11 are shown in Table 8. These questions are asked on a seven-point scale, presented here
as running from 0 to 6 with higher values indicating higher SWB. As highlighted in Chapter
1, there were low levels of missing data for these variables, ranging from 0.8 to 1.0%. As can
be seen in Table 8 - and the frequency distributions that are shown in Figures 2 and 3 - these
measures are negatively skewed. However, only the measures of relationships with family
and friends fall outside of the acceptable limits for skewness (<2) and kurtosis (<7) proposed
as a rule of thumb (Curran, West and Finch, 1996). For this analysis, low SWB is defined as
being at the midpoint of the scale or lower, which equates to a score of 0 to 3 out of 6. This is
consistent with Tomyn et al (2015), who consider scores on the PWI-SC that are below or
equal to 50 out of 100 as representing homeostatic failure.

Table 8: Descriptive statistics for six measures of children's SWB, UKHLS waves 1-11

% choosing:	Life	Family	Friends	School	Schoolwork	Appearance
0	0.7	0.4	0.5	2.8	1.5	2.1
1	1.3	0.5	0.6	2.3	1.9	3.6
2	2.7	1.5	1.4	4.3	4.7	6.3
3	8.2	3.7	3.7	10.0	12.0	13.9
4	18.5	8.5	10.6	18.6	25.9	24.0
5	35.4	22.8	31.0	29.0	35.1	28.6
6	33.2	62.6	52.2	32.9	19.0	21.6
% missing	1.0	0.9	0.8	0.9	0.8	1.0
Mean	4.8	5.4	5.3	4.6	4.4	4.3
SD	1.2	1.0	1.0	1.5	1.3	1.5
Skewness	-1.3	-2.2	-2.0	-1.3	-1.0	-0.9
Kurtosis	4.9	8.5	8.1	4.3	4.2	3.4
% low score ($<=3$ out of 6)	13.0	6.1	6.2	19.5	20.0	25.9

The proportions and means are for weighted data.

Figure 2: Frequency distributions for 6 measures of children's SWB
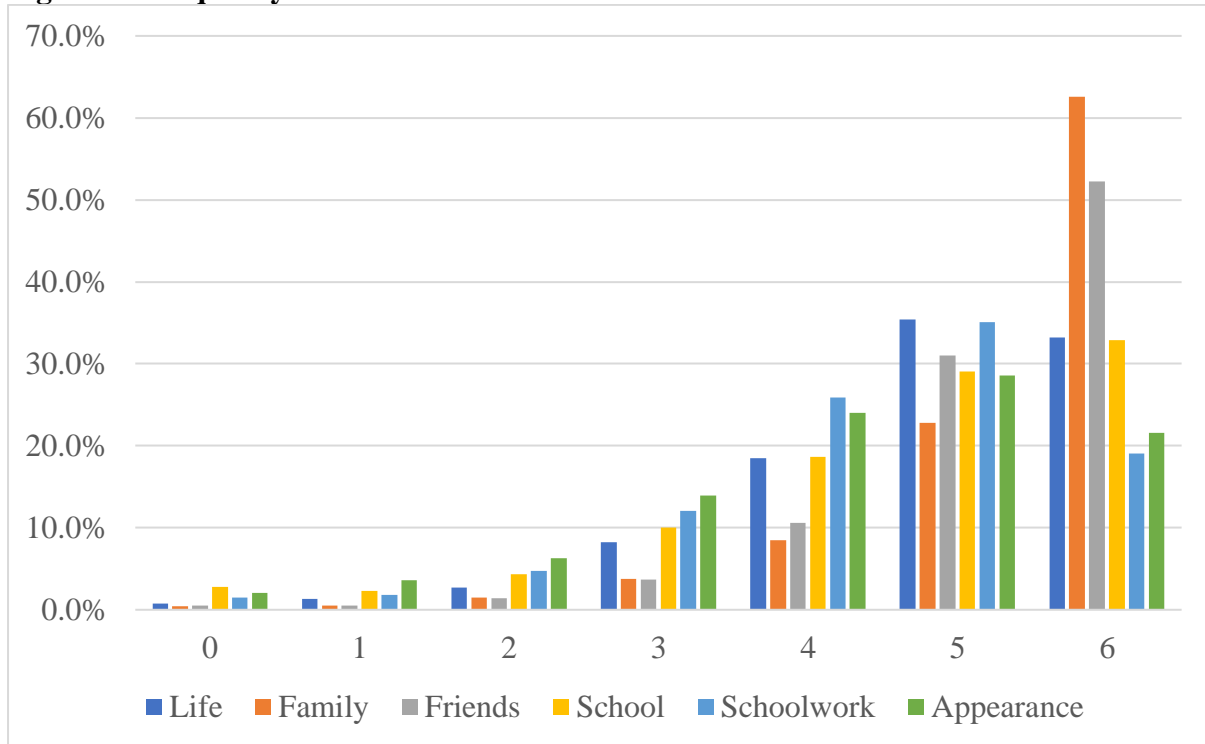
Figure 3: Frequency distribution for 4-domain measure of children's SWB
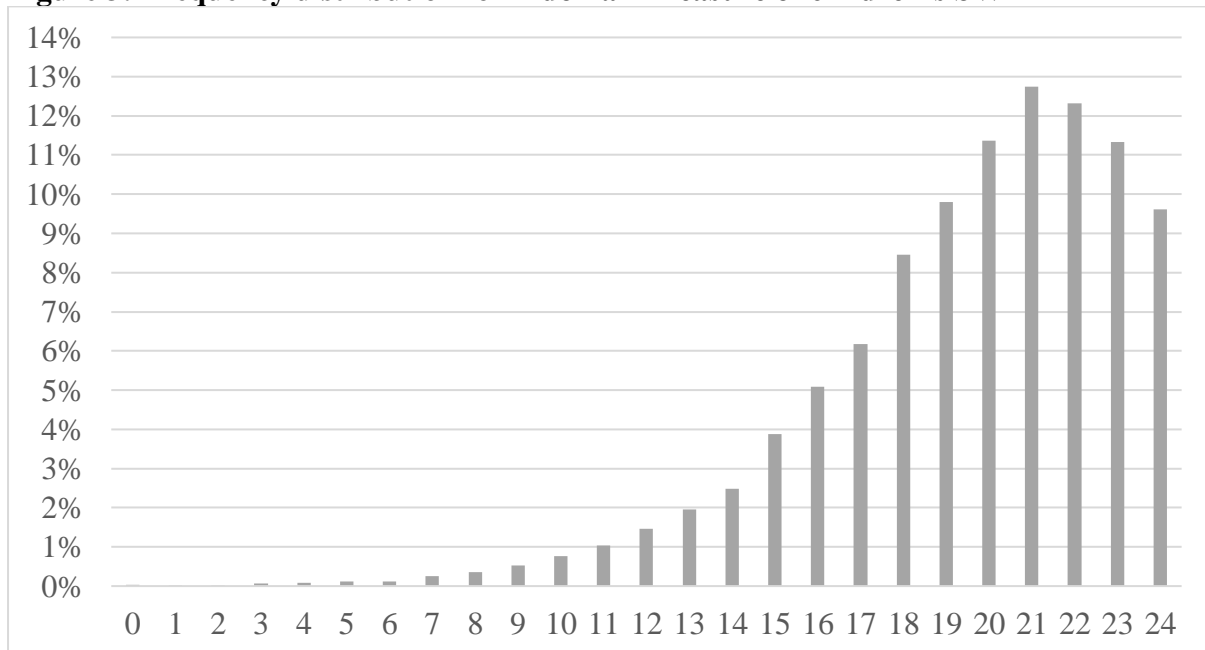
Table 9 shows the correlations between the six different measures of SWB in the pooled

cross-sectional sample. As can be seen, the highest zero-order correlations are between life as

a whole and the domain measures, which are above 0.5 for appearance (0.54) and family

(0.51). Amongst the domain measures, the highest correlation is between school and schoolwork (0.47), and the lowest is between friends and schoolwork (0.26).

Table 9: Correlations between SWB measures

	Life	Family	Friends	Appearance	School
Family	0.51				
Friends	0.41	0.35			
Appearance	0.54	0.36	0.32		
School	0.44	0.32	0.36	0.33	
Schoolwork	0.42	0.29	0.26	0.35	0.47

Furthermore, Table 10 shows that once a set of controls are included to adjust for the wave of the survey as well as children's age, sex, ethnicity and country of residence, children's satisfaction with their family relationships and appearance are the strongest predictors of the measure of overall SWB.

Table 10: Regression of overall SWB onto domain measures

Variable (reference category in brackets)	Regression coefficients
Family	0.32***
Friends	0.15***
Appearance	0.27***
School	0.11***
Schoolwork	0.13***
Intercept	-0.08
N	38,706
R^2	0.49

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Model also includes age, sex and ethnicity of the child, wave of survey and country.

Confirmatory factor analysis

Confirmatory factor analysis is first carried out with the four-domain measure proposed by Rees (2018), which combines family, friends, school and appearance to represent the concept of overall SWB. For comparison purposes, a model including schoolwork in place of school is also tested as this avoids the conceptual problem described earlier of an overemphasis on school life that arises when both items are included. The results, which are shown in Figure 4, confirm that both models reach acceptable thresholds for goodness of fit, however, the model containing school outperforms the model containing schoolwork on all approximate fit indices. This finding fits with qualitative research with children that indicates that school is a key location for children's social relationships with friends, teachers and peers, as well as an environment in which lessons, schoolwork and exams take place (Fattore, Mason and Watson, 2017; Rees and Pople, 2006). Thus, it makes sense that the broader sphere of relationships and experiences conveyed by the model including school is a better statistical fit than the conceptually narrower model that includes schoolwork.

The shortcomings of using a five-domain model or a composite measure of SWB with all six indicators available in the UKHLS are evident in the figures below. As can be seen in Figures 5 and 6, two of the fit statistics for the six-indicator composite measure of SWB (CFI of 0.945 and RMSEA of 0.096) and the five-domain measure of SWB (CFI of 0.949 and RMSEA of 0.094) did not meet the recommended threshold for acceptable fit. In line with Rees (2018), the four-domain model shown in Figure 4 is found to be both conceptually and statistically superior to the five- and six-item measures and will be used in the subsequent analysis.

Figure 4: Confirmatory factor analysis of 4-domain model of SWB

Simple ML model, no weighting, default SEs

With school: With schoolwork:
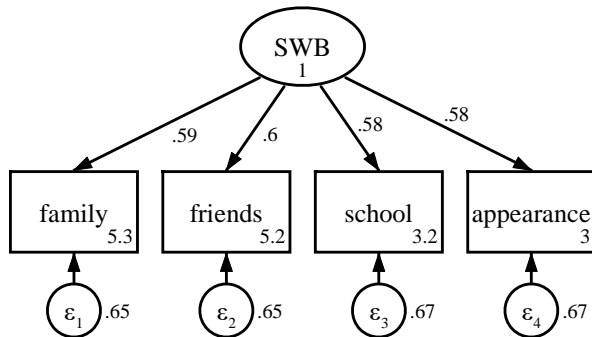
Chi^2= 161.83; df= 2; p<0.001;   Chi^2= 181.29; df= 2; p<0.001;

RMSEA=0.045 (0.040-0.051); CFI=0.993;   RMSEA=0.048 (0.042-0.054); CFI=0.991;

SRMR=0.013; CD=0.674   SRMR=0.015; CD=0.66

MLMV model, robust SEs and survey settings to account for clustering, stratification and sampling weights
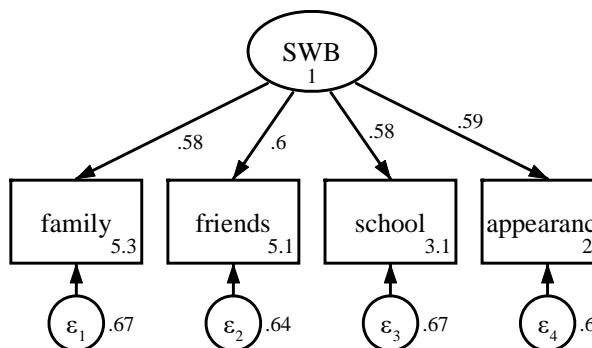
With school: With schoolwork:
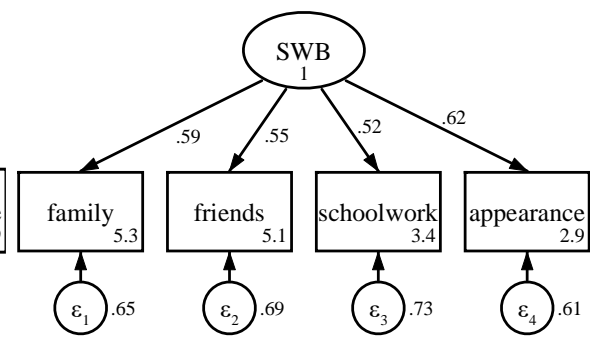
CD=0.677   CD=0.664

Standardized loadings shown. All factor loadings are significant at the 99.9% confidence level. UKHLS, Waves 1 to 11.

Figure 5: Confirmatory factor analysis of 6-indicator model of SWB

Simple ML model, no weighting, default SEs: Chi^2= 3220.15; df= 9; p<0.001; RMSEA=0.096 (0.093-0.099); CFI=0.945; SRMR=0.040; CD=0.816
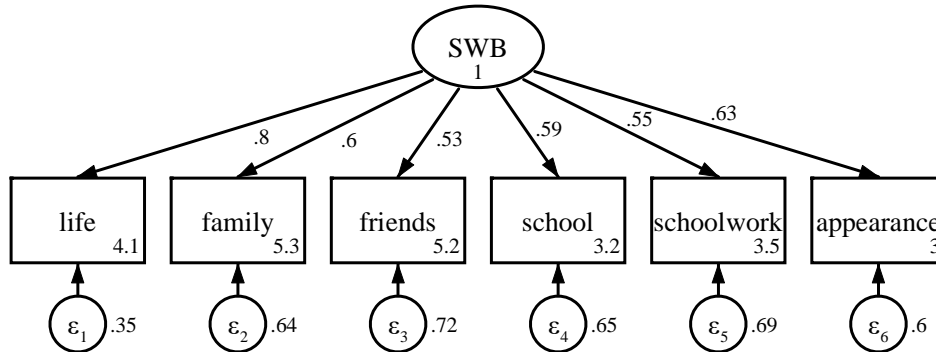
MLMV model, robust SEs and survey settings to account for clustering, stratification and sampling weights: CD=0.820
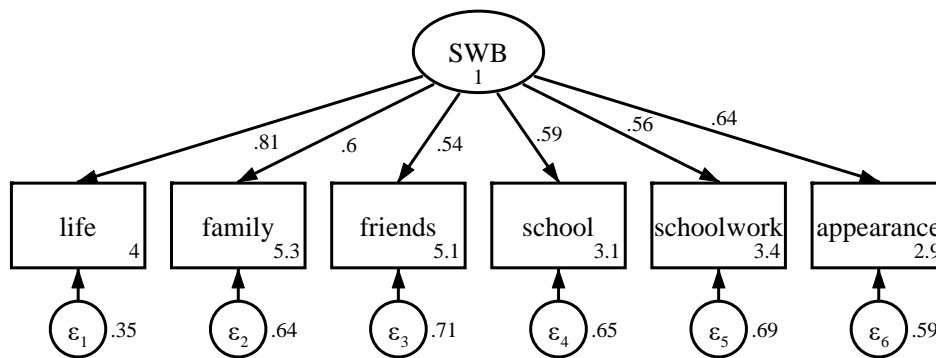
Standardized loadings shown. All factor loadings are significant at the 99.9% confidence level. UKHLS, Waves 1 to 11.

Figure 6: Confirmatory factor analysis of 5-domain model of SWB

Simple ML model, no weighting, default SEs: Chi^2= 1734.46; df= 5; p<0.001; RMSEA=0.094 (0.091-0.098); CFI=0.949; SRMR=0.036; CD=0.728
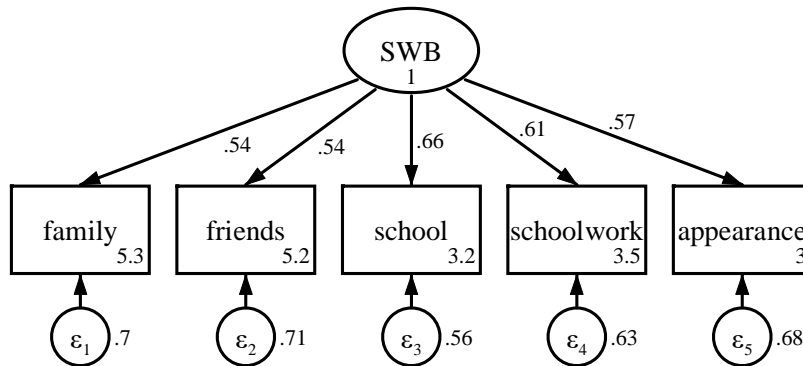
MLMV model, robust SEs and survey settings to account for clustering, stratification and sampling weights: CD=0.732
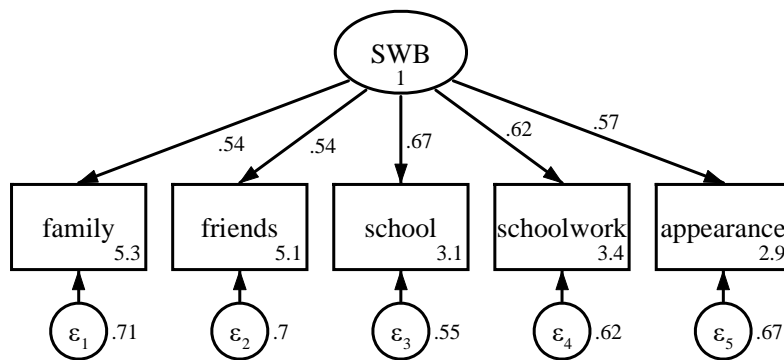
Standardized loadings shown. All factor loadings are significant at the 99.9% confidence level. UKHLS, Waves 1 to 11.

Sub-group differences in the structure of SWB

Tables 11, 12 and 13 show the model fits and tests of measurement invariance for age, sex and ethnicity, as well as the standardised factor loadings and intercepts for the 4-domain model when these were freely estimated (i.e. the configural invariance model). The configural invariance specification fitted well across the subgroups. Focusing first on sex, Table 11 demonstrates a similar pattern of factor loadings for boys and girls when these were freely estimated, although there were some rank differences, with the highest factor loading

being friends for boys and school for girls. Nonetheless, the metric invariance model revealed

little loss of fit once the factor loadings were constrained to be equal: the RMSEA loss of fit

(0.002) was less than 0.015 threshold proposed by Chen (2007), while the CFI loss of fit

(0.007) was less than the proposed 0.01 threshold. This means that the four domains of SWB

are interpreted in the same way and are valid indicators of overall SWB for both boys and

girls. However, the freely estimated intercepts were lower for girls, especially for appearance,

which gives a first clue that scalar invariance may be an issue. Indeed, the scalar invariance

model, when intercepts were constrained to be equal, led to an unacceptable loss of fit on

RMSEA (0.025) and CFI (0.042). Inspection of the modification indices revealed that the

main issue for the scalar invariance model was constraining the appearance intercept to be

equal for boys and girls. When this was freely estimated, partial scalar invariance was

achieved.

Table 11: Measurement equivalence, factor loadings and intercepts of children's 4-domain SWB by sex

	Chi^2	df	RMSEA (90% CIs)	CFI	TLI	SRMR
Configural	199.66***	4	0.050 (0.044-0.056)	0.991	0.973	0.014
Metric	364.38***	8	0.048 (0.044-0.052)	0.984	0.975	0.045
Scalar	1269.09***	12	0.073 (0.070-0.077)	0.942	0.942	0.046
Scalar (partial*)	396.71***	11	0.042 (0.039-0.046)	0.982	0.981	0.045
	Male			Female		
Indicator	β		α	β		α
Family	0.57		5.40	0.60		5.20
Friends	0.60		5.54	0.59		4.97
School	0.52		3.15	0.63		3.21
Appearance	0.57		3.45	0.59		2.70

β = standardised factor loadings, α = intercepts for configural invariance model
* Here, partial invariance means that the intercept for appearance is freely estimated

Table 12 shows that configural invariance held for children of different ages. Although the

standardised factor loadings were not precisely equivalent at each age, the rank ordering was

similar, with generally higher factor loadings for friends and family, and generally lower

factor loadings for appearance and school. However, there was an increase in the size of the

factor loadings with age, with higher loadings for 14- and 15-year-olds, and lower loadings for 10-year-olds. This means that the four domains may not be as salient for younger children as they are for older children, and they may be less reliable measures of the underlying latent construct of SWB. Indeed, the test of metric invariance indicated that once the factor loadings were constrained to be equal, there was acceptable loss of fit for RMSEA (0.005) but higher than recommended loss of fit for CFI (0.020). However, it is important to note that the approximate fit indices were within acceptable bounds for the metric invariance model, thus, it may be reasonable to decide not to abandon a well-fitting model (Seddig and Leitgöb, 2018). When the intercepts were constrained to be equal, the loss of fit on RMSEA (0.053) and CFI (0.160) were well beyond acceptable thresholds, meaning that latent SWB means are not comparable for children of different ages. Inspection of the modification indices demonstrated that there were problems in all four domains, thus, partial scalar invariance model was not pursued further.

Table 12: Measurement equivalence, factor loadings and intercepts of children's 4-domain SWB by age

	Chi^2	df	RMSEA (90% CIs)	CFI	TLI	SRMR
Configural	173.80***	12	0.046 (0.040-0.052)	0.992	0.975	0.014
Metric	574.60***	32	0.051 (0.047-0.055)	0.972	0.969	0.063
Scalar	3707.57***	52	0.104 (0.101-0.107)	0.812	0.870	0.079

	10		11		12		13		14		15	
Indicator	β	α	β	α	β	α	β	α	β	α	β	α
Family	0.53	7.37	0.54	6.80	0.56	5.81	0.56	5.04	0.59	4.57	0.58	4.41
Friends	0.58	5.36	0.61	5.45	0.58	5.41	0.61	5.26	0.63	5.13	0.63	4.92
School	0.52	3.61	0.52	3.67	0.58	3.43	0.58	3.11	0.57	2.95	0.56	2.78
Appearance	0.51	3.58	0.53	3.41	0.56	3.13	0.57	2.92	0.57	2.76	0.54	2.72

β = standardised factor loadings, α = intercepts for configural invariance model

Finally, Table 13 shows the tests of measurement equivalence for children of different ethnicities. Broadly-speaking, the factor loadings across ethnic groups were similar when these were freely estimated, except for the appearance domain, which had a markedly lower factor loading for children of Black Caribbean ethnicity (β = 0.44) compared to those in the

other ethnic groups (β = 0.58-0.63). Furthermore, there were some differences in the rank

ordering of domains for children of different ethnicities. The highest factor loading for White,

Mixed and Pakistani children was friends, while for Black African and Bangladeshi children

it was family, and for Indian children it was school. Nonetheless, these were small

differences and once the factor loadings were constrained to be equal, there was an

improvement in fit for RMSEA (0.014) and a small loss of fit for CFI (0.004), indicating that

metric invariance was achieved and the four domains of SWB were interpreted in similar

ways by children of different ethnicities. Table 13 also shows that White and Mixed children

had markedly lower intercepts for appearance than children of other ethnicities. When the

intercepts were constrained to be equal, the loss of fit on RMSEA (0.023) and CFI (0.044)

were beyond the recommended thresholds. However, partial scalar invariance was achieved if

the appearance intercept was freely estimated.

Table 13: Measurement equivalence, factor loadings and intercepts of children's 4-domain SWB by ethnicity

	Chi^2	df	RMSEA (90% CIs)	CFI	TLI	SRMR
Configural	209.42***	16	0.050 (0.044-0.056)	0.991	0.973	0.025
Metric	327.28***	44	0.036 (0.033-0.040)	0.987	0.986	0.063
Scalar	1303.93***	72	0.059 (0.056-0.062)	0.943	0.962	0.068
Scalar (partial*)	532.08***	65	0.038 (0.035-0.041)	0.978	0.984	0.063

	White		Mixed		Indian		Pakistani	
Indicator	β	α	β	α	β	α	β	α
Family	0.58	5.40	0.58	4.85	0.54	5.51	0.61	5.28
Friends	0.59	5.23	0.61	5.03	0.59	6.25	0.62	5.16
School	0.57	3.17	0.56	3.01	0.60	3.70	0.58	3.38
Appearance	0.58	2.92	0.58	2.97	0.58	3.61	0.59	3.47

	Bangladeshi		Black Caribbean		Black African	
Indicator	β	α	β	α	β	α
Family	0.64	5.18	0.64	3.94	0.65	5.06
Friends	0.57	5.76	0.64	4.39	0.58	5.19
School	0.52	3.48	0.64	2.54	0.59	3.03
Appearance	0.59	3.59	0.44	3.31	0.63	3.55

β = standardised factor loadings, α = intercepts for configural invariance model
* Here, partial invariance means that the intercept for appearance is freely estimated

As a whole, this subgroup analysis shows that the 4-domain model of SWB has more or less

the same pattern and meaning for children of different sexes, ethnicities and ages. However,

due to differences in intercepts across these groups in respect of appearance, the comparison

of composite 4-domain SWB scores across these groups may be misleading.

As an illustration of how subgroup differences in SWB might lead to different conclusions if

the measurement issues discussed here are ignored, Figure 7 and Table 14 present two

structural equation models of children's demographic characteristics and the four domains of

SWB, which differ in how the appearance domain is modelled. In both models, SWB is

modelled as a latent variable composed of four domains; however, in the second model, there

is a direct path to appearance from age, sex and ethnicity to allow for differential item

functioning of the appearance domain.

Figure 7: Path diagrams showing demographic variables and 4-domain SWB, with and without a direct path to appearance

4-domain SWB   4-domain SWB with direct path to appearance

(Model 1)   (Model 2)
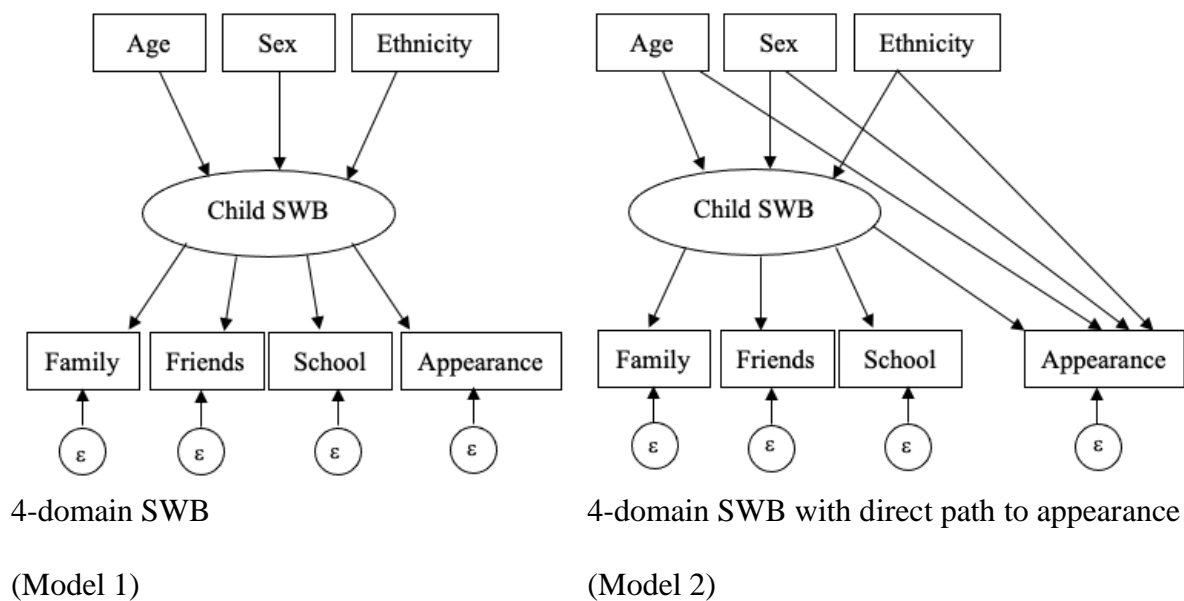
The approximate fit statistics at the bottom of Table 14 indicate that the model with a direct

path to appearance provides a better fit to the data. Although the RMSEA statistic for Model

1 is within acceptable limits, the CFI statistic does not reach the accepted threshold of 0.95; however, for Model 2, both statistics are within acceptable bounds. Furthermore, the model with no direct path to appearance (Model 1) identified lower SWB for girls, older children and children of Black Caribbean ethnicity, and higher SWB for children of Indian, Pakistani, Bangladeshi and Black African ethnicities. However, in the model with a direct path to appearance (Model 2), sex was not associated with SWB, and all non-White ethnic groups had a less negative association with SWB, leading to the coefficient for Black African ethnicity becoming non-significant. In parallel, in Model 2, the SWB of Indian, Pakistani and Bangladeshi children was only slightly higher than that of White children, while the lower SWB of children of Mixed or Black Caribbean ethnicity was more pronounced.

Table 14: Structural equation models of 4-domain SWB and demographic variables

	Model 1	Model 2
SWB		
Sex: female	-0.06***	0.00
Age	-0.29***	-0.27***
Ethnicity (White)		
Mixed	-0.01	-0.03***
Indian	0.05***	0.03***
Pakistani	0.06***	0.02***
Bangladeshi	0.04***	0.02***
Black Caribbean	-0.02***	-0.05***
Black African	0.03***	-0.01
Other ethnicity	0.00	-0.01
Family	0.59***	0.58***
_cons	6.63***	6.49***
Friends	0.57***	0.59***
_cons	6.51***	6.46***
School	0.58***	0.59***
_cons	4.47***	4.40***
Appearance	0.59***	0.57***
_cons	4.33***	4.54***
Appearance		
Sex: female		-0.13***
Age		-0.04***
Mixed		0.04***
Indian		0.03***
Pakistani		0.07***
Bangladeshi		0.04***
Black Caribbean		0.06***
Black African		0.07***
Other ethnicity		0.02***
Chi-square (df)	2797.55*** (59)	1183.59*** (40)
RMSEA (90% CIs)	0.035 (0.033-0.036)	0.027 (0.026-0.028)
CFI	0.898	0.957
SRMR	0.012	0.008
CD	0.100	0.136

* p<0.05 ** p<0.01 *** p<0.001. Models also include wave of the survey

These results suggest that girls and children of White ethnicity score lower on the 4-domain

SWB measure not just because of their underlying latent SWB but also because of

differences that are specific to the appearance domain. These findings are in line with studies

that have found differential item functioning in the measurement of depression according to sex and ethnicity (e.g. Verhoeven, Sawyer and Spence, 2013; Breslau *et al.*, 2008). There are a number of potential explanations for the differential item functioning of appearance with respect to overall SWB. It could be that the appearance domain has a different relationship with underlying SWB for girls and White children compared to boys and non-White children because SWB manifests differently for children of different sexes and ethnic groups. This type of explanation has been described as 'benign', as it suggests that the differential item functioning of the appearance domain may reflect important cultural differences in the experience of SWB (Breslau *et al.*, 2008). On the other hand, it could be that children of different sexes and ethnic groups interpret the question about appearance in different ways. This type of explanation has been described as 'adverse' as it is not relevant to the underlying trait of SWB and can lead to incorrect inferences about group differences in SWB (Breslau *et al.*, 2008). Another possibility, which is unlikely given the analysis presented in this chapter, is that the differences in responses to the appearance question for boys and girls - and for children in different ethnic groups - reflect true differences in underlying SWB.

Given that there is only one measure of satisfaction with appearance in the UKHLS, it is not possible to further investigate these varying explanations and reach a conclusion about whether the differential item functioning is 'benign' or 'adverse'. However, a clear message from this analysis is that distinctive approaches to measuring overall SWB can lead to substantial disparities in interpretation about sex and ethnic group differences in SWB, and this is likely due to a combination of both measurement and 'true' variation. These subtleties of interpretation will be borne in mind in the rest of this thesis. Furthermore, in the following chapters, differences in 4-domain SWB between girls and boys, children of different ages, and children in different ethnic groups are not the main focus of the analysis; however, age,

sex and ethnicity are always included as covariates in order to account for any differential

item functioning of the appearance domain.

Longitudinal invariance

It is also possible to explore the longitudinal reliability of the 4-domain measure of child

SWB by testing whether this measure is invariant at different time points. The sample size for

this analysis was different from that for the above sections since only some children

participate in multiple consecutive waves of the UKHLS.

Table 15: Longitudinal measurement equivalence, factor loadings and intercepts of children's 4-domain SWB, at 2 consecutive waves

	Chi^2	df	RMSEA (90% CIs)	CFI	TLI	SRMR
Configural	184.28***	15	0.035 (0.031-0.040)	0.989	0.979	0.020
Metric	186.91***	17	0.033 (0.029-0.038)	0.988	0.981	0.020
Scalar	414.23***	21	0.046 (0.042-0.049)	0.973	0.964	0.020
Strict	473.96***	25	0.045 (0.041-0.048)	0.970	0.966	0.025

	T1		T2	
Indicator	β	α	β	α
Family	0.57	6.21	0.58	5.55
Friends	0.56	5.56	0.59	5.44
School	0.53	3.47	0.55	3.31
Appearance	0.53	3.32	0.55	3.14

β = standardised factor loadings, α = intercepts for configural invariance model

Figure 8: Longitudinal invariance of children's 4-domain SWB over 2 consecutive waves
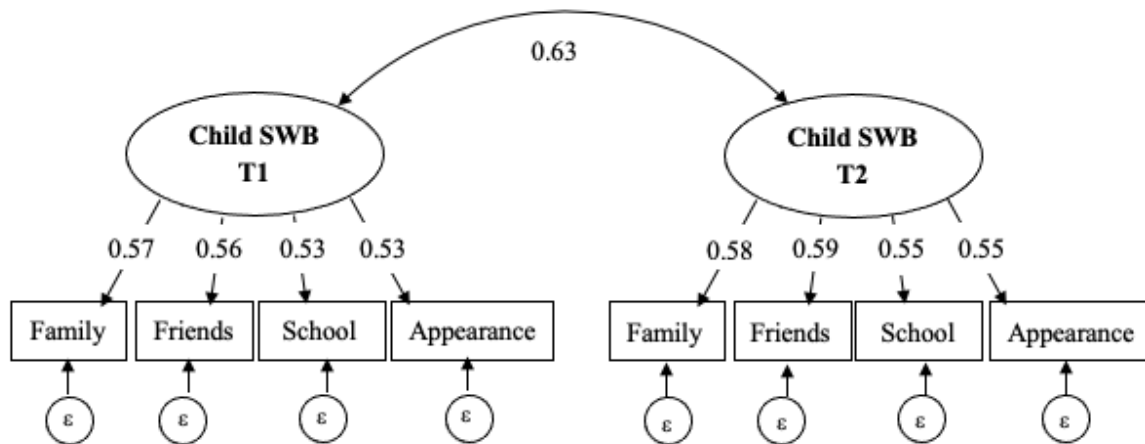
Table 15 and Figure 8 show the results of longitudinal analysis of the children's SWB measure over two consecutive waves, in which the latent variables at the two timepoints - and the error terms for each domain measure – were allowed to covary. As can be seen, the factor loadings in the configural model were moderately high (ranging from 0.53 to 0.59) and the rank ordering was similar at each timepoint, with slightly higher factor loadings for family and friends and slightly lower factor loadings for appearance and school. Latent SWB appears to have relatively high stability longitudinally, with an inter-wave correlation of 0.63. The metric model indicates that once the factor loadings were constrained to be equal, there was an improvement in fit for RMSEA (0.002) and minimal loss of fit for CFI (0.001). Furthermore, constraining the intercepts to be equal resulted in acceptable loss of fit for RMSEA (0.013), although the change in the CFI statistic was slightly above the recommended threshold (0.015). Indeed, even for the strict invariance model, there was negligible loss of fit, with an improvement in fit for RMSEA (0.001) and a small loss of fit for CFI (0.003). Thus, over two consecutive waves of the survey, there was strict longitudinal invariance for the 4-domain SWB measure.

Table 16 and Figure 9 shows the results of further longitudinal analysis of the children's

SWB measure over three consecutive waves. Again, the factor loadings in the configural

model were moderately high (ranging from 0.53 to 0.62) and similar at each timepoint,

although there were some differences in rank ordering. Latent SWB appears to have

relatively high stability longitudinally, with inter-wave correlations of 0.62 and 0.65 for

consecutive waves, and a correlation of 0.49 for waves that are two years apart. The metric

model indicates that once the factor loadings were constrained to be equal, there was minimal

loss of fit for RMSEA (0.001) and CFI (0.001). The loss of fit from the metric to the scalar

model exceeded the recommended thresholds, however, the approximate fit indices for the

scalar model indicated a well-fitting model, thus, there is an argument for accepting

longitudinal equivalence across three waves.

Table 16: Longitudinal measurement equivalence, factor loadings and intercepts of children's 4-domain SWB, at 3 consecutive waves

	Chi^2	df	RMSEA (90% CIs)	CFI	TLI	SRMR
Configural	170.48***	39	0.024 (0.021-0.028)	0.992	0.987	0.018
Metric	203.06***	44	0.025 (0.022-0.029)	0.991	0.986	0.022
Scalar	770.07***	52	0.049 (0.046-0.052)	0.958	0.946	0.023

	T1		T2		T3	
Indicator	β	α	β	α	β	α
Family	0.53	6.65	0.56	5.84	0.59	5.22
Friends	0.56	5.60	0.59	5.46	0.62	5.18
School	0.54	3.61	0.56	3.46	0.56	3.31
Appearance	0.53	3.41	0.57	3.24	0.55	2.98

β = standardised factor loadings, α = intercepts for configural invariance model

Figure 9: Longitudinal invariance of children's 4-domain SWB over 3 consecutive waves
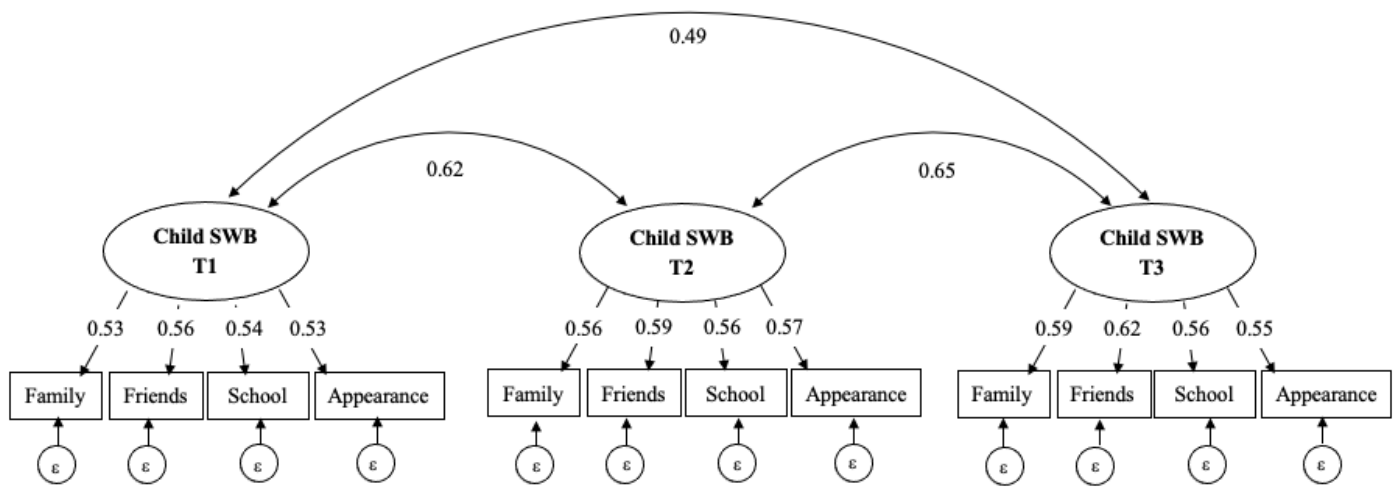
Discussion

There is only one 'global' measure of life satisfaction in the UKHLS, which brings with it conceptual and statistical shortcomings to the measurement of overall SWB. Multi-item measures are preferable for statistical reasons as their validity and reliability can be more robustly assessed, and there is greater possibility for differentiation between respondents and over time. The five domain measures – family, friends, schoolwork, school and appearance – have only partial coverage of aspects of life that are important to children's well-being. Nonetheless, the six measures of SWB that are contained within the UKHLS are valid, relevant and comprehensible to children aged 10 to 15, and their distinctive associations with other variables suggest that they capture meaningful concepts.

The results of this analysis provide support for theoretical and empirical studies of SWB that differentiate between higher-order measures of global SWB and lower-order measures of satisfaction with different domains of life (Cummins, 1996). Confirmatory factor analysis of a six-item model of SWB that combines the global measure of satisfaction with life as a whole and five domains of SWB - an approach that has been taken in numerous UK studies to measure children's SWB - demonstrates that this model does not meet widely accepted thresholds for goodness-of-fit. However, a four-domain measure proposed by Rees (2018), which combines satisfaction with family, friends, school and appearance to measure overall SWB, is found to have good statistical properties, and is statistically and conceptually preferable to a 4-domain model in which schoolwork replaces school. Invariance testing of the preferred 4-domain model was carried out to ensure that this approach is measuring overall SWB in the same way at different timepoints and across different groups of children (Johnson, 1998). This provided strong support for longitudinal invariance of the 4-domain measure. Across two consecutive waves of the survey, there was strict invariance. Moreover,

although across three consecutive waves of the survey the loss of fit for the scalar model exceeded recommended thresholds, there was acceptable goodness-of-fit. Since the longitudinal techniques used in this thesis involve assessing changes in children's SWB across two consecutive observations - and the majority of consecutive observations are either two or three waves apart - these findings provide reassurance that there is longitudinal equivalence in the concept being measured.

Nonetheless, multi-group CFA to test the reliability of the four-domain model with children of different ages, sexes and ethnicities cautions against unreflective use of composite SWB scores to compare children in these different sub-groups. Metric equivalence indicates that the four domains are valid indicators of underlying SWB regardless of the age, sex and ethnicity of the child. However, some domains of SWB appear to have different salience for girls compared to boys, younger compared to older children and children in different ethnic groups. Furthermore, full scalar equivalence was not achieved for any of the subgroups, and the appearance domain appears to be especially problematic in this regard. Nonetheless, partial scalar invariance was achieved for sex and ethnicity if the appearance intercept was freely estimated. Given that Meuleman (2012) has argued that for meaningful comparisons, just two invariant factor loadings are adequate (Meuleman, 2012), a decision was made to retain the 4-domain SWB model.

However, as a result of these findings, in the rest of this thesis, age, sex and ethnicity are always included as control variables so that differences in SWB by these factors can be disregarded, whatever their source. When there is no attempt to disentangle substantive subgroup differences in SWB from measurement differences, the confounding of these two different components of variance is less of a concern. However, where there is an explicit

intention to understand rather than disregard these differences, interpretation of the subgroup differences needs to be nuanced and consider both measurement and substantive differences wherever possible.

Chapter 3: Child-centred poverty measurement and children's SWB

Introduction

Socioeconomic disadvantage is associated with a range of children's outcomes including physical health (e.g.Hagell, Shah and Coleman, 2017; Violato, Petrou and Gray, 2009), mental health (e.g.Meltzer *et al.*, 2003; Cooper and Stewart, 2017; Fitzsimons *et al.*, 2017) and educational attainment (Blanden, 2004; Ermisch, 2008; Dickerson and Popli, 2016). Added to this, qualitative research provides evidence of poverty having a clear impact on children's quality of life (Ridge, 2009; Pemberton, Sutton and Fahmy, 2013; Mahony *et al.*, 2017; Main and Pople, 2011; Ridge, 2002). It is surprising, then, that it does not have a stronger quantitative relationship to children's SWB (Main and Pople, 2011; Knies, 2012; Patalay and Fitzsimons, 2016; Rees, 2018).

One reason for this disparity relates to the measurement of socioeconomic disadvantage, which is generally not 'child-centred' and may not adequately capture children's experiences. Based on a review of qualitative and quantitative literature on child poverty, this chapter identifies factors that are likely to be important for children's quality of life - as they capture aspects of socioeconomic disadvantage that are tangible to children - and explores the relationship between these factors and children's SWB within the UKHLS. Chapters 4 and 5 then develop this theme further by exploring the role that children's family structures and relationships play in accounting for the relationship between socioeconomic disadvantage and SWB.

Measurement of socioeconomic circumstances

As a main aim of this chapter is to critique the approach to measurement of children's socioeconomic circumstances that is taken by much research, this section provides the

rationale for the inclusion of particular concepts and measures in the empirical analysis. It follows Townsend (1979) in conceiving of living standards and social participation as the most immediate influence on children's quality of life, and of other measures of socioeconomic circumstances - such as parental education, parental employment and household income - as providing an important context to this.

Household income

In the UK, income poverty is a relative measure, defined in relation to average levels of income, usually 60% of median equivalised household income (Francis-Devine, 2023; DWP, 2023). Although the UK Government no longer has targets to reduce the proportion of children in income poverty, this is still the most commonly-used indicator of child poverty. It has the advantage of being widely understood and researched, its pre-eminence reflecting the acknowledgement that income is the main means of acquiring the resources necessary for participation in society (Townsend, 1979). A disadvantage is that the poverty line is drawn arbitrarily, resulting in some families with incomes 'a penny apart' being categorised differently despite, presumably, having similar circumstances.

Another approach to defining the adequacy of income is the minimum income standard (MIS) developed by Bradshaw and colleagues (2008), which calculated a series of budget standards for households of different sizes that would enable a 'minimum, socially acceptable quality of life'. These budgets, which were updated most recently in 2020, cover essential expenditure on 'food, clothes, accommodation, utilities, fuel, household goods, personal goods and services, transport, and social and cultural activities' (Bradshaw et al., 2008; Hirsch et al, 2020).

An issue affecting both relative poverty and the MIS is that both take the household rather than the child as the unit of analysis. Therefore, although the number of children - and adults - in the household are accounted for in calculations, there is an assumption that similar and equitable processes of intra-household allocation take place amongst different households in the population. In practice, as Main (2018) points out, 'the distribution of disadvantage is not necessarily equal' across all household members. This is not a new concern - Townsend made a similar observation in 1979 - but significant challenges remain in the identification of different patterns of intra-household allocation across households.

> It would be a mistake to assume that all resources entering a household are pooled and used equally by its individual members.

(Townsend, 1979, p. 178)

In some households, children's needs may take precedence over adults', while in others, the opposite may be true. For example, there is evidence that parents forego items for themselves in order to prioritise those required by their children (Main, 2013), while qualitative research also reveals that children in low-income families sometimes conceal their needs from parents so as not to overburden already constrained household budgets (Ridge, 2002; Mahony *et al.*, 2017). Furthermore, some households are able to draw on networks of non-resident family and friends for financial support or in-kind contributions (Mahony *et al.*, 2017; Main, 2018), and these may not be fully accounted for in the data generated by household studies. In considering issues such as these, Main (2013) argues for income to be thought of as an indirect measure of child poverty and an input that 'may or may not be translated into the output of good living standards for the child' (Main, 2013, p. 14). This is the approach that will be taken in this analysis.

Equivalisation

It is common in research on household income to use equivalisation to take account of household size and composition by allocating an 'equivalisation factor' to each child and adult in the household. This process reflects the belief that different income levels are needed to stretch across households of different sizes, and that the consumption needs of adults are greater than those of children. Indeed, the way that state benefits such as Universal Credit are allocated to families of different sizes reflects an implicit belief that income should be equivalised in particular ways. It is self-evident that the comparison of non-equivalised incomes of a single-parent household with one child and a couple-parent household with four children is not a comparison of like with like. However, there are also reasons to question the wisdom of equivalisation. Decisions about how best to capture the economies of scale that larger households can take advantage of are, to some extent, arbitrary, and based less on what is 'empirically demonstrable' and more on what is possible (Hirsch et al., 2021). Yet equivalisation has an influential and mechanistic effect on whether a household is categorised as low-income or not.

The equivalence scale most often used in the UK is the OECD modified scale, which allocates a factor of 1 to the first adult household member, 0.5 to each additional household member aged 14 and above, and 0.3 to each child aged 13 or under. Two hypothetical changes of children's family circumstances serve as examples of how the process of equivalisation could affect conclusions drawn about children's material well-being. In a first example, the birth of a new child to a two-child family that is just above the poverty line may push the family below the poverty line even if, in practice, the family's finances are largely unaffected. There is an 'additional mouth to feed' – or perhaps more importantly, 'nappies to buy' - but the family may or may not perceive their standard of living to have been

downgraded by a factor of 0.3, particularly as many of the items needed for the new baby may already be owned by the family. In a second example, an older child, who is categorised as an adult by the OECD equivalence scale, leaves for university and, thus, a family whose equivalised income is below the poverty line is automatically upgraded, even if in practice the family budget needs to stretch even further than before. Many other examples could be presented to illustrate the fact that the exactitude conveyed by categorising a change of circumstances as a change in poverty status can be an artefact of the process of equivalisation.

Although economies of scale are crucial to take account of, they are not uniform across categories of spending (Hirsch et al., 2021). On the one hand, there is evidence that some types of deprivation, such as lacking consumer durables, may be lower amongst large families, possibly because owning these items may be of more use to larger families (Bradshaw *et al.*, 2006). On the other hand, although families of different sizes may be able to share consumer durables such as a car, television, computer or washing machine with minimal additional expenditure associated with an extra family member, the costs of public transport, a holiday or entrance to a theme park are directly proportional to the size - and, sometimes, age - of the family. Furthermore, economies of scale are not constant across the income distribution. Hirsch and colleagues (2021) found the relative cost of children to fall as income rises, meaning that additional children are less costly to more affluent families, and child poverty is likely underestimated. Recent analysis by Hirsch and colleagues (2021) suggests that in contrast to the MIS approach, the OECD modified scale underestimates the relative costs of children compared to adults, and of single adults compared to couples, meaning that low income amongst single-parent families is likely to be underestimated on two counts (Hirsch et al., 2021). Indeed, when Hirsch and colleagues compared the cost of

social participation for a single parent with one child and the cost of a couple, the budgets were almost identical for these two households.

Given the evidence suggesting that equivalisation methods that assign lower factors to children underestimate their consumption needs in comparison to adults, different methods of equivalisation would be expected to have varying levels of accuracy in identifying poverty, and, therefore, to have different associations with SWB.

Deprivation

In comparison to income, material deprivation is a more direct measure of experienced poverty. The definition of deprivation used in this chapter relates to that put forward by Townsend (1979):

> People can be said to be deprived if they lack the types of diet, clothing, housing, environmental, educational, working and social conditions, activities and facilities which are customary, or at least widely encouraged or approved, in the societies to which they belong. They fall below standards of living which either can be shown to be widespread in fact or are socially accepted or institutionalized.

<div align="right">(Townsend, 1979, p. 413)</div>

This approach, which has been developed further by the Breadline Britain study (Mack and Lansley, 1985; Gordon and Pantazis, 1997) and the Poverty and Social Exclusion (PSE) Survey, conceives of poverty as a state in which people cannot afford 'what the population as a whole think should be a minimum standard of living' (Gordon *et al.*, 2013, p. 4). This marks a shift away from taking account solely or mainly of people's incomes to focusing on their actual living standards, using a consensual approach to determine the items and activities that should be considered necessities.

One conceptual issue to consider when attempting to measure deprivation is whether items included in an index represent all aspects of the concept, or whether deprivation is a latent construct that is essentially unmeasureable (Main, 2013). It may be that an index of deprivation is sufficient to identify those experiencing poverty because those deprived in unmeasured dimensions are also deprived in measured dimensions (Bedük, 2020). However, if this is not the case, then some people will be missed even if they are genuinely deprived. Studies of deprivation usually have theoretical reasons for conceptualising deprivation in a particular way, yet are ultimately reliant on the data that is available when constructing deprivation indices (Beduk, 2018). This is an important consideration for this analysis.

Parental employment

There is an intuitive link between worklessness and children's experience of socioeconomic disadvantage since employment earnings influence the resources that are available to the family, and to the child. However, having a working parent does not always shield children from disadvantage. One of the most striking findings of Townsend's landmark study was that most people living in or on the margins of poverty were 'working poor', dependent on earnings for their main source of income but on a low income or underemployed (Townsend, 1979). This is still the case in the UK where 69% of poor children are estimated to be living within working families (Department for Work and Pensions, 2019). Nonetheless, workless households are more likely to be poor than households with a working adult. For this reason, this analysis will include a dichotomous variable to distinguish households with at least one adult in work from workless households.

Parental education

Parental education is an extensively used indicator of socioeconomic status in studies of children's lives and an important correlate of socioeconomic disadvantage as it is related to employment status and earnings (Bhutoria, 2016). However, it is not clear from existing research whether parental education is directly related to children's SWB. Although two UK studies of children's SWB found bivariate associations with parental educational level, these were no longer significant once other factors were taken into account (Rees and Bradshaw, 2018; Patalay and Fitzsimons, 2016). In this chapter, parental education will be included as a contextual factor that is expected to influence families' socioeconomic circumstances, while in Chapters 4 and 5, it will be explored further in respect of parent-child relationships.

Family size

An unsurprising finding from research into socioeconomic disadvantage is that families with a large ratio of dependents to earners are more likely to experience income poverty and specific problems such as overcrowding than families with a smaller ratio. In 2022, 30% of children in families with three or more children were defined as being income-poor before housing costs - and 42% after housing costs - compared to 14-15% of children in one- or two-child families, and 22-23% after housing costs (DWP, 2023). Family size often coincides with other factors known to be associated with socioeconomic disadvantage; however, even after controlling for a range of correlates such as number of earners, ethnicity, parental education, lone parenthood and mother's age when her first child was born, it has been shown that family size retains an association with poverty (Bradshaw *et al.*, 2006).

Receipt of means-tested benefits

The state's provision of benefits contains an implicit assumption that the incomes of some households are insufficient to live on without being supplemented. Townsend (1979) argued that the amount that households receive in means-tested benefits can be thought of as an estimate of 'socially perceived poverty', although it is pointed out that where this line is drawn is neither 'objectively nor scientifically constructed' (Townsend, 1979, pp. 247-248). Recent analysis of whether and how the benefits regime in the UK helps low-income families to achieve a Minimum Income Standard (MIS) shows that in-work benefits help couples with two full-time earners to reach the MIS, but there is a small shortfall for working single-parent families and a substantial shortfall for workless couple and single-parent households (Hirsch, 2020).

Although the amount received in means-tested benefits is usually included in measures of household income, a dichotomous indicator of whether or not a family receives these benefits can provide additional insights into direct experiences of socioeconomic disadvantage. In order to access benefits, a claimant needs to provide detailed information about their household income and family circumstances; thus, receipt of benefits represents an additional indicator of material circumstances that may (or may not) be more accurate than an estimate of household income derived from a survey. As it is possible to be eligible for benefits yet not to claim them, receipt of benefits also indicates that the claimant has a self-defined need. Furthermore, there is qualitative evidence to suggest that children may experience stigma related to the aspects of socioeconomic disadvantage that are most visible to others, including being 'on benefits' (Ridge, 2002), thus a measure of receipt of benefits is likely to capture children's experience of poverty-related stigma as well.

This chapter follows Bradshaw and Holmes (2010) in focusing on four means-tested legacy benefits - Income Support, Working Tax Credit, Housing Benefit and Council Tax Benefit (Bradshaw and Holmes, 2010) – in addition to Universal Credit, which was introduced in 2017 to combine all previously existing benefits into a single payment.

Housing tenure, quality and overcrowding

An emphasis on the relative nature of living standards applies in equal measure to housing, including to expectations about home ownership and housing quality. One issue with current household income is that it does not account for the wealth that people have, or lack, by virtue of ownership of property and other assets. Furthermore, wealth is often transmitted from one generation to the next through the inheritance of property and other assets. Research evidence also suggests that children in social housing live in greater proximity to neighbourhood violence than their counterparts in non-social housing (Mahony *et al.*, 2017). For these reasons, this analysis will include an indicator of housing tenure to differentiate between families who own their houses and those in privately rented or social housing.

Townsend (1979) provided evidence of poor housing quality and overcrowding affecting children disproportionately (Townsend, 1979, p. 489). More recent, qualitative research with children highlights the ongoing problems of housing quality for children in low-income families (Ridge, 2002). Overcrowding also remains a contemporary issue but with a different character and metrics (Cable and Sacker, 2019). This analysis will apply a simple measure of overcrowding used by Cable and Sacker (2019) known as the persons per room approach, which divides the number of occupants of a household by the number of rooms, excluding kitchen or bathrooms. It will also draw on indicators of housing quality such as whether households have adequate heating, and whether children have space outdoors to play.

Neighbourhood deprivation

There is a lack of quantitative research to examine how neighbourhood deprivation relates to children's SWB. However, a key finding from qualitative research is the importance to children of the quality of their living environments, including the extent to which they feel safe within their local neighbourhoods (Ridge, 2002; Mahony *et al.*, 2017; Pople, 2022). Moreover, children are sensitive not just to neighbourhood quality but also to how they compare in material terms to others around them. These two influences - children's perceptions of the quality of their neighbourhoods and the social comparisons that they make - are potentially conflicting, and reflect different theories about neighbourhood quality and children's well-being. On the one hand, theories of social capital and collective socialisation suggest benefits to children of living in more affluent areas where neighbourhood cohesion tends to be higher and exposure to crime and violence is typically lower. On the other hand, theories of relative deprivation would suggest that experiencing disadvantage within a context of affluence is likely to be more difficult than living in a deprived neighbourhood where children may derive comfort from the fact that others – including friends and peers – are similarly disadvantaged.

A further issue relates to whose perceptions are captured when neighbourhood quality is assessed. Children and adults define their neighbourhoods in different ways, and these do not align neatly with administrative boundaries. In one study, administrative data was found to be 'blind' to neighbourhood concerns such as traffic and dangerous dogs, which were salient to children and adults (Spilsbury, Korbin and Coulton, 2012). On the other hand, in the same study, children in a neighbourhood defined by administrative data as high-violence were *less* likely than children in a low-violence neighbourhood to identify violent crime as a danger,

whereas the reverse was true of parents (Spilsbury, Korbin and Coulton, 2012). This may be due to the normalisation of violence and disorder for children in deprived neighbourhoods, who become accustomed and, to a degree, immune to it (for evidence of this, see the section on children's perspectives on their neighbourhoods). There are likely to be benefits to considering different perspectives - as well as both 'objective' and subjective measures – of children's neighbourhoods.

Subjective measures of poverty

Subjective measures of poverty are concerned with people's own accounts of how they feel about their financial circumstances and are used in their own right as well as to validate other measures. However, subjective assessments of 'feeling poor' and objective judgements of economic circumstances are not equivalent. Indeed, they sometimes have little in common. Bradshaw and Finch (2003) explored the overlap between deprivation, relative income poverty and subjective poverty, and found a considerable lack of overlap between these three measures (Bradshaw and Finch, 2003).

A number of explanations have been put forward for the lack of coincidence between subjective and objective measures. One explanation relates to measurement, including that at any given point in time, some households will have experienced a change in income despite their levels of deprivation and subjective feelings lagging behind. If this is the case, then measures of deprivation and subjective poverty are likely to be preferable to measures of income. An alternative explanation relates to 'false consciousness' and the fact that different people with the same resources feel differently about their circumstances: some feel poor when they are not and *vice versa*. This may be due to the comparisons that people make, which may be themselves at another point in time, or others who are better or worse off than

themselves. For example, there is evidence that home-owners are less likely to perceive themselves as being poor even if they are objectively so (Watson and Webb, 2009). If false consciousness is at play, then measures of income poverty and deprivation might be preferred to subjective assessments.

Townsend (1979) and other recent commentators offer insights into how poverty comes to be associated with shame, stigma and 'Othering' (Lister, 2015). In popular - and official - narratives, poverty is often attributed to individual misfortune or failings, rather than to the structure of society. This allows the poor to be separated into the 'deserving' – for example, those who suffer individual misfortune such as sickness, bereavement or old age - and the 'undeserving' – including those who show individual failings such as mismanagement or indolence. In one study, participants - who themselves were income-poor - differentiated their own 'everyday hardship' from other people's experiences, which were ascribed to their failings (Lister, 2015, pp. 143-144). Although, the idea of a 'culture of poverty' is unsupported by evidence, it highlights the need to consider whether families - and the children within them - are subject to the stigma of poverty and experience poverty shame.

Qualitative research on child poverty

Qualitative research is well suited to an in-depth exploration of the ways in which children's social contexts shape their well-being, including how and why different aspects of children's environments and relationships are important. However, there is a lack of qualitative research with children on how socioeconomic disadvantage affects their quality of life, and even less that is longitudinal in nature. This section summarises key findings from a small number of UK qualitative studies and reviews on this topic. Table 17 summarises findings from these

studies, while the rest of the section discusses findings relating to three key themes of social

relationships and possessions, family relationships, and housing and neighbourhoods.

Table 17: Qualitative studies of child poverty in the UK

Author(s)	Study	Key findings
Ridge, 2002	Childhood poverty and social exclusion: from a child's perspective	For children in low-income families: • Children are sensitive to parental financial struggles; hold back from asking for material items or conceal problems • Importance of social participation and of 'fitting in' • Stigma/shame of poverty • Rural poverty, cost/availability of transport • Housing problems, embarrassed to invite friends over • Autonomy can be gained from paid work
Ridge, 2009	Living with poverty: a review of the literature on children's and families' experiences of poverty	For children in low-income families: • Anxiety about adequacy of income and parental well-being • Lack of material possessions and everyday essentials • Restricted opportunities for social participation and at school • Bullying, stigma and social isolation experienced • Conflict between children and parents • Poor quality housing, homelessness and poor neighbourhoods
Millar and Ridge, 2009	Relationships of care: Working lone mothers, their children and employment sustainability	For children in low-income, lone-mother families: • There is a trade-off between earnings gained from employment and family time • Grandparents play a key role in providing financial and emotional support to low-income, working, lone-mothers
Main, 2013	A child-derived material deprivation index	Children in all income groups identify the following material items as important for a 'normal life': • The 'right' clothes/trainers to fit in with peers • Items/activities that support social relationships • Entertainment/having fun • Items that support education/future well-being

Pemberton, Sutton and Fahmy, 2013	A review of the qualitative evidence relating to the experience of poverty and exclusion	In low-income families: • Extended family members pay for children's necessities, provide gifts and loans, and help with childcare • Parents 'go without' so children can participate in social activities and restrict their food intake to feed their children • Children excluded from school and out-of-school activities that have a cost • In deprived areas, parents and children had worse housing conditions and greater worries about crime and unsafe neighbourhoods, especially drugs and gangs.
Mahony, Davis, Pople and Ridge, 2017	Understanding childhoods: Growing up in hard times	For children in low-income families: • Pocket money is uncommon • Parents prioritise spending on items for children to ensure children are not deprived • Unsafe neighbourhoods, gangs and violence • Residential transience & insecure housing • Extended family are providers of resources
Pople, 2022	What stops a good life for children? An exploration of bullying, poverty and gender	For children in low-income families: • Bullying is related to deprivation directly and indirectly • The 'right' clothes/trainers are needed to fit in with peers

Social relationships and 'fitting in'

A key finding from qualitative research is the importance to children of their social

relationships and of fitting in. In Ridge's landmark study of childhood poverty, friendships at

school were valued but hard to sustain beyond the school gates due to limited access to

transport and poor quality housing preventing visits from friends (Ridge, 2002). Research on

deprivation highlights the importance of material items and activities that support children's

social relationships, such as family day trips and holidays or clothes to fit in with peers

(Main, 2013). By extension, visible signs of deprivation such as not being able to afford the

same possessions, clothing or social activities as peers present obstacles to children's social

relationships (Ridge, 2009; Main, 2013). Especially for older children, having the 'right'

clothes - and especially the 'right' trainers – is an important way of gaining social acceptance and avoiding bullying (Ridge, 2002).

> You need the top-notch trainers. I have the second top-notch trainers but it's close enough so I'm still kind of accepted. 11-year-old girl
>
> (Pople, 2022, p. 221)

The qualitative studies reviewed bullying as an issue for children (Ridge, 2002; Mahony *et al.*, 2017), sometimes with an explicit connection to poverty, other times more subtly related (Pople, 2022). There was also evidence of children experiencing poverty-related stigma and shame (Pemberton, Sutton and Fahmy, 2013; Ridge, 2009).

> They make fun of the way he dresses […] and his haircut. […] His shoes, they just make fun of his shoes because of where they're from, and they say 'it's cheap' and 'you're poor' and everything, because he bought them because they're cheap. 9-year-old boy
>
> (Pople, 2022, p. 221)

In Ridge's study (2002), pocket money was rare amongst children in low-income households: nearly three quarters of the sample did not regularly receive pocket money. In a more recent study, Mahony and colleagues (2017) reached a similar conclusion, qualifying further that "if children in low-income households wanted a specific item, they would ask parents for it, or save up money received for their birthday or Christmas" (Mahony *et al.*, 2017, p. 39). In this study it was observed that, on the face of it, children in low-income households often appeared to have the same or similar material items as their wealthier peers; only a minority were missing out completely on socially perceived necessities. However, material possessions were sometimes broken, had limited functionality or were hand-me-downs from parents or older siblings (Mahony *et al.*, 2017, p. 36).

This study and other research (e.g. Lister, 2015) suggest that due to the social stigma of poverty, ensuring children have access to socially perceived necessities may be all the more important to low-income families. Thus, together, these qualitative studies point to the fundamental importance to children of having access to material items and activities that enable their full social participation. In households where budgets are constrained, families go to great lengths to achieve this. However, for many children in low-income families, 'fitting in' might mean a delicate balancing act that could unravel under closer scrutiny.

Family relationships

Insights from qualitative research with children counsel against drawing simple conclusions about intra- and inter-household sharing of material items within families. In addition to the points made already about parents prioritising spending on children, and extended family members paying for expensive items for children, qualitative research also highlights the variety of different family structures that children live in (Davies, 2015). Neglecting to take account of the complexity of children's circumstances within and across households can be an important oversight. A substantial minority of children divide their time between two homes and may have access to different material items and activities in each home.

Furthermore, financial help from outside of the household may benefit different members of the same household differently. In families where children have step- and half-siblings, one child may receive money and possessions from a non-resident parent while another does not. As illustrated in the quote below, for some children, financial support from non-resident family members can be significant by its absence.

> I'd ask my dad [for money] and my dad says: "I'm going to send it to you on Saturday" and then I wait until Saturday, he doesn't send it. That's what he's done to me lots of times...My sister's dad always sends her money and I sometimes feel a

little bit embarrassed...There are so many trips that I've missed because...I haven't got money and stuff. 11-year-old girl

(Mahony *et al.*, 2017, p. 39)

Another challenge to traditional notions of family dynamics and wealth accumulation comes from a study of children in unemployed, lone-mother families. Millar and Ridge (2009) found a trade-off for children's well-being whereby a mother's move into employment was accompanied by financial benefits on the one hand, but a loss of family time on the other hand. Despite a shared commitment amongst mothers and children to the 'family-work' project, the younger children in the study, in particular, wanted more time with their mothers:

I miss her and sometimes I cry because she's at work, and I just sit there and just think about my family and her […] when my mum wasn't working, she wasn't paid and she could spend time with me, but now she is, she's paid and she can't spend time with me. Kitty

(Millar and Ridge, 2009, p. 116)

Despite the belief that children are often unaware of financial problems in their households, research with children demonstrates their sensitivity to the challenges faced by parents dealing with constrained budgets. In ethnographic research in the US, Lareau (2011) found that financial problems were discussed openly in low-income families and children were 'well aware of what their parents can or cannot afford to spend money on' (Lareau, 2011, p. 59). In qualitative research in the UK, children worried about their parents' financial situations and tried to protect their families by moderating their demands and self-excluding from activities that cost money (Ridge, 2002; Mahony *et al.*, 2017).

If my friends say "can I stop at yours tonight?" and my mum says "yes" but then they say "will you ask your mum if you can buy loads of munchies for us so we can have like a proper munch out" and then I say "yes of course I'll ask her, I'll go ask her" and then I'll just walk downstairs, sit downstairs, watch TV for five minutes then come back and tell them that I've asked her and she said no...because I don't really want to ask her for loads of things because if she says no, I'm going to feel bad. 11-year-old girl

(Mahony *et al.*, 2017)

Housing and neighbourhoods

Living in accommodation that is cramped or in a poor state of repair poses difficulties for children sleeping, studying and playing at home (Ridge, 2009). Poor quality housing also raises the issue of reciprocity: children may feel they cannot accept an invitation to visit friends' houses if they are unable to return the favour (Ridge, 2002).

In one qualitative longitudinal study, homelessness and frequent or forced house were widespread amongst low-income families: over a third (38%) of participants had moved house three or more times in their lives – and 16% had moved between five and eleven times - despite attempts to exclude highly mobile children from the study to avoid unnecessary attrition (Mahony *et al.*, 2017, p. 12). The reasons for moving included positive motivations - such as to move into better-quality, larger or permanent accommodation - as well as more negative reasons - such as to escape domestic violence, neighbourhood violence and crime, or a forced move due to eviction (Mahony *et al.*, 2017, p. 14). Having a sense of control and agency in the process as well as preserving social relationships was a key factor in determining whether a move was felt to be positive.

> It's like the first week you are a bit like [bullied, or they] make fun of you […] I'd rather stay at one school instead of moving […] It is quite hard, obviously, having to switch schools and then make new friends. 13-year-old boy
>
> (Pople, 2022, p. 221)

Research has also documented the impact on children's health and well-being of living in deprived neighbourhoods, including risks related to higher levels of crime, traffic and pollution, as well as a lack of access to safe places to play (Marmot, 2013). In ethnographic research in the US, poor children lived in neighbourhoods where drug dealers and addicts were in attendance (Lareau, 2011, p. 94). To this, qualitative research with children in the UK

highlights the impact of the behaviours of other neighbourhood dwellers on children's quality of life, including the incidence of crime, anti-social behaviour and noise.

> I don't think that [my neighbourhood is] bad I just think it's normal […] The people from next door like that way, they're always screaming and shouting and the dog's always barking and that way they're just opening and closing their doors 24/7 and I don't like it.
>
> (Mahony *et al.*, 2017, p. 31)

Quantitative research on poverty and children's SWB

A small number of quantitative studies examine the relationship between children's socioeconomic circumstances and SWB in the UK. In cross-sectional analyses, Knies (2012), Rees and Bradshaw (2016) and Patalay and Fitzsimons (2018) all found small associations between household income and children's SWB. In longitudinal analyses, household income at age 11 predicted SWB at age 14 in the Millennium Cohort Study (Patalay and Fitzsimons, 2018), and in the UKHLS, there was a significant association between income and the SWB of children aged 13 to 15, but not of younger children (Knies, 2017). Parental job loss was found to have a positive influence on children's SWB at younger ages, but a negative or statistically insignificant association for older children (Powdthavee and Vernoit, 2013). Home ownership, subjective poverty and child deprivation were associated with children's SWB in cross-sectional research (Rees and Bradshaw, 2018), and child deprivation also predicted children's SWB longitudinally (Knies, 2017). However, all of these measures were adult-reported, and none had a large effect on children's SWB when controlling for other factors.

In contrast, child-reported measures of financial circumstances were stronger predictors of children's SWB. In Rees and Bradshaw (2018), children's assessments of family wealth had stronger associations with SWB than adult-reported measures of income, deprivation and financial circumstances. Similarly, in Main (2012), a child-reported deprivation index that

was developed on the basis of qualitative research with children doubled the total explained variation in children's SWB from 9% when age, sex, ethnicity, family structure and an indicator of low income were included, to 18% when the child-reported material deprivation index was added (Main, 2013).

Research aims and hypotheses

Based on the literature reviewed, and the overall aims of this thesis expressed in Chapter 1, there are two primary research aims to this chapter:

1. Using the latest available data from the UKHLS, the first aim is to quantitatively investigate the relationship between different measures of socioeconomic disadvantage and children's SWB[5]. Specific hypotheses to be tested are:

   a. That 'child-centred' measures of socioeconomic disadvantage – i.e. measures that capture aspects of disadvantage highlighted by children in qualitative research - will be stronger predictors of children's SWB than 'adult-centred' measures[6]

   b. Relatedly, that measures of socioeconomic disadvantage that take the child as the unit of analysis and are child-reported will be stronger predictors of children's SWB than adult-reported measures and those that take the household or parents/carers as the unit of analysis

   c. Following Townsend (1979), that direct measures of children's living standards will be stronger predictors of children's SWB than contextual measures of socioeconomic circumstances

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[5] Which, as outlined earlier, is taken to mean cognitive SWB, also known as life satisfaction
[6] Which, as outlined earlier, is taken to refer to indicators that have been shown to be important for adult well-being and may provide an important, contextual understanding of children's socioeconomic circumstances but are not central to children's own accounts.

2. The second aim is to explore these relationships longitudinally to examine the extent to which socioeconomic measures explain changes in SWB over time for children whose circumstances change.

The principles of child-centredness set out in Chapter 1 provide an explanation for the three hypotheses contained within the first research aim. Furthermore, different patterns of intra- and inter-household sharing of resources in households are relevant to the second and third hypotheses. Since much intra- and inter-household is unobservable, it is likely that socioeconomic measures that are specific to the child in question - and direct measures of living standards - will be more strongly related to SWB as they are more likely to capture the consequences of resource allocation that takes place within and across households.

In addition to the overarching research aims, there are also a number of hypotheses about specific measures of socioeconomic disadvantage, which are related to the review of the quantitative and qualitative literature set out in the introduction:

- That household income equivalised using the OECD method will be only weakly related to children's SWB (because income is an indirect measure of children's socioeconomic circumstances); however, an approach to equivalisation that treats adults and children as equivalent will more accurately identify income-poor families and, therefore, be more strongly related to SWB.

- That given the mixture of benefits and disadvantages for children of parental unemployment, living in a workless household will only be weakly related to SWB

- That deprivation will be most clearly associated to SWB for material items that are known to be important to children.

- That neighbourhood deprivation will moderate the relationship between socioeconomic disadvantage and children's SWB because of the social comparisons made by children: children in low-income households living in more affluent areas are expected to have lower SWB than children in households with equivalent incomes in more deprived areas.

The conceptual framework shown below in Figure 10 shows the relationships that are hypothesised to exist between children's socioeconomic and neighbourhood contexts and their SWB. The box with text in large, bold font highlights the explanatory variables that are the particular focus of the chapter. Black lines indicate paths that are analysed in this chapter, while grey lines are paths considered in other chapters. Solid lines indicate paths that are observable, while dashed lines indicate paths that are unobservable but may be taken into account using statistical methods such as fixed effects, which can account for time-invariant unobserved factors.

Figure 10: Conceptual framework showing hypothesized relationships between children's socioeconomic and neighbourhood circumstances and SWB
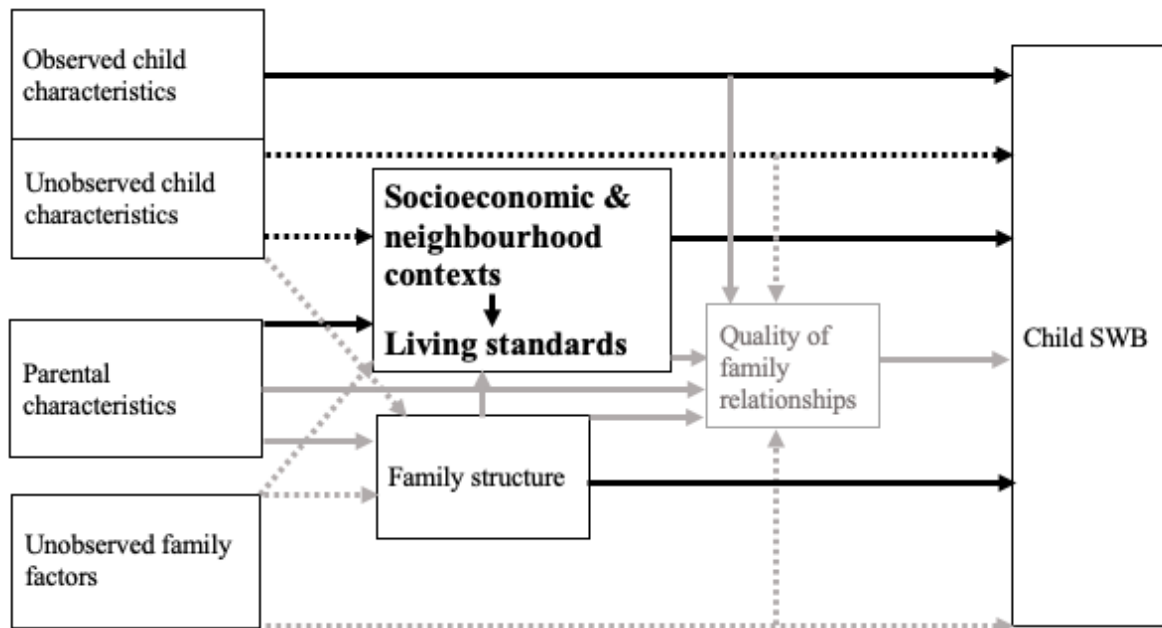
As outlined in Chapters 1 and 2, research has shown children's individual characteristics to be associated with SWB, thus, they are included in this analysis as control variables. In addition, some of these mostly time-invariant, demographic factors are likely to influence the family's socioeconomic circumstances. Family characteristics - most notably, family structure and ethnicity - are also known to be related to both socioeconomic circumstances (e.g.Fisher and Nandi, 2015; Robson, 2010) and children's SWB.

Following Townsend (1979), Figure 10 distinguishes between children's socioeconomic contexts and more immediate or proximal experiences of disadvantage. This acknowledges that whilst factors such as parental education, employment and income have an important bearing on the resources that are available to families, they are not synonymous with families' actual living conditions. On the pathway to children's SWB, contextual factors such as these are conceptualised as being 'upstream' of direct experiences of disadvantage such as poor housing quality, material deprivation, subjective financial difficulties and poverty shame. As mentioned, in some low-income households, parents may sacrifice their own

needs to ensure that their children are not deprived, and families may draw on resources from non-resident family members or accumulated from prior periods of wealth (Bradshaw and Finch, 2003; Main and Bradshaw, 2015). In contrast, in some households that do not reach the threshold for income poverty, children's living standards may be poor due to the inequitable sharing of resources between household members to the detriment of children, families facing additional hidden costs (Social Metrics Commission, 2018), or because living standards have not risen after recent improvements to income (Bradshaw and Finch, 2003; Main and Bradshaw, 2015). Furthermore, children's perceptions of the quality of their environments, social comparisons, awareness of financial stress within the family and own agency are expected to mediate the relationship between their socioeconomic circumstances and SWB.

Data and methods

Analytic samples

Due to the rotating modules meaning that some questions were asked in only odd- or even-numbered waves of the UKHLS, and there being smaller sample sizes in later waves (see Table 2 in Chapter 1 for more details), different waves of the survey were pooled to maximise the number of observations available for analysis. Three pooled samples were created:

1. The main analytical sample for this chapter, which comprises all observations of children participating in the youth survey between waves 1 and 11 with complete information for SWB, the adult-reported socioeconomic circumstances and the control variables, for which there are 37,352 observations relating to 13,843 children

2. A second analytical sample, which contains all observations of children participating in waves 1, 2, 4, 6, 8 & 10 of the survey with complete information for SWB, the adult-reported deprivation items and the control variables, for which there are 17,589 observations relating to 10,829 children

3. A third analytical sample, which contains all observations of children participating in waves 5, 7 and 9 of the survey with complete information for SWB, the child-reported measures of socioeconomic circumstances and neighbourhood and the control variables, for which there are 8,955 observations relating to 6,282 children

Analysis of missingness for the three analytical samples indicates that children were more likely to be missing from all three samples if they are of Pakistani, Bangladeshi or Black African ethnicity and living in a step-parent or single-parent family. However, Table 18 shows that there were no differences in the SWB of children included or excluded from the main analytical sample or the sample containing the child-reported socioeconomic variables.

Conversely, there were significant differences in the SWB of children included or excluded from the sample containing the deprivation measures. Furthermore, in addition to the factors associated with missingness mentioned already, not being included in the deprivation sample was also associated with a higher likelihood of reporting subjective financial difficulties, and a lower likelihood of home ownership.

Table 18: Inclusion/exclusion from analytical sample and SWB

	Low overall SWB	4-domain score
Main analytical sample	NS	NS
Missing	12.9	19.6
Included	12.1	19.6
Deprivation sample	***	***
Missing	13.7	19.4
Included	11.0	19.7
Child-report sample	NS	NS
Missing	13.5	19.8
Included	12.9	19.6

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Measuring child and family characteristics

In this chapter, all multivariate analysis controls for the age, sex and ethnicity of the child as well as family structure, the wave of the survey and country of the UK of residence. Details of how these variables have been categorised are included in Chapter 1.

Measuring children's socioeconomic circumstances within Understanding Society

Following the discussions presented above, various different aspects of children's socioeconomic circumstances contained in the UKHLS survey will be considered as predictors of children's SWB. Different indicators are also included in different waves of the survey hence it is not possible to examine them all alongside each other.

Adult-reported

- Household income / income poverty

- Highest parental qualification

- Number of adults in paid work in household

- Receipt of means-tested benefits

- Housing tenure

- Housing quality: inadequate heating (Waves 1, 2, 4, 6, 8, 9, 10 and 11)

- Overcrowding

- Neighbourhood deprivation using the Townsend Deprivation Score

- Subjective financial difficulties

- Problems paying bills, council tax and for housing

- Family size: number of siblings

- Child deprivation (Waves 1, 2, 4, 6, 8 and 10)

- Material deprivation (Waves 1, 2, 4, 6, 8 and 10)

- Household ownership of consumer durables

Child-reported

- Ownership of a mobile (Waves 1, 3, 5, 7, 9 and 11) and smartphone (Waves 9 and 11)

- Saving and spending habits (Waves 5, 7, 9 and 11)[7]

- Did some paid work last week (Waves 3, 5, 7, 9 and 11)

- Like living in neighbourhood (Waves 3, 5, 7 and 9)

- Feel safe after dark in area (Waves 3, 5, 7 and 9)

- Worry about being victim of crime (Waves 3, 5, 7 and 9)

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[7] The question about spending and saving was also included in Wave 3 but the response options were different and therefore it is not directly comparable.

Table 19 assesses the socioeconomic measures contained in the UKHLS according to the three terms outlined in Chapter 1, namely, whether each measure is child-reported, takes the child as the unit of analysis and is child-centred, meaning that it relates to a topic that is known from research to be important to children. The first two terms are factual, while the third is a subjective assessment based on the qualitative research reviewed earlier in the chapter. One or two references is provided for each to provide some evidence for the judgement given.

Table 19: Child-centredness of socioeconomic measures contained in UKHLS

Measure	Child-reported?	Child as unit of analysis?	Child-centred?
Household income / poverty	No	No	No, because does not measure circumstances of individual child or account for intra- / inter-household sharing (e.g. Main, 2012)
Worklessness	No	No	Yes, but may have positive and negative effects (e.g. Millar and Ridge, 2009)
Deprivation	No	No[a]	Some items are, others not (e.g. Main, 2012)
Housing tenure	No	Yes	Yes, neighbourhood deprivation and crime higher for social / rented housing (e.g. Mahony et al, 2017)
Housing quality	No	Yes	Yes, because of social stigma of poor quality housing (e.g. Ridge, 2002)
Neighbourhood deprivation	No	Yes	Yes, neighbourhood deprivation concern for children (e.g. Ridge, 2002; Mahony et al, 2017)
Subjective poverty	No	No	Yes, because of concern about parental financial stress, esp. for girls (e.g. Mahony et al, 2017; Mahony & Pople, 2018)
Problems paying bills	No	No	Yes, because of concern about parental financial stress, esp. for girls (e.g. Mahony & Pople, 2018)
Receipt of benefits	No	No	Yes, because of stigma of poverty (e.g. Ridge, 2002)
Poverty shame	No	No	Yes, because of stigma of poverty (e.g. Ridge, 2002)
Spending / saving habits	Yes	Yes	Yes, this captures child-reported deprivation (e.g. Ridge, 2002 & Main, 2012)
Ownership of smartphone	Yes	Yes	Yes, this captures child-reported deprivation (e.g. Mahony et al, 2017)
Like neighbourhood	Yes	Yes	Yes, quality of neighbourhood important for children (e.g. Ridge, 2002; Mahony et al, 2017)
Feel safe in neighbourhood	Yes	Yes	Yes, neighbourhood safety concern for children (e.g. Mahony et al, 2017)
Worry about crime	Yes	Yes	Yes, safety and crime concern for children (e.g. Mahony et al, 2017)
Paid work	Yes	Yes	Yes, sense of autonomy gained from paid work (e.g. Ridge, 2002)

[a] The child-deprivation questions ask about all children within the household not the specific child in question.

Child-reported measures of material circumstances

As can be seen in Table 19, there are very few child-reported measures of material circumstances within the UKHLS. The measures that are available relate to children's feelings about their neighbourhood, spending or saving habits, ownership of a mobile phone or smartphone, and participation in paid work. The question about smartphone ownership was filtered, such that children were only asked about this question if they had answered 'yes' to a preceding question about owning a mobile phone. The wording of the question about spending and saving holds promise, in particular, as it allows for the exploration of children's access to pocket money and savings. These are items that were included in Main's (2013) deprivation index and, therefore, have been shown in both qualitative and quantitative research with children to be important indicators of poverty. Furthermore, the three questions about children's perspectives on their neighbourhood tap into the concepts of neighbourhood safety and belonging, which are known from qualitative research to be related to economic disadvantage but also important influences on children's quality of life (Mahony *et al.*, 2017; Ridge, 2009; Ridge, 2002). Lastly, the question about whether children did any paid work last week taps into an activity that might be expected to be onerous for children if involuntary, yet has been shown in qualitative research to confer a sense of autonomy to children in constrained circumstances (Ridge, 2002; Main, 2018).

Household income

Various household income measures are explored in this analysis. Firstly, equivalised household incomes that have been adjusted for inflation using the CPI are used to enable cross-sectional analysis across different waves of the survey. Secondly, in order to see whether the relationship between income and SWB is linear or better represented by a measure that allows for different parts of the income distribution to have a distinctive relationship to SWB, income quintiles are considered. Thirdly, to reflect the fact that there

may be 'diminishing returns' to SWB as incomes become higher, equivalised household income is also log-transformed. Fourthly, given the focus in this thesis on children's experience of socioeconomic disadvantage, relative poverty - which is calculated as 60% of median equivalised household income using the modified OECD scale - is also considered.

Initial inspection of the total, unadjusted incomes of the households in which children live identified a small number of observations of households with negative incomes. It is possible for families to have negative incomes if losses have been incurred from self-employment and, indeed, 94% of these households had a self-employed father. As only 16% of these households were 'finding it difficult' financially, a decision was made to exclude observations of children in households with negative incomes from the analytical sample. A similar decision was made about households above the 99th percentile, whose circumstances are also likely to be atypical. This group of children were not excluded from the analytical sample but they were excluded from non-categorical measures of income.

There were also a small number of households with zero incomes. It is, of course, possible to have zero income if the family has no recourse to public funds (NRPF), and indeed for 97% of these observations, no benefits were reported. Given that 61.3% of observations of zero income were either not born in the UK or had missing information on where they were born, NRPF is a plausible explanation for most of these cases. Furthermore, 88.5% of families with zero incomes were 'just about getting by or finding it difficult'. It is not possible to verify that these families have zero incomes and if so, what these families are living on, thus, these are retained in the analytical sample.

Equivalisation methods

Following the earlier discussion of equivalisation, this analysis compares three different

approaches to equivalisation:

- Using the OECD modified scale, an equivalisation factor of 0.3 is given to children

  aged 10 to 13 and a factor of 0.5 to 14- to 15-year-olds

- An equivalisation factor of 0.3 is given to all children aged 10 to 15 to ensure that a

  change to poverty status is not brought about as an artefact of a child in the household

  reaching their 14th birthday

- An equivalisation factor of 0.5 is given to all children aged 10 to 15 to reflect the

  evidence in support of there being a similar cost (in the UK) to families of an

  additional child as compared to an additional adult

Neighbourhood deprivation

A Townsend Deprivation Score (Townsend, Phillimore and Beattie, 1988) was allocated to

children's households by matching the Lower Super Output Area (LSOA) code for each

household from the 2011 Census with Townsend Deprivation Scores for each LSOA, which

are provided by the UK Data Service (University of Essex, 2021). In the UKHLS,

geographical information at the LSOA level is protected due to the sensitivity of this

information, thus, a Special Licence was obtained in order to carry out the analysis.

Subjective financial difficulties and poverty shame

This chapter also includes a question asked of adult respondents in all waves about how well

they are managing financially, and two questions asked in waves 7 and 8 only about whether

they have felt embarrassed or small because of low income. As described in Chapter 1, given

the low levels of missing data for mothers in relation to these questions, the mother's view

was used if available, with data from the father or household reference person substituted if not.

Analytic strategy

The results section in this chapter starts by presenting the distributions, levels of missing data and bivariate associations with SWB for children's characteristics and socioeconomic circumstances. The univariate and bivariate statistics relate to the main analytical sample, while missing data relate to item non-response for all 39,752 observations for waves 1 to 11 of the survey. This gives an initial indication of the aspects of children's socioeconomic circumstances that are associated with their SWB.

The child-reported socioeconomic measures and adult-reported material items are examined in detail, including to see whether lacking individual material items is associated to measures of household income, resulting in the construction of two deprivation indices: one relating to consumer durables, and the other relating to material deprivation items. There is also a focus on equivalisation to explore how the income poverty line would be drawn differently using the OECD modified scale and an equivalisation factor of 0.3 or 0.5 for all children, and what proportion of children would fall into different income quintiles using these three different approaches.

Next, the results of cross-sectional, multivariate analysis are presented to identify whether each socioeconomic variable has a statistically significant relationship with SWB once a set of control variables are included. Each socioeconomic variable is entered into a logistic regression with low SWB as the outcome variable and a linear regression with 4-domain SWB (described in more detail in Chapter 2) as the outcome variable. A final step for the cross-sectional analysis is to enter the socioeconomic variables that are significant predictors

of SWB in the previous step into logistic and linear regressions in blocks of predictors. The control variables - which include child and family characteristics, as well as dummy variables for each wave of the survey - and background socioeconomic variables are entered first, followed by the variables capturing children's more immediate experiences of socioeconomic disadvantage. Although some of the bivariate associations between the control or socioeconomic variables and SWB were not significant, variables included in the conceptual model in Figure 9 were retained in subsequent models to ensure that potentially important contextual variables were included. To assess the significance of the models, the Wald F-statistic is presented, which takes account of the complex survey design. The R-square statistic for the linear regressions is also presented, and the improvement in this statistic obtained for subsequent blocks of predictors regression is discussed. The youth weighting variables supplied with the dataset were applied after being scaled for different combinations of waves. In the multivariate analysis, the sample sizes were held constant to allow enable the comparison of different models.

Finally, longitudinal analysis is presented to explore how changes in children's socioeconomic circumstances are associated with SWB. Stability and change in children's lives is explored through the analysis of repeated measures of children who have participated in more than one wave of the survey, while fixed, random and hybrid effects models consider the extent to which changes in individual children's circumstances and differences between children can explain variation in children's SWB.

Due to the high level of missing data for the deprivation scale, and the assumption that these data are Missing at Random (MAR) - meaning that missingness is related to variables that are observable in the dataset such as ethnicity and socioeconomic disadvantage - multiple

imputation was used to generate 20 copies of the dataset using the 'mi' suite of commands in Stata (StataCorp, 2019). In each of the 20 copies of the dataset, the missing values were replaced with independent, random estimates drawn from the predictive distribution of the missing values under the imputation model, which contains the variables included in the analysis models (i.e. children's demographic characteristics and socioeconomic circumstances[8]). The parameters of interest from each imputed dataset are then combined using Rubin's rules (Rubin, 2004).

Results

Descriptive statistics for the child and family characteristics are shown in Table 20, which also shows bivariate statistics of how each measure was associated individually with children's 4-domain SWB scores and low overall SWB. Most of these variables had no missing data because of the way that the information is collected. All of the child and family characteristics except ethnicity had significant bivariate associations with children's low SWB, and all had significant bivariate associations with children's 4-domain SWB scores. Children were significantly more likely to have low SWB and lower 4-domain SWB scores if they were female, older, were living in a step-, single-parent or non-biological-parent families, were 'only' children or had two or more siblings, had mothers in the youngest age group, or were living in England. It is interesting to note the differences in SWB that are found for children of ethnic groups that are commonly banded together, most notable Black African and Black Caribbean children who are at opposite ends of the SWB distributions for both low overall SWB and 4-domain scores.

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[8] Specifically, the age, sex and ethnicity of the child, family structure, number of co-resident siblings, equivalised household income quintile, Townsend deprivation quintile, worklessness, receipt of means-tested benefits, housing tenure, whether behind on bills, and subjective financial difficulties.

Table 20: Univariate and bivariate analysis of control variables and children's SWB

Child and family characteristics	% missing data	% of sample	% with low SWB	Mean SWB 4-domain scores
Sex	-		***	***
Female		49.8	14.5	19.3
Male		50.2	11.4	19.7
Age	-		***	***
10		16.0	11.1	20.7
11		16.8	9.9	20.4
12		16.8	11.4	19.8
13		17.2	12.7	19.1
14		16.8	15.6	18.6
15		16.5	16.8	18.3
Ethnicity	-		NS	***
White		85.2	13.0	19.4
Mixed		4.3	14.0	19.5
Indian		2.4	11.1	20.2
Pakistani		2.4	11.7	20.3
Bangladeshi		1.0	12.3	20.1
Black Caribbean		0.8	14.9	19.1
Black African		2.1	10.7	20.0
Other (incl. missing)		1.8	11.4	20.0
Family structure	-		***	***
Two biological-parent		66.0	10.7	19.8
Step-parent		9.1	16.9	18.8
Single-parent		23.2	17.2	18.9
Other family		1.7	22.0	18.7
Birth order	-		NS	***
Only children		14.4	14.0	19.2
First-born		34.6	11.9	19.6
Second-or later born		51.1	13.3	19.5
Number of siblings	-		**	***
0		14.4	14.0	19.2
1		45.9	11.9	19.6
2		25.6	13.1	19.4
3 or more		14.1	15.1	19.6
Maternal age (at birth)	5.4		***	***
21 years and under		9.3	17.6	19.2
22 to 29 years		36.7	13.1	19.5
30 to 37 years		44.5	11.5	19.6
38 years and over		9.4	12.1	19.5
Country	<0.1		***	***
England		83.9	13.4	19.4
Wales		4.3	9.4	19.7
Scotland		8.7	11.3	19.8
Northern Ireland		3.2	9.4	20.1

* p<0.05 ** p<0.01 *** p<0.001

There is considerable overlap between birth order, maternal age and number of siblings because children with older mothers or a later birth order are more likely to have more siblings. Thus, a decision was made to retain just number of siblings in the multivariate analysis, as it seemed to have the clearest relationship with socioeconomic factors and children's SWB. Sibling relationships are also a focus of Chapters 5 and 6, thus, it seemed important to include them here.

Table 21 shows the same information for the adult-reported socioeconomic variables that are asked in every wave of the UKHLS. Once negative household incomes and those above the 99th percentile were excluded, mean non-equivalised household income adjusted for inflation was £3364.59 per month and mean equivalised household income (using the OECD modified scale) was £1428.79. There were higher levels of missing data for the socioeconomic variables, ranging from less than 0.1% (for neighbourhood deprivation) to 7.2% (for household income, which – as explained – excludes those with incomes that are negative or over the 99th percentile). At first inspection, problems paying for housing had a high proportion of missing data because the question was inapplicable to those who own their properties outright. For this reason, outright owners were coded as not having problems paying for housing. The high proportion of missing data for problems paying for council tax was mainly due to this question not being applicable in Northern Ireland (the proportion missing excluding Northern Ireland residents was 2.5%). It is worth pointing out that the benefits variables do not generate missing data because there is only data on benefits that are received, not about benefits that are not received.

Table 21: Univariate and bivariate analysis of adult-reported socio-economic variables and children's SWB

Adult- reported socio-economic variables	% missing data	Mean or %	% with low SWB	Mean SWB 4-domain scores
Household income (non-equivalised)	7.2	3395.51		
Household income (equivalised)	7.2	1469.30		
Household income quintiles	0.7		***	***
Lowest quintile		23.1	15.4	19.4
2nd quintile		25.7	15.1	19.2
3rd quintile		21.5	12.2	19.5
4th quintile		16.7	10.4	19.8
Highest quintile		13.0	8.6	19.9
Relative income poverty	0.8		**	NS
Yes		18.1	14.7	19.5
No		81.9	12.5	19.5
Workless household	0.6		***	***
Yes		12.8	19.0	19.2
No		87.2	12.0	19.5
Highest parental qualification	1.1		**	***
No qualification		4.1	16.9	19.7
Other qualification		5.0	15.5	19.5
GCSE etc		19.0	14.4	19.3
A-level		19.7	13.3	19.3
Other higher education		16.3	13.2	19.4
Degree		36.0	11.0	19.7
Receipt of means-tested benefits	1.5		***	***
Yes		33.6	16.9	19.2
No		66.4	10.9	19.6
Problems paying bills	1.1		***	***
Behind on some or all bills		9.3	19.0	19.0
Up to date on bills		90.7	12.3	19.5
Problems paying for housing	2.1		***	***
Yes		11.5	15.9	19.3
No		88.5	12.5	19.5
Problems paying for council tax	8.7		***	***
Yes		10.7	18.0	19.1
No		89.3	12.5	19.5
Overcrowding (persons per room)	1.0		*	**
Yes		16.6	14.6	19.6
No		83.4	12.6	19.4
Housing: tenure	1.4		***	***
Social renter		22.5	18.1	19.0
Private renter		12.1	16.8	19.3
Owned with mortgage		54.6	10.4	19.7
Owned outright		10.8	10.4	19.6

Neighbourhood deprivation	<0.1		***	***
Most deprived quintile (5)		18.5	15.6	19.4
2nd quintile (4)		18.7	15.2	19.2
3rd quintile		20.7	12.5	19.6
4th quintile		20.5	12.2	19.5
Least deprived quintile		21.6	9.7	19.7
Subjective financial situation	0.9		***	***
Finding it very difficult		4.2	15.6	19.1
Finding it quite difficult		10.1	18.4	19.0
Just about getting by		29.5	14.6	19.4
Doing alright		36.9	11.6	19.6
Living comfortably		19.3	9.5	19.8
Housing: adequate heating [a]	1.3		***	***
No		6.0	19.3	18.7
Yes		94.0	12.8	19.5
Felt small by low income [b]	4.2		**	***
Yes		14.7	19.7	18.9
No		85.3	12.9	19.5
Felt embarrassed by low income [b]	4.1		**	***
Yes		24.3	17.8	19.0
No		75.7	12.7	19.6

* p<0.05 ** p<0.01 *** p<0.001

[a] This question was included in Waves 1, 2, 4, 6, 8, 9, 10 & 11

[b] These questions were included in Waves 7 & 8

At the bivariate level, there were significant associations between children's SWB and all of the socioeconomic variables in the expected directions. Children had lower SWB if they were living in households in lower income quintiles[9] or that were workless, if they were in receipt of means-tested benefits, if parents reported problems paying bills, for housing or council tax, if parents assessed their financial situation as 'difficult', if they lived in rented accommodation and if parents had lower levels of education. However, children that lived in overcrowded accommodation had a higher likelihood of low overall SWB but also higher 4-domain SWB scores. This is likely to be because the calculation for overcrowded accommodation (number of persons per room) is related to the number of siblings, yet, as was seen in Table 20, having 3 or more siblings was associated with higher 4-domain SWB

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[9] The OECD modified scale is used for equivalisation for both the income poverty measure and the income quintiles. Later in the chapter other equivalisation factors are explored.

scores. The only association that was not significant was between income poverty and 4-domain SWB scores.

Interestingly, parental education, income quintiles and the Townsend Deprivation Score quintiles had a u-shaped rather than a monotonic relationship with 4-domain SWB scores at the bivariate level, with higher mean scores at both ends of the scale. Children with parents with no qualifications had significantly higher 4-domain SWB scores than children whose parents had GCSEs, A-levels or other higher education qualifications, while children in the lowest income quintile and Townsend Deprivation quintile had significantly higher scores than those in the second lowest quintile. It is likely that this is related to there being a higher proportion of ethnic minority groups in the lowest quintiles since Table 20 shows that children in some ethnic groups – most notably Indian, Pakistani, Bangladeshi and Black African - have higher 4-domain SWB scores. Indeed, Table 22, shows parental qualifications, Townsend deprivation scores and income quintiles by ethnicity, and confirms the higher representation of all ethnic minority groups – and particularly Bangladeshi and Pakistani - in the most disadvantaged categories.

Table 21 also shows three adult-reported questions that were not asked in every wave of the survey: one about adequate heating (asked in all waves but 3, 5 and 7) and two about poverty shame (asked in waves 7 and 8 only). Again, there were significant associations between children's SWB and the socioeconomic variables in the expected directions. Children were more likely to have low SWB and lower 4-domain SWB scores if their home had inadequate heating, and if their parent felt small or embarrassed by low income.

Table 22: Income quintiles, Townsend deprivation quintiles and parental qualifications by ethnicity

	White	Mixed	Indian	Pakistani	Bangladeshi	Black Caribbean	Black African
Income quintile							
Lowest	21.2	22.7	25.3	55.1	57.3	30.5	32.8
2	25.8	22.3	26.4	25.7	26.3	32.6	29
3	22.2	19.7	19.2	11.9	9.9	17	20
4	17.4	17.8	15.2	4.4	4.1	13.3	11.9
Highest	13.4	17.5	13.9	2.9	2.5	6.6	6.4
Townsend deprivation quintile							
Most deprived	13.4	34.2	34.4	67.6	80.6	65.0	62.8
4	18.4	19.5	22.8	19.1	12.0	17.3	18.6
3	22.0	15.2	20.8	6.9	3.4	9.7	8.9
2	22.5	13.2	10.6	4.5	3.7	6.0	8.1
Least deprived	23.8	17.9	11.5	1.9	0.3	2.0	1.7
Highest parental qualification							
No quals	3.5	5.3	4.5	11.6	22.3	5.8	7.2
Other quals	4.5	4.6	5.6	8.4	13.8	9.1	8.3
GCSE	19.9	14.0	8.6	24.6	21.3	14.0	7.9
A-level	20.5	12.6	17.2	16.5	18.3	23.5	9.6
Other higher	16.7	12.5	21.4	8.2	5.0	22.6	18.5
Degree	35.0	51.1	42.8	30.8	19.4	25.1	48.5

Child-reported measures

Table 23 shows descriptive statistics and bivariate associations for the child-reported

socioeconomic variables and SWB. There were low levels of missing data for these variables.

The questions about children's neighbourhoods and spending and saving habits had clear

bivariate associations with SWB in the expected directions, with children who do not like

living in their neighbourhoods, those who feel unsafe, worry about crime, and do not have

pocket money or spend money as soon as they get it having a much higher likelihood of low

SWB and markedly lower 4-domain SWB scores.

Table 23: Descriptive and bivariate analysis of child-reported socio-economic variables and children's SWB

Child- reported socio-economic variables	% missing data	% of sample	% with low life SWB	Mean SWB 4-domain scores
Mobile ownership [a]	0.9		*	***
No		12.6	11.5	19.4
Yes		87.4	13.6	20.4
Smartphone ownership [b]	0.4		NS	***
No phone		9.1	10.6	20.8
Non-smartphone		5.6	15.5	19.7
Smart-phone		85.4	16.9	19.1
Spending / saving habits [c]	1.5		***	***
I generally do not have pocket money		9.5	23.1	19.0
I spend money as soon as I get it		14.0	20.2	18.6
I save money and try not to spend it		33.5	17.4	19.3
I save up to buy things I want		43.0	12.1	19.9
Like living in neighbourhood [d]	1.5		***	***
No		10.0	28.2	17.1
Yes		90.0	11.4	19.8
Feel safe in area after dark [d]	1.7		***	***
Very unsafe		12.2	22.4	18.9
A bit unsafe		30.1	14.6	19.4
Fairly safe		42.3	10.3	19.7
Very safe		15.4	10.4	20.0
Worry about being victim of crime [d]	1.4		***	***
A big worry		4.0	28.1	18.3
A bit of a worry		11.2	23.0	18.4
An occasional doubt		30.6	14.7	19.0
Not a worry at all		54.2	9.1	20.2
Paid work [e]	2.3		NS	***
No		85.2	13.6	19.5
Yes		14.8	14.7	19.2

* $p<0.05$ ** $p<0.01$ *** $p<0.001$
[a] This question was included in Waves 1, 3, 5, 7, 9 & 11
[b] This question was included in Waves 9 & 11
[c] This question was included in Waves 5, 7, 9 & 11
[d] This question was included in Waves 3, 5, 7 & 9
[e] This question was included in Waves 3, 5, 7, 9 & 11

There was a less clear relationship between mobile phone ownership, paid work and SWB, however. Table 23 shows that 87.4% of children owned a mobile phone across all waves in which this question was asked, and that 85.4% of children owned a smartphone (in waves 9 and 11). Interestingly, having a mobile of any kind and having a smartphone were both

associated with lower SWB at the bivariate level, but this is likely to be influenced in part by younger children and those in certain ethnic groups being less likely to have a phone while also having higher SWB scores. Children who had done paid work in the last week had lower 4-domain SWB scores than those who had not, which suggests that the demanding aspects of working may be more significant for SWB than the sense of autonomy that it may confer. However, as 15-year-olds were almost twice as likely to be in paid work as 10-year-olds, this finding may be explained by the age distribution of SWB. The confounding role of age – as well as sex and ethnicity – is accounted for in later multivariate analysis, which controls for these variables.

Table 24 shows the extent to which children's perspectives on their material and neighbourhood circumstances were related to local area-level deprivation and other measures of socioeconomic circumstances. The zero-order correlations between the child-reported measures and objective or adult-reported measures were generally low, which indicates that they are capturing distinct aspects of children's material circumstances. The highest correlations related to Townsend Deprivation quintiles and whether children feel safe and like their neighbourhoods.

Table 24: Correlations between selected child- and adult-reported socioeconomic circumstances

	Mobile phone ownership	Pocket money / savings	Likes neighbour-hood	Worries about crime	Feels safe in area after dark
Income quintile [a]	0.07	0.06	0.09	0.02	0.07
Townsend Deprivation quintile [a]	0.10	0.05	0.13	0.09	0.17
Home owned	0.02	0.08	0.11	0.05	0.06
Workless household	-0.04	-0.05	-0.06	-0.03	-0.04
Receipt of benefits	-0.03	-0.06	-0.08	-0.06	-0.06
Parental degree	-0.02	0.03	0.06	0.02	0.06
Problems paying bills	-0.02	-0.04	-0.06	-0.04	-0.03
Subjective financial difficulties	-0.04	-0.05	-0.11	-0.05	-0.07

[a] Higher quintile = less deprived

Since the child-reported questions about aspects of their material circumstances are less clearly measuring socioeconomic circumstances, a series of logistic regressions were carried out to explore their association with child characteristics and selected adult-reported socioeconomic variables. Table 25, which shows the results of these, indicates that different demographic factors were associated with the five child-reported measures.

Table 25: Logistic regressions of socioeconomic and demographic predictors of child-reported material circumstances

	Odds ratios				
	Lacks a mobile phone	Lacks pocket money & savings	Dislikes neighbour-hood	Worries about crime	Feels unsafe in area after dark
Female	0.60***	0.97	1.03	1.88***	1.08
Age	0.51***	0.99	1.13***	0.77***	0.94**
Ethnicity (White)					
Mixed	1.52**	0.92	1.19	0.90	0.91
Indian	3.26***	2.05***	0.90	0.99	1.02
Pakistani	4.99***	0.83	0.89	1.26	1.22
Bangladeshi	5.27***	0.81	0.54	1.32	1.37
Black Caribbean	0.95	0.82	1.42	1.04	1.44
Black African	1.49	1.02	1.43	0.95	1.42
Other	2.06***	0.85	0.81	1.02	1.67*
Income quintile (most deprived)					
2nd quintile	0.77**	0.95	1.11	1.11	1.02
3rd quintile	0.74**	0.90	0.97	0.91	0.91
4th quintile	0.68***	0.94	0.79	0.92	1.09
Highest quintile	0.80	0.74*	0.58*	0.74**	0.96
Worklessness	1.29*	1.12	1.05	1.31**	1.20
Parental degree	1.36***	0.84*	0.85	0.75***	0.80*
Financial difficulties	1.05	1.14	1.36*	1.06	1.04
Home owned	0.94	0.68***	0.63***	1.00	0.81*
Unweighted N	38944	37873	35814	35780	35822
F test	40.92***	4.88***	5.78***	15.74***	2.37***
	(31, 2747)	(29, 2643)	(28, 2579)	(28, 2578)	(28, 2580)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Each model includes wave, country, family structure and number of siblings. Sample size not held constant.

As expected, younger children were more likely than older children to lack a phone, as were boys, which likely reflects greater parental concern for girls' safety at this age. Children of Indian, Pakistani, Bangladeshi and Mixed ethnicity were considerably more likely to lack a phone than White children, which may help to explain why mobile phone ownership is associated with lower SWB. Older age was associated with a lower likelihood of worrying about crime, feeling unsafe after dark and, conversely, liking the neighbourhood. Girls were more likely than boys to worry about crime, but sex was not associated with the other variables. Compared to children of White ethnicity, Indian children were more likely to lack pocket money and savings, and whilst most non-White ethnic groups were more likely to feel unsafe after dark, none of the coefficients were significant at the 95% confidence level.

The adult-reported measures of socioeconomic circumstances had differential associations with the five child-reported socioeconomic and neighbourhood measures, however, the overall picture was of correspondence. Children in the middle three income quintiles were less likely than children in the lowest quintile to lack a mobile phone, while children in the top income quintile were less likely to lack pocket money and savings, to dislike their neighbourhood and to worry about crime. Higher parental education was associated with a lower likelihood of experiencing three of the measures of disadvantage, but a higher likelihood of lacking a mobile phone. This provides indicative evidence of parental concern about technology running counter to the assumption that a lack of a mobile phone arises solely from deprivation. Conversely, living in a workless household was associated with higher odds of lacking a mobile phone, and of being worried about crime. Living in a home that is owned was protective against three of the measures, including two relating to their neighbourhoods, in line with qualitative research evidence showing that children living in social housing are less likely to feel safe and talk positively about their local neighbourhoods

(Mahony *et al.*, 2017). Lastly, subjective financial difficulties were associated with not liking the neighbourhood.

Focusing just on waves 9 and 11, which included a supplementary question about ownership of a smartphone, Table 26 shows how different types of phone ownership are related to income poverty once children's characteristics are taken into account. There was a trend of living in an income-poor household being associated with higher odds of lacking a mobile phone or smartphone, or owning a non-smartphone, although none of these findings were significant.

Table 26: Ownership of a mobile phone or smartphone and income poverty

	Odds of lacking / owning item if household income-poor
Mobile phone	1.33 NS (lacking item)
Smartphone	1.48 NS (lacking item)
Non-smartphone	1.35 NS (owning item)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Model includes age, sex, ethnicity, wave, country, family structure and number of siblings (odds ratios not shown). Waves 9 & 11 only.

Household deprivation

Ownership of consumer durables

In every wave of the UKHLS, adults are asked about ownership of a number of common household items or 'consumer durables' such as whether the household has a washing machine, television, car, computer and internet access. On the face of it, these questions are a useful source of information about household deprivation. However, the wording of the questions does not allow for participants to say whether they would like to have items that they do not own. Therefore, what may be construed as involuntary and indicative of constraint may, in fact, be a choice made by the participant. For example, households that lack a television and other technological devices may do so as an active choice - possibly

because they want to limit the screen time of children - rather than because they cannot afford these items. Of course, decisions about ownership of different items and the values underpinning these decisions are likely to be made by adults in the household and may not be shared by children. Nonetheless, there may be a different character to the deprivation experienced by children who lack items because of active choices made by their parents, compared to deprivation that is enforced due to economic constraint.

Notwithstanding these unresolved questions, a number of these items were selected for inclusion in a consumer durable index based on criteria set out in Townsend (1979), Mack and Lansley (1985), Gordon and Pantazis (1997) and Gordon et al (2013). First, items were selected if they were owned by a high enough proportion of the population to be considered a household necessity (e.g. >50%) but not universally owned (Main, 2013). As can be seen in Table 27, a washing machine, mobile phone, TV and freezer were owned by more than 97% of the population, thus these items were not selected[10].

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[10] Notably, three of these items - albeit a 'telephone' rather than specifically a mobile phone - were dropped from the PSE Deprivation Measure in 2012 for similar reasons. They are, however, contained within the EU 2020 severe material deprivation index (Gordon, 2017)

Table 27: Ownership of consumer durables in households containing 10 to 15-year-olds and association with income poverty

	% missing	% owning item	Odds of lacking item if household income-poor	Consumer durable index
Consumer durables				
Washing machine	1.2	99.2	2.87***	No
TV	1.2	99.0	3.06***	No
Mobile	1.2	98.9	2.52***	No
Freezer	1.2	97.4	1.61***	No
Microwave	1.2	93.7	1.27*	No
Landline	1.2	90.1	2.63***	No
DVD player	1.2	87.0	2.14***	No
Car	2.4	87.0	4.12***	Yes
Tumble drier	1.2	70.3	1.59***	No
Dishwasher	1.2	57.4	2.82***	Yes
Computers				
Access to internet	2.9	98.0	2.39***	Yes
Home computer / PC [a]	0.6	95.3	3.42***	Yes
Laptop [b]	2.1	84.2	2.45***	No
Tablet [b]	2.1	79.9	1.76***	No
Desktop [b]	2.1	43.3	1.19 NS	No
None of the above [b c]	2.1	2.2	6.43***	No

* $p<0.05$ ** $p<0.01$ *** $p<0.001$
[a] This item was included in Waves 1, 2, 3, 4, 5, 6 & 7.
[b] These items are only included in Waves 8, 9, 10 & 11.
[c] The list of options also includes 'other computer' and 'netbook', thus, 'none of the above' excludes these as well.

The next step was to ensure that items had construct validity as a measure of poverty, which was tested through simple logistic regressions examining the association between each item and income poverty. Although deprivation is not expected to overlap completely with income poverty, the latter is widely used as a way of validating items (Gordon and Nandy, 2012). As shown in Table 27, all of the household items except a desktop computer were significantly related to income poverty, with the strongest associations evident for access to a car (*OR* = 4.12) and some kind of computer at home (*OR* = 6.43).

Lastly, items were assessed on the basis of face validity. In recent years, some of the household items - such as a landline and DVD player - have been superseded by

communication technologies that render them largely redundant. Other items may be lacked because of pro-environmental or anti-consumerist reasons or, simply, individual preferences. For these reasons, as well as the focus on child-centred measurement, just four items were selected for inclusion in the consumer durable index. Three of these - access to the internet, a computer at home[11] and a family car – could be said to be 'child-centred' since research with children highlights these items to be important to children for their social participation (Main and Bradshaw, 2014; Main, 2013). The fourth item - a dishwasher - was selected for its ability to discriminate between poor and non-poor families.

Material deprivation

In Waves 1, 2, 4, 6, 8 and 10 of the UKHLS, a series of questions about material deprivation were asked of the household reference person, including whether adults in the family have enough money to keep the house in a decent state of repair, to replace worn-out furniture when it is broken, and have spending money for themselves. There is some repetition between these items and other questions asked elsewhere in the survey, including a family holiday and having enough money to keep up with bills. However, in contrast to the household items discussed thus far, these items allow for participants to indicate whether they want or do not want items that they lack (Gordon and Pantazis, 1997). Thus, it is possible to discern differences in the extent to which items are wanted or needed.

As can be seen in Table 28, unaffordability was the explanation given by the vast majority of respondents for lacking savings, money for themselves, a family holiday, or enough money to

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[11] Although these four items are asked in every wave of the survey, from wave 8 onwards the single-item question about ownership of a 'home computer' was replaced by a series of questions about different types of computers. Thus, the item measuring whether the household has a computer at home does not have consistent wording over time.

keep their house in a decent state of repair, to pay for electrical goods or worn-out furniture and to keep up with bills. In comparison, a large proportion of respondents lacking contents insurance said that they did not need this. Table 28 also shows the bivariate associations between the material deprivations and income poverty, all of which were statistically significant both when adaptive preferences were taken into account, and when they were disregarded. Adaptive preferences - or the 'adjustment of people's aspirations to feasible possibilities' (Elster, 1982) - relate to the concept of respondents saying that they do not want material items when the lack of those items is motivated by unaffordability rather than a genuine choice. It is notable that the odds ratios hardly differed in size when adaptive preferences were taken into account, indicating that lacking these items was associated with poverty regardless of how the 'lack' is justified by the respondent. Nonetheless, only a small proportion of people said that they did not want or need these items.

Table 28: Ownership of material deprivation items in households containing 10 to 15-year-olds and association with income poverty

	%				Odds ratios of being income-poor if lacking item	
	Missing	Item owned	Cannot afford item	Item not needed	Stated preferences	Adaptive preferences
Keep up with bills [b]	2.1	91.2	8.4	0.4	3.39***	3.25***
House [a]	9.5	80.7	17.8	1.6	2.55***	2.57***
Contents insurance [a]	3.4	79.5	12.5	8.0	3.99***	4.47***
Money for self [b]	2.3	69.5	26.3	4.2	3.11***	3.14***
Electrical goods [a]	2.5	64.9	30.4	4.7	2.92***	3.01***
Savings [a]	1.6	64.7	31.5	3.8	2.74***	2.90***
Family holiday [a]	1.8	64.0	30.9	5.1	3.07***	3.23***
Furniture [a]	2.2	56.3	37.3	6.4	2.59***	2.65***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$
[a] These items are in Waves 1, 2, 4, 6, 8 & 10
[b] These items are only included in Waves 4, 6, 8 & 10.

Child deprivation

The items and activities discussed thus far relate to the household and may or may not be accessible to – or considered important by – children themselves. In addition to these, in

Waves 1, 2, 4, 6, 8 and 10 of the UKHLS, adults were asked about items and activities owned by or accessible to children. These items are similar to those contained within other deprivation indexes such as the PSE Deprivation Index (Gordon, 2017) and are likely to be important to children within the age range in question. As they are designed specifically to be indicators of deprivation, they allow for respondents to say whether they do not want or cannot afford items that are lacked, except 'space outdoors to play', which was asked as a 'yes/no' binary.

However, it is important to highlight that these items are not designed specifically on the basis of children's views of what they need in order to fit in with their peers and enjoy a decent standard of living. They are also asked of adults rather than of children, who may not share the same view as their children as to what is wanted or needed. Perhaps most importantly, adults are asked to give a response for *all* of the children aged under 16 living in their household, thus, the response given may not be relevant to the particular child in question. Children of different ages and backgrounds are likely to vary in their perspectives of whether they want and need each of these items. It is precisely these types of shortcomings that led Main (2013) to develop an alternative index of child deprivation to capture children's own perceptions of their material needs. The resulting index included regular pocket money, saving money, trainers, the right kind of clothes to fit in with friends, a garden or park nearby where children can safely spend time with friends, a family car, a holiday away from home at least once a year, and family day trips at least once a month (Main, 2013). Some of the deprivation items in the UKHLS are similar to those contained within Main's deprivation index – e.g. a family holiday and space outdoors to play – but others are not.

Table 29: Ownership of child deprivation items in households containing 10 to 15-year-olds and association with income poverty

	%				Odds ratios of being income-poor if lacking item	
	Missing	Item owned	Cannot afford item	Item not needed	Stated preferences	Adaptive preferences
Warm coat [b]	1.3	98.7	0.6	0.7	2.22 †	1.44 NS
Celebrations [a]	2.9	97.6	2.0	0.4	3.65***	3.06***
Space outdoors to play [c]	2.6	95.5	NA	N/A	2.58***	N/A
School trips [a]	3.3	95.5	2.9	1.6	3.00***	2.22***
Leisure equipment [a]	3.1	92.8	4.6	2.6	3.95***	2.92***
Fruit and veg [b]	1.6	91.3	1.7	7.0	2.31***	1.42**
Hobby [a]	3.4	87.8	4.6	7.6	3.24***	1.94***
Own bedroom [a]	8.0	87.4	10.6	2.0	2.90***	2.80***
Organised activity [b]	2.9	81.7	4.6	13.7	3.33***	1.81***
Friends over [a]	5.0	75.5	4.3	20.2	2.87***	1.19**
Family holiday [a]	3.3	72.1	24.7	3.2	3.37***	3.27***

† p<0.1 * p<0.05 ** p<0.01 *** p<0.001
[a] These items are in Waves 1, 2, 4, 6, 8 & 10
[b] These items are only included in Waves 4, 6, 8 & 10.
[c] The question about space outdoors to play was not asked in the same format so it is not able to distinguish between those who could not afford this and those not wanting or needing this.

As can be seen in Table 29, a large proportion of adults reported that their children had access to the child deprivation items, and no items were accessed by less than 50% of children. However, there were marked differences in the extent to which lacked items were felt to be needed. The vast majority of adults reporting that they did not take a family holiday said that they were not able to afford this (88%), rather than that they did not need a holiday (12%). Responses were similar - but less pronounced – in respect of children having their own bedroom, leisure equipment, celebrations on special occasions, and being able to go on school trips. For all of these items, households were more likely to explain a lack in terms of not being able to afford them.

The opposite was true of the remaining items. Most notably, more than four-fifths of households where children did not have their friends over said that their child did not need

this (81%), rather than that they could not afford this (19%). There was a similar picture for children having access to fruit and vegetables each day, regular organised activity, and a hobby, suggesting that a lack of access to these activities and items was viewed more in terms of preferences than constrained household budgets. If questions about these items were asked of children, there would be a case for rejecting them on the basis of desirability. However, it is plausible that children would give different responses to their parents about whether they would like these items, thus they were retained in the analysis at this stage.

The next step was to explore the bivariate associations between each item and income poverty. Similar to the material deprivation items, as respondents were able to say whether they could not afford or did not need an item that they lacked, it was possible to take account of adaptive preferences when exploring the associations with poverty. As can be seen in Table 29, all of the items except for a warm coat were significantly associated with poverty regardless of whether adaptive preferences were taken account of or not. However, when adaptive preferences were assumed – i.e. respondents stating that they did not need items were treated as deprived – the odds ratios for some of the items reduced in size, most notably for having friends over, regular organised activity and consumption of fruit and vegetables. Thus, people's expressed preferences may be more important to consider in relation to these items. Conversely, the odds ratios for a family holiday, celebrations and own bedroom were similar in magnitude in both models, suggesting that adaptive preferences may be at work for these items.

Constructing a deprivation index

Since the items in the child deprivation index are not reported by - or asking about - the specific child participating in the youth survey, these items were treated as equivalent to the

143

material deprivation items. Three of the material deprivation items were felt to be child-centred given the findings of qualitative research with children (e.g. Ridge, 2002): enough money to replace or repair furniture and electrical goods, and to keep the house in a decent state of repair. Most families would consider these items essential, and difficult or stigmatising to be without. The wording of these items also allows for respondents to decide for themselves what types of furniture, housing repairs and electrical goods they consider to be necessities, which avoids the problem described above of the desirability of different items.

A deprivation index was, therefore, constructed by combining these three material deprivation items with eight of the child deprivation items. As all of the child deprivation items could be said to be broadly-speaking child-centred – and all except a warm coat were associated with income poverty – the eight items contained in Waves 1, 2, 4, 6, 8 and 10 of the survey were selected for inclusion to maximise the sample size available for analysis. The Cronbach's Alpha for the resulting 11-item index was 0.76, which reaches the recommended threshold of 0.7. The index comprises the following items:

1. A family holiday away from home for at least one week a year

2. Own bedroom

3. Leisure equipment such as sports equipment or a bicycle

4. Celebrations on special occasions such as birthdays, Christmas or other religious festivals

5. A hobby or leisure activity

6. Friends over for tea or a snack once a fortnight

7. School trips

8. Outdoor space or facilities where can play safely

9. Enough money to keep house in a decent state of repair

10. Enough money to replace any worn out furniture

11. Enough money to replace or repair major electrical goods when broken

Table 30 shows descriptive statistics and bivariate associations with SWB for the 11-item deprivation index described above and the 4-item consumer durables index described earlier. Children were more likely to have low SWB and lower 4-domain SWB scores if they lacked any of the items in the deprivation index or any of the consumer durables, such as a home computer and access to the internet, but they had higher SWB if they lacked all four household items (which is explored further later in this chapter). As can be seen in the first column of Table 30, there were high levels of missing data (20.4%) for the deprivation items since a small amount of missing data for individual items aggregates to a large amount of missing data for the scale as a whole. Due to the potential for this large number of non-respondents to lead to biased results, each of the analyses relating to the deprivation scale are replicated with a multiply imputed dataset and are shown in Appendix 1.

Table 30: Univariate and bivariate analysis of adult-reported deprivation or household items lacked and children's SWB

	% missing data	% of sample	% with low life SWB	Mean SWB 4-domain scores
Deprivation: items lacked [a]	20.4		***	***
0		52.7	9.1	19.7
1		13.2	11.2	19.6
2		11.8	13.2	19.3
3		9.2	14.8	19.3
4		6.4	16.8	19.0
5 or more		6.7	22.0	19.1
Household items lacked	4.7		***	***
0		54.7	10.9	19.6
1		33.0	14.7	19.3
2		10.0	17.3	19.2
3		1.7	19.2	19.3
4		0.6	12.3	20.2

* p<0.05 ** p<0.01 *** p<0.001
[a] These items were included in Waves 1, 2, 4, 6, 8 & 10

Equivalisation

In the descriptive and bivariate statistics presented thus far, the OECD modified scale has been used to generate income quintiles and a measure of relative income poverty. However, this section shows how the poverty line – i.e. 60% of equivalised median income - is drawn differently for the UKHLS data if different approaches to equivalisation are taken. As would be expected, Table 31 shows that the poverty line is highest if all children aged 10 to 15 are given an equivalisation factor of 0.3, slightly lower if the OECD modified scale is used, and lowest if all children aged 10 to 15 are given an equivalisation factor of 0.5.

Table 31: Poverty lines using different equivalisation factors for children aged 10 to 15

Wave	OECD modified scale	0.3 for all 10-15 year olds	0.5 for all 10-15-year-olds
		Equivalisation factor used:	
1	£ 750.66	£ 757.08	£ 702.20
2	£ 796.69	£ 803.00	£ 749.15
3	£ 822.82	£ 831.16	£ 771.81
4	£ 841.94	£ 849.40	£ 795.88
5	£ 865.79	£ 875.37	£ 815.30
6	£ 918.84	£ 927.29	£ 864.01
7	£ 925.96	£ 936.31	£ 877.84
8	£ 951.08	£ 957.54	£ 899.76
9	£ 963.76	£ 971.45	£ 915.95
10	£ 992.97	£ 1,004.46	£ 947.88
11	£ 1,024.89	£ 1,031.30	£ 979.80

Waves 1 to 11, unweighted N = 683,623 (i.e. person-wave observations)

Table 32 compares descriptive and bivariate statistics for poverty status and income quintile when the three different equivalisation factors are applied. As would be expected a higher proportion of children are categorised as living in poor households when an equivalisation factor of 0.5 is given to all 10 to 15-year-olds (23.4%) compared to using a factor of 0.3 (15.9%) or the OECD modified scale (18.2%). However, at the bivariate level there is little difference in how poverty is associated with SWB. Children in poverty had a similar likelihood of low SWB however incomes were equivalised, and as observed earlier, there was a u-shaped pattern to the bivariate relationship between income quintiles and 4-domain SWB scores such that children in the lowest income quintiles had higher scores than those in the second lowest quintiles.

Table 32: Comparison of different approaches to equivalisation and SWB

Income variable	Equivalisation factor used for 10-15-year-olds	% of sample	% with low SWB	Mean SWB 4-domain scores
Relative poverty	OECD modified scale		**	NS
Yes		18.2	14.7	19.5
No		81.8	12.6	19.5
Quintiles			***	***
Lowest quintile		23.2	15.4	19.4
2nd quintile		25.6	15.4	19.1
3rd quintile		21.5	12.3	19.5
4th quintile		16.7	10.4	19.8
Highest quintile		12.9	8.6	19.9
Relative poverty	0.3		*	**
Yes		15.9	14.8	19.6
No		84.1	12.7	19.5
Quintiles			***	***
Lowest quintile		20.8	14.8	19.6
2nd quintile		25.0	15.7	19.2
3rd quintile		22.1	12.8	19.4
4th quintile		17.9	10.7	19.7
Highest quintile		14.3	9.0	19.8
Relative poverty	0.5		**	*
Yes		23.4	14.7	19.6
No		76.6	12.5	19.5
Quintiles			***	***
Lowest quintile		26.5	15.4	19.5
2nd quintile		26.8	14.8	19.2
3rd quintile		20.9	12.0	19.5
4th quintile		15.4	10.1	19.7
Highest quintile		10.4	8.8	19.7

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Multivariate analysis

Adult-reported socioeconomic variables

The next step in the analysis was to enter each of the adult-reported socioeconomic variables into individual regressions with the two SWB measures as dependent variables, controlling for age, sex, ethnicity, country, family structure, number of siblings and a dummy for each wave of the survey. Tables 33 and 35 show the results. Some of the socioeconomic variables were significantly related to both low SWB and 4-domain SWB once the control variables were included, namely, equivalised household income quintile, the Townsend Deprivation quintile, home ownership, inadequate heating, moving house, the deprivation index, lacking a holiday, having a parent who reports 'finding it difficult' and who has 'felt embarrassed' because of low income.

Focusing in more detail on the different measures of income, Table 33 shows an interesting pattern of SWB domains being related to income measures in distinctive ways, which highlights the value of considering domains separately. Income poverty had an unclear relationship with SWB. The only association that was in the expected direction was that children in income-poor households (using an equivalisation factor of 0.5 for all children) were more likely to be dissatisfied with their schoolwork. More surprisingly, children in income-poor households, regardless of the equivalisation method used, were *less* likely to be dissatisfied with family relationships, and those in income-poor households (using the OECD equivalisation method) were *less* likely to be dissatisfied with their appearance and had *higher* 4-domain SWB scores. The finding for family relationships is not easy to account for, although since low-income families are more likely to be unemployed, it may be explained by the qualitative finding that children benefit from having more time with parents if they are not working (Millar and Ridge, 2009), and the quantitative finding that younger children

experienced an increase in SWB when a parent became unemployed (Powdthavee and

Vernoit, 2013). However, it is important to note that while worklessness was also associated

with a lower likelihood of being dissatisfied with family relationships, as can be seen in

Table 35, this finding was not statistically significant.

Table 33: Different measures of income and SWB

	Income poverty OECD	Income poverty (0.3)	Income poverty (0.5)	Income (equivalised) in £1000s	Log income
Odds ratios for low satisfaction with…					
Life as a whole	1.03	1.08	1.07	0.84***	0.85**
Family	0.76**	0.81*	0.84*	1.02	1.11
Friends	0.99	1.04	1.05	0.98	0.96
Appearance	0.88*	0.92	0.91	0.95	0.99
School	1.04	1.09	1.08	0.81***	0.81***
Schoolwork	1.06	1.11	1.13*	0.83***	0.81***
Regression coefficients for 4-domain SWB[a]	0.24*	0.19	0.14	0.07	0.01
_cons	21.41***	21.42***	21.41***	21.31***	21.35***
Unweighted N	36844	36844	36844	36844	36844

	Income quintile OECD	Income quintile (0.3)	Income quintile (0.5)	Townsend Deprivation
Odds ratios for low SWB				
Most deprived quintile	1.50***	1.43***	1.53***	1.61***
2nd quintile	1.53***	1.53***	1.50***	1.55***
3rd quintile	1.30*	1.31**	1.28*	1.30**
4th quintile	1.15	1.14	1.11	1.29**
Least deprived quintile	1	1	1	1
Regression coefficients for 4-domain SWB				
Most deprived quintile	-0.05	-0.01	-0.05	-0.42**
2nd quintile	-0.37**	-0.34**	-0.26*	-0.52***
3rd quintile	-0.14*	-0.17	-0.17	-0.17
4th quintile	0.04	0.07	0.08	-0.21
Least deprived quintile	0	0	0	0
_cons	21.53***	21.52***	21.49***	21.63***
Unweighted N	36844	36844	36844	36844

* $p<0.05$ ** $p<0.01$ *** $p<0.001$ Each model includes wave, age, sex, ethnicity, country, family structure and number of siblings.

The two continuous measures of household income – equivalised and log-transformed – were more clearly associated with SWB, with both measures associated with a lower likelihood of children being dissatisfied with life as a whole, school and schoolwork, although neither was related to children's 4-domain SWB scores. The findings for schoolwork here and in relation to the OECD-equivalised poverty measure is supported by other evidence showing that the income gradient is stronger for children's educational attainment than it is for other child outcomes such as physical and mental health (Gregg, Propper and Washbrook, 2007).

In relation to the income quintiles, the relationship with low overall SWB was monotonic when an equivalisation factor of 0.5 was given to all 10 to 15-year-olds, as it was for the Townsend Deprivation quintiles. However, for the 4-domain SWB scores, similar to the bivariate analysis, there was a u-shaped relationship for the income and Townsend Deprivation quintiles, with children in the second most deprived quintile having the lowest SWB scores. It is not clear why this would be, although analysis of domain SWB may offer some clues. Similar to the discussion of income poverty, Table 34 reveals a *lower* likelihood of dissatisfaction with relationships with family and friends in the lowest income quintile (although non-significant) and a *higher* likelihood in the second lowest income quintile (also non-significant). Appearance and school also had u-shaped curves with the highest odds of dissatisfaction amongst children in the second lowest income quintile. There were also u-shaped curves for the Townsend deprivation quintiles in respect of family and appearance, however, school had a monotonic relationship.

Table 34: Household income, neighbourhood deprivation and domains of SWB

Odds ratios for low SWB	Family	Friends	Appearance	School	Schoolwork
Income quintile [a] (least deprived)					
Most deprived quintile	0.95	0.94	1.05	1.44***	1.40***
2nd quintile	1.14	1.01	1.19*	1.52***	1.40***
3rd quintile	1.13	0.83	1.05	1.31**	1.16
4th quintile	1.01	0.79	1.04	1.05	1.01
Townsend Neighbourhood Deprivation quintile (least deprived)					
Most deprived quintile	0.91	1.52***	1.19*	1.82***	1.36***
2nd quintile	1.11	1.41**	1.30***	1.69***	1.37***
3rd quintile	0.91	1.22	1.09	1.30**	1.15
4th quintile	1.02	1.08	1.19*	1.35***	1.16*
Unweighted N	36844	36844	36844	36844	36844

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$. Each model includes wave, age, sex, ethnicity, country, family structure and number of siblings.

[a] Income quintile is calculated using an equivalisation factor of 0.5 for all children in the household.

Overall, it would appear that taking a composite score approach to understanding children's SWB – and making the assumption that income has a linear relationship with SWB - can mask the fact that domains of SWB are related to income in different ways. In respect of equivalisation, there is some evidence that if children are treated as equivalent to adults (i.e. by assigning them an equivalisation factor of 0.5) - which helps identify low-income families with a larger adult to child ratio such as single-parent families - there is a clearer relationship with SWB for the overall measure of life as a whole.

Moderation analysis was carried out to explore the hypothesis of neighbourhood deprivation moderating the relationship between socioeconomic disadvantage and SWB, and this found an interaction between neighbourhood deprivation and household log income. Children living in households with higher log-incomes in the two least deprived quintiles (the light blue and orange lines shown in Figure 11) had higher SWB scores than children in similarly affluent households in the most deprived quintiles (the blue, red and green lines shown in Figure 11). Conversely, at the other end of the income spectrum, it can also be seen that children in low-

income families in deprived areas have higher SWB than children in similar circumstances in non-deprived areas. This provides support for the hypothesis that experiencing disadvantage within a context of affluence may be more detrimental to SWB than when social comparisons are made to others in similarly constrained circumstances. This finding is supported by other research showing that children who perceive their own families to be wealthier than their friends' families have lower well-being than those who perceive their socioeconomic position to be similar (Patalay and Fitzsimons, 2018). This a striking difference to research showing that, for adults, it is not so much 'keeping up with the Joneses' but 'doing better than the Joneses' that is conducive to SWB. For children, in contrast, it appears that 'fitting in' is more important than standing out.

Figure 11: Predicted 4-domain SWB scores and household log-income by Townsend neighbourhood deprivation quintile
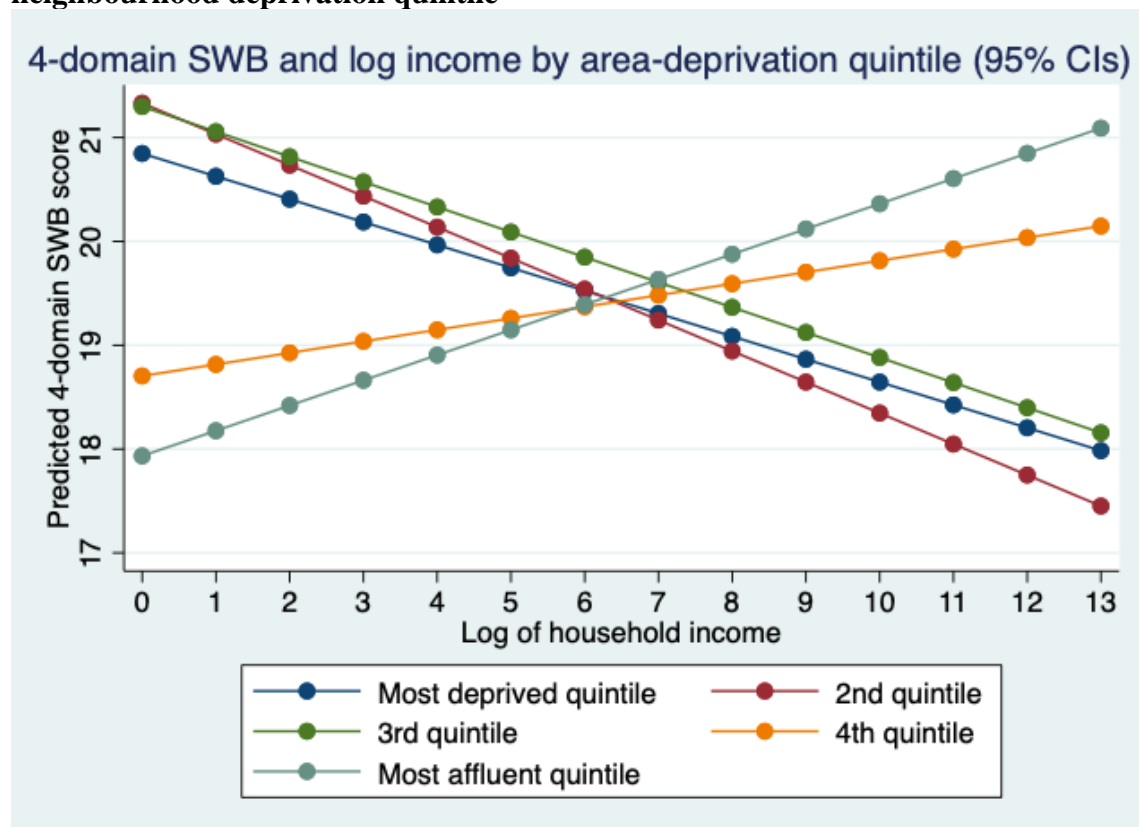
In relation to the non-income indicators of socioeconomic disadvantage, children had higher odds of low overall SWB for all of the measures except overcrowded housing and moving house, which demonstrates that socioeconomic circumstances are associated with children's

quality of life once a range of important confounders are considered. Furthermore, there were some interesting patterns for the domain measures of SWB. In line with the findings for income, all of the non-income measures were associated with dissatisfaction with school and schoolwork. In contrast, only deprivation, subjective financial difficulties and poverty shame were related to dissatisfaction with family relationships. Interestingly, there were similar patterns for the friends and appearance domains, with deprivation, financial difficulties, housing tenure and inadequate heating associated with both dissatisfaction with friends and appearance. Additionally, worklessness and receipt of benefits were associated with feelings about friendships, while moving house and feeling embarrassed about low income were associated with feelings about appearance. As mentioned earlier, analysis of the deprivation scale was replicated using a multiply imputed dataset and the results, which are presented in Appendix 1, are almost identical.

Table 35: Non-income measures of socioeconomic circumstances and SWB

	Parental degree	Workless household	Means-tested benefits	Behind on some / all bills
Odds ratios for low satisfaction with…				
Life as a whole	0.85*	1.49***	1.39***	1.46***
Family	1.13	0.92	1.07	1.09
Friends	0.99	1.46***	1.20*	1.23
Appearance	0.93	1.00	1.06	1.13
School	0.71***	1.17*	1.31***	1.34***
Schoolwork	0.69***	1.26**	1.36***	1.36***
Regression coefficients for 4-domain SWB[a]	0.11	-0.13	-0.17	-0.35*
_cons	21.39***	21.44***	21.45***	21.45***
Unweighted N	36844	36844	36844	36844
	Home owned	**Over-crowded housing**	**Financial difficulties**	**Inadequate heating [b]**
Odds ratios for low satisfaction with…				
Life as a whole	0.62***	1.17	1.45***	1.46**
Family	0.89	1.03	1.35***	1.29
Friends	0.77**	0.95	1.24*	1.58***
Appearance	0.82**	1.11	1.16*	1.27*
School	0.68***	1.40***	1.30***	1.33**
Schoolwork	0.70***	1.24**	1.30***	1.29**
Regression coefficients for 4-domain SWB[a]	0.33***	-0.05	-0.43***	-0.60***
_cons	21.15***	21.44***	21.49***	22.00***
Unweighted N	36844	36844	36844	25962
	Household items scale	**Deprivation scale [a]**	**Child lacks a family holiday**	**Child lacks hobbies**
Odds ratios for low satisfaction with…				
Life as a whole	1.15**	1.17***	1.60***	1.87***
Family	0.96	1.08**	1.14	1.93**
Friends	1.08	1.06*	1.21	1.54*
Appearance	1.03	1.06**	1.12	1.34*
School	1.17***	1.11***	1.37***	1.63***
Schoolwork	1.13***	1.08***	1.35***	1.56**
Regression coefficients for 4-domain SWB[a]	-0.04	-0.13***	-0.34***	-0.87***
_cons	21.42***	21.41***	21.34***	21.32***
Unweighted N	35431	17584	17584	17584

	Moved house	Evicted	Felt small by low income [b]	Felt embarrassed by low income [b]
Odds ratios for low satisfaction with…				
Life as a whole	1.19	2.33*	1.52*	1.40**
Family	1.24	2.50	1.60*	1.56**
Friends	1.23	0.81	1.20	1.17
Appearance	1.20*	0.84	1.24	1.40**
School	1.08	0.98	1.26	1.18
Schoolwork	1.18	1.29	1.48*	1.30*
Regression coefficients for 4-domain SWB[a]	-0.27*	-0.14	-0.42*	-0.44*
_cons	21.43***	21.43***	21.30***	21.35***
Unweighted N	36844	36844	6136	6136

* p<0.05 ** p<0.01 *** p<0.001. Models include wave, age, sex, ethnicity, country, family structure and number of siblings. [a] Waves 1, 2, 4, 6, 8 & 10 only [b] Waves 7 & 8 only

These findings suggest that deprivation that is visible to others or stigmatising may have knock-on effects for the quality of children's relationships with family and friends, and that this may affect how they feel about their appearance. The association between inadequate heating and dissatisfaction with friendships and appearance is striking given qualitative evidence highlighting the consequences of living in poor housing, which can create obstacles for children's relationships with friends if they feel they cannot invite them over to visit or stay (Ridge, 2002). These different relationships with domain SWB explain the finding that only some of the socioeconomic variables - housing tenure, moving house, inadequate heating, deprivation, subjective financial difficulties, being behind on bills and poverty shame - were related to 4-domain SWB.

Table 35 also shows a clear relationship with SWB for two material items included in the deprivation index - whether the child does hobbies or leisure activities and has a family holiday each year – which qualitative research with children indicates are particularly salient to children (Main, 2013). Given the low cost of leisure activities compared to a family

holiday, this item is likely to identify households with the lowest incomes, as well as those in which children's participation in leisure or social activities is not prioritised, which may explain the lower SWB in every domain of life – and particularly for family relationships. The association between lacking hobbies or leisure activities and dissatisfaction with friendships and appearance is also striking, and in line with qualitative evidence that emphasises the importance to children of opportunities for social participation and of 'fitting in' (Ridge, 2009).

Further analysis of the deprivation and household items – shown in Figure 12 - indicates that while the former appears to have a monotonic relationship with SWB when the control variables were included, the latter does not. The small number of children who live in houses without a computer, access to the internet, a dishwasher and a car had higher SWB than those who lacked none of these items, perhaps because this group lack these items for reasons other than economic disadvantage (such as for anti-consumerist or environmental reasons). Given this unclear relationship with SWB, the household items were dropped from subsequent analysis.

Figure 12: Deprivation scale, household items and SWB (95% CIs)
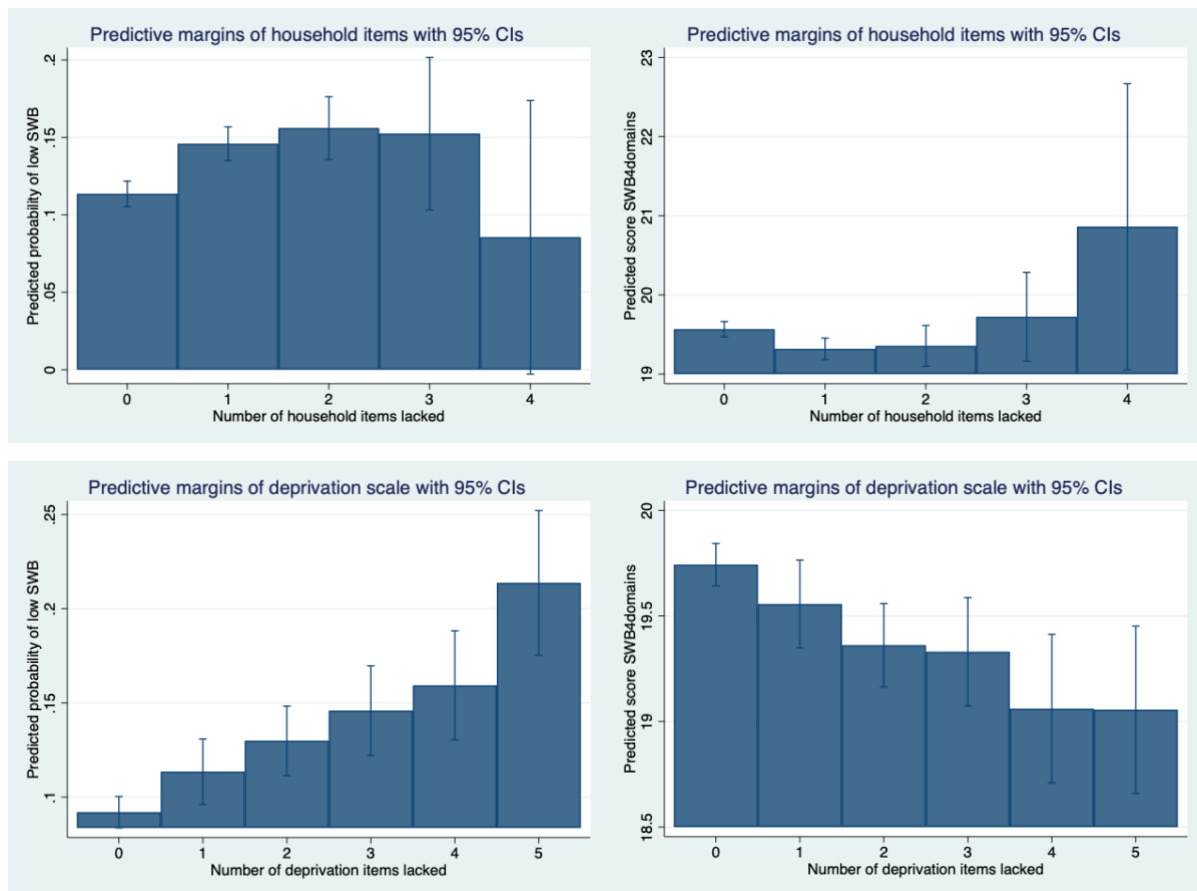
One further step was to investigate whether the associations between the adult-reported socioeconomic variables and SWB were moderated by sex or age. There were significant interactions with sex for worklessness and overcrowding, with the association of these two variables stronger for boys. As shown in Figure 13, whilst boys were less likely than girls to have low overall SWB if they did not live in a workless or overcrowded household, this association disappeared if they did.

Figure 13: Low SWB, overcrowding and worklessness by sex (95% CIs)
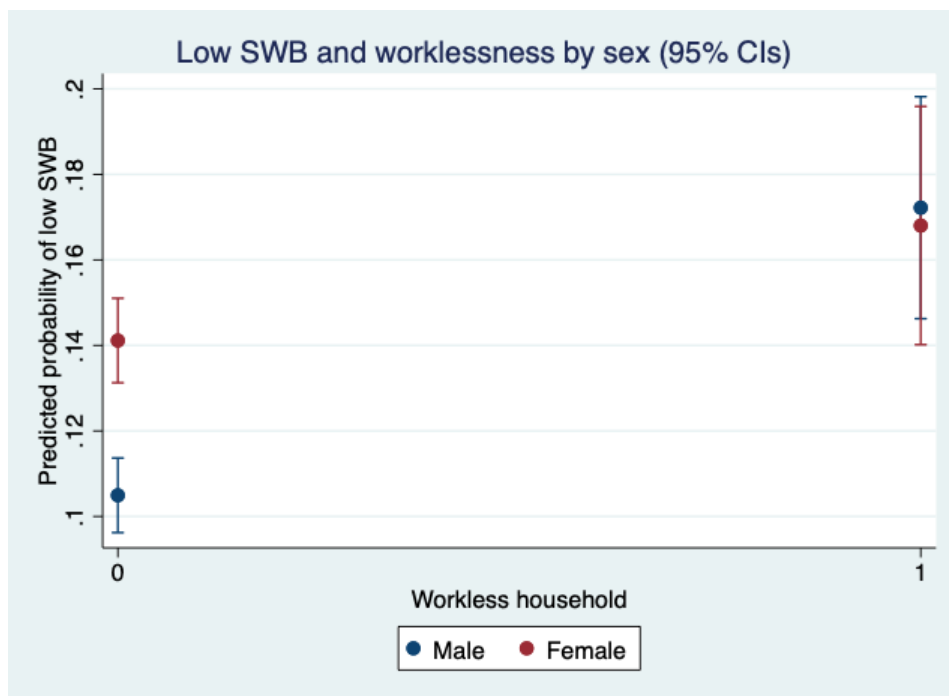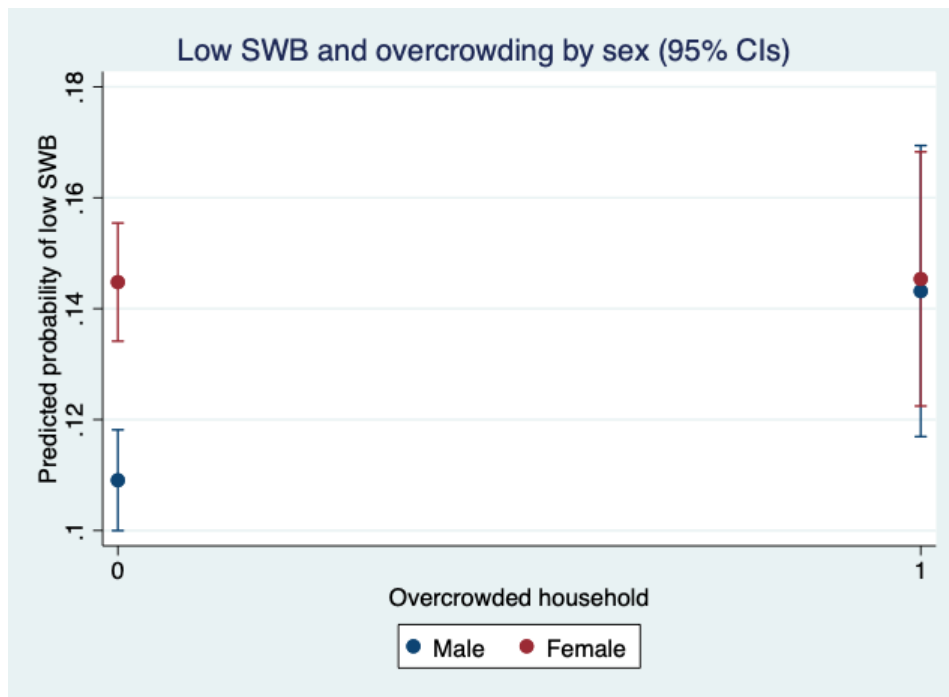
Child-reported socioeconomic variables

Finally, the child-reported socioeconomic variables were entered into regressions alongside

the control variables. All of the neighbourhood variables and lack of pocket money and

savings were significantly associated with every measure of SWB, except for feeling unsafe

after dark, which was not associated with satisfaction with family relationships. Not liking the neighbourhood and worry about being a victim of crime had the strongest relationships with children's SWB, and this was most notable for friends and life as a whole. There were also notably strong associations between feeling unsafe after dark in the neighbourhood, lacking pocket money or savings and dissatisfaction with friendships. This pattern of child-reported socioeconomic and neighbourhood disadvantage being clearly related to children's feelings about their friendships is an interesting finding given that several of the adult-reported socioeconomic variables had no significant association with this domain.

Table 36: Child-reported neighbourhood and material circumstances and SWB

	Do not like neighbourhood	Feel unsafe after dark in area	Worry about being victim of crime	No pocket money / savings
Odds ratios for low satisfaction with…				
Life as a whole	2.74***	1.95***	2.81***	1.43***
Family	2.68***	1.15	2.13***	1.68***
Friends	2.94***	2.28***	2.42***	1.72***
Appearance	1.83***	1.60***	2.31***	1.34***
School	2.68***	1.46***	1.87***	1.73***
Schoolwork	2.06***	1.62***	1.70***	1.81***
Regression coefficients for 4-domain SWB	-2.45***	-0.99***	-1.74***	-0.91***
_cons	21.62***	21.96***	21.74***	21.65***
Unweighted N	8835	8835	8835	8835

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Model includes wave, age, sex, ethnicity, country, family structure and number of siblings. Waves 5, 7 & 9 only to facilitate comparison.

In terms of interactions, Figure 14 shows that sex moderates the relationship between feeling unsafe after dark in the neighbourhood and low overall SWB, with boys less likely than girls to have low SWB if they feel safe in their neighbourhoods, but equally likely to have low SWB if they feel unsafe.

Figure 14: Low SWB and feeling unsafe by sex (95% CIs)

Low SWB and feeling unsafe in area after dark by sex (95% CIs)
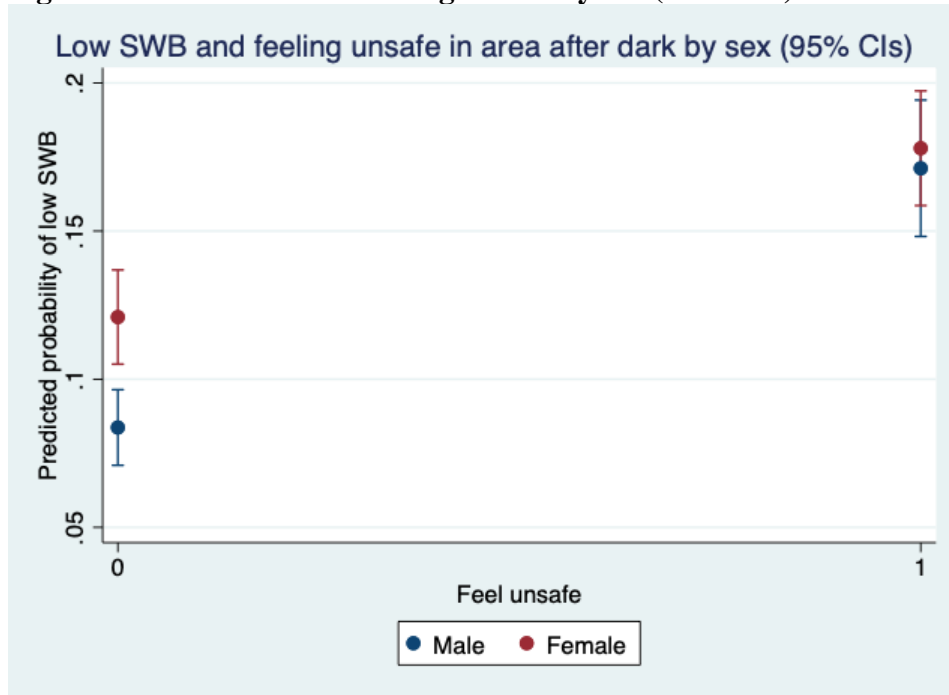
In contrast to the other child-reported variables, mobile phone ownership and paid work were not associated with dissatisfaction with life as a whole or 4-domain SWB scores. However, children were more likely to have low satisfaction with their friendships if they lacked a phone or had a non-smartphone, and they were more likely to have low satisfaction with school if they were in paid work.

Table 37: Child-reported mobile phone, paid work and SWB

	No mobile phone [a]	Non-smartphone [b]	Paid work [c]
Odds ratios for low satisfaction with…			
Life as a whole	1.04	1.12	1.10
Family	1.08	1.95	1.12
Friends	1.36*	2.18*	1.17
Appearance	1.06	1.20	0.98
School	0.98	1.08	1.38***
Schoolwork	1.00	1.22	1.00
Regression coefficients for 4-domain SWB[a]	-0.06	-0.50	-0.21
_cons	21.53***	21.19***	21.66***
Unweighted N	20899	4537	15860

* p<0.05 ** p<0.01 *** p<0.001. Model includes wave, age, sex, ethnicity, country, family structure and number of siblings.
[a] This question was included in Waves 1, 3, 5, 7, 9 & 11
[b] This question was included in Waves 9 & 11 only

Furthermore, there were some statistically significant interactions between mobile phone ownership and sex. As can be seen in Figure 15, boys without a mobile phone had lower predicted 4-domain SWB scores than boys with a phone, while the reverse was true for girls. Similar patterns were evident for low SWB overall and in relation to appearance and school. Girls with a phone were more likely than boys with a phone to have low satisfaction with life as a whole and especially with their appearance, but if they lacked a phone, both sexes were equally likely to have low SWB. These findings suggest that boys' SWB may benefit from having a phone, while girls' SWB may benefit from *not* having a phone. It is likely that having a phone is associated with greater use of social media, which has been found to have a stronger association to depressive symptoms for adolescent girls than boys (Kelly *et al.*, 2018). The authors of this research found evidence of online bullying, sleep quantity and quality, self-esteem and body image mediating the relationship between social media use and depressive symptoms (Kelly *et al.*, 2018), and these would be equally plausible mediators of the relationship between mobile phone ownership and SWB. In respect of school, lacking a phone was related to a higher likelihood of low satisfaction with school for boys compared to girls, but if they had a phone, both sexes were equally likely to have low SWB. These interactions with sex provide additional evidence of mobile phone ownership not being a straightforward indicator of material circumstances. There may be other reasons than financial constraint causing parents to 'deprive' their child of a mobile phone.

Figure 15: SWB and mobile phone ownership by sex (95% CIs)

4-domain SWB   Low overall SWB

Appearance   School
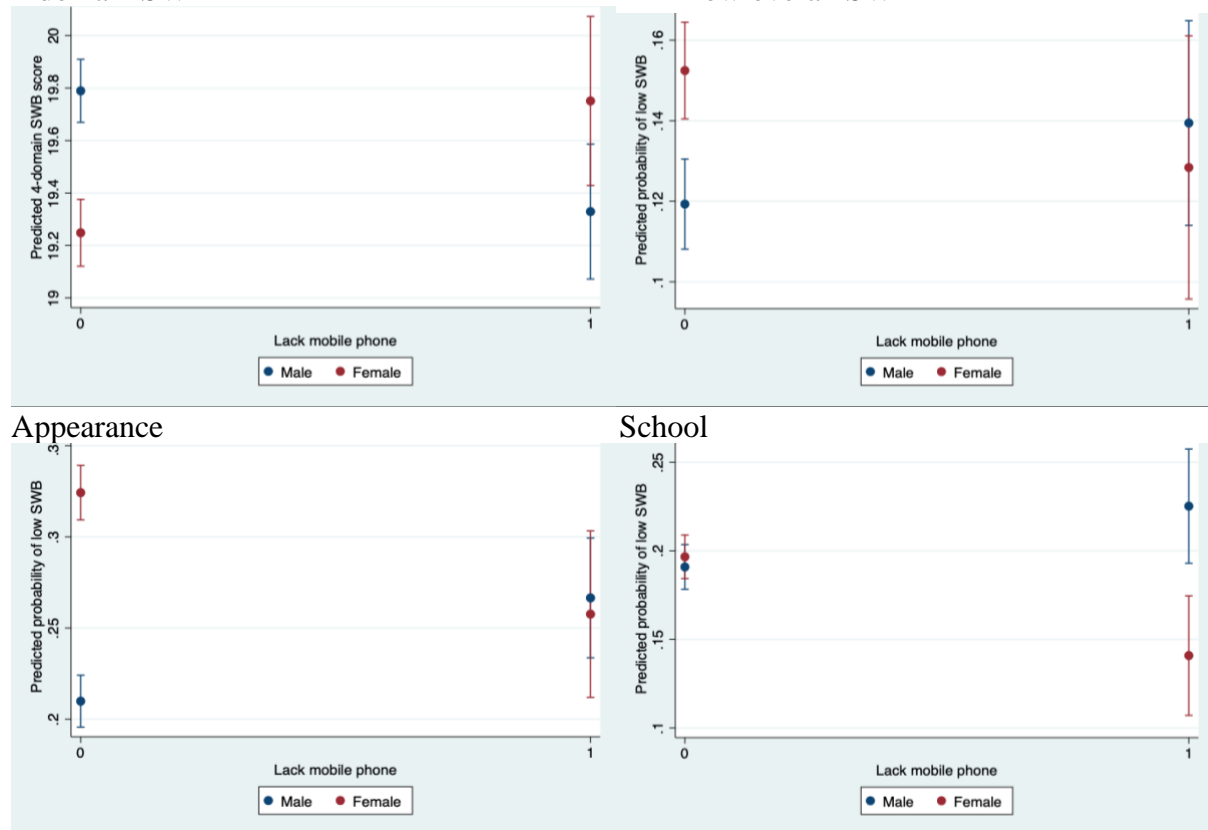
There were also interactions between paid work and age. As can be seen in Figure 16, if they did paid work, younger children (aged 10, 11 and 12) had a higher likelihood of low SWB and older children (aged 13, 14 and 15) had a lower likelihood of low SWB. This suggests that younger children - who, by law, are not allowed to work until they are 13 - may be interpreting the question as being about household chores that they do for pocket money. Household chores may confer the same benefits as a paid job in terms of earned income and a sense of autonomy, but they are unlikely to hold the same sense of constraint and deprivation as a paid job. As a result of this uncertainty about how children are interpreting this question, it is excluded from further analysis.

Figure 16: Low SWB and paid work by age (95% CIs)

Low overall SWB and paid work by age (95% CIs)
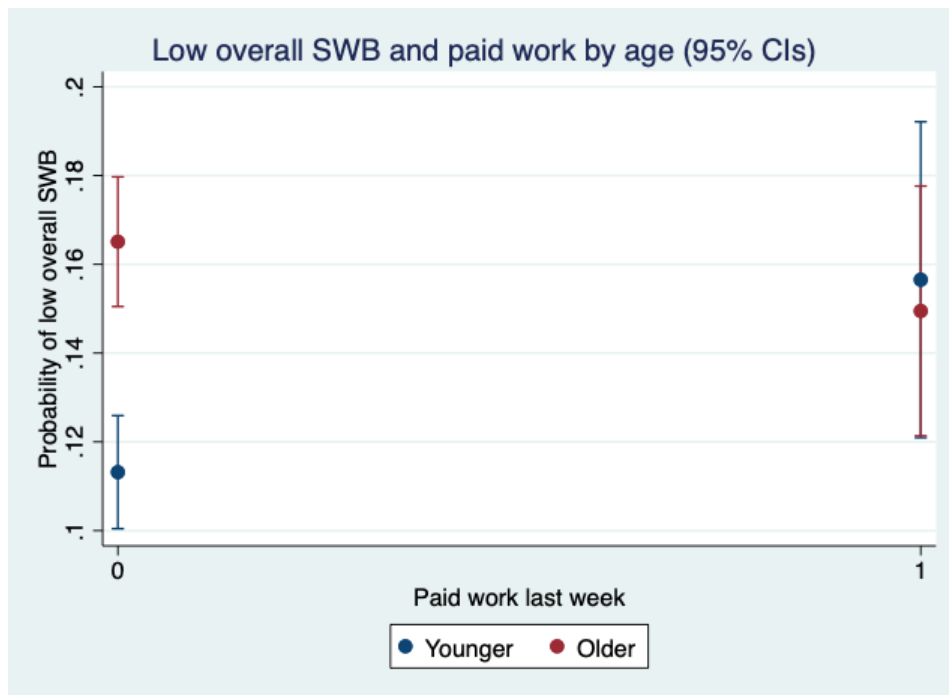
Considering multiple socioeconomic circumstances

Having identified which of the adult- and child-reported socioeconomic variables were individually associated with SWB once child and family characteristics were accounted for, the next step was to enter these into the regressions in blocks. Table 39 shows the results of the logistic regressions of low overall SWB. Firstly, in the 'contextual variables' model, the child and family characteristics were included alongside the variables that are conceptualised as providing background information about children's socioeconomic contexts - income quintiles, Townsend Deprivation quintiles, worklessness and receipt of means-tested benefits - but are not expected to have a direct effect on children's SWB. Secondly, the adult-reported aspects of children's socioeconomic circumstances that are conceptualised as being most salient to children are included, including deprivation, which was only included in waves 1, 2, 4, 6, 8 and 10. Thirdly, the 'contextual variables' model is run again for waves 5, 7 and 9, and fourthly, the child-reported socioeconomic and neighbourhood variables are added. The

sample sizes for the first and second models - and the third and fourth models - are kept constant so that the models can be directly compared.

The correlations between the socioeconomic variables included in these models ranged from -0.01 (between ownership of a mobile phone and income quintiles) to 0.45 (for both struggling financially and deprivation, and housing tenure and means-tested benefits). The highest correlations are lower than comparable studies of socioeconomic factors and children's SWB (Patalay and Fitzsimons, 2016). Correlations above ± 0.3 are shown in Table 38. Tests for multicollinearity did not highlight variance inflation factors (VIFs) beyond acceptable thresholds, indeed, none of the variables had VIFs above 2.

Table 38: Correlations >0.3 between socioeconomic variables

	Deprivation	Income quintiles	Home owned	Workless household	Problems paying bills
Income quintiles	-0.41		0.34		
Townsend Deprivation quintile	-0.37	0.37	0.37		
Workless household	0.33	-0.32	-0.37		
Means-tested benefits	0.41	-0.42	-0.45	0.35	
Homeowner	-0.42				
Problems paying bills	0.39				
Struggling financially	0.45				0.31

In relation to the contextual socioeconomic variables included in the logistic regressions shown in Table 39, there were significant associations for means-tested benefits, worklessness and the most deprived Townsend quintile in the first model, and worklessness plus all of the Townsend quintiles in the third model. The finding for means-tested benefits provides tentative evidence of stigma playing a role in reducing children's SWB. As

mentioned earlier, receipt of means-tested benefits may function as an additional measure of low income as well as an indicator that children (and adults) are subject to poverty-related stigma. The significance of neighbourhood deprivation in both the first and third models indicate that this aspect of children's socioeconomic contexts – which may be more tangible to children than the level of household income– is important to take account of when considering their quality of life. The higher likelihood of low SWB for children in workless households conflicts with other research findings suggesting that parental unemployment may have benefits to children once income is controlled (Powdthavee and Vernoit, 2013; Millar and Ridge, 2009).

When the adult-reported, tangible aspects of children's socioeconomic circumstances were entered into the second model, only two variables were significant: children in households scoring higher on the deprivation index were more likely to have low overall SWB, while children in homes that are owned were less likely to have low overall SWB. Analysis of the deprivation scale (i.e. the second column in Tables 39 and 40) was replicated using a multiply imputed dataset and the results, which are shown in Appendix 1, are substantively the same. In the fourth model, all of the child-reported socioeconomic variables except mobile phone ownership had a clear association with low SWB, while none of the adult-reported variables were significant. These findings lend support to the hypothesis that child-centred and child-reported measures of socioeconomic circumstances would be stronger predictors of children's SWB than contextual measures.

Table 39: Child/family characteristics, socioeconomic variables and low overall SWB

	Odds ratios of low overall SWB			
	Contextual variables	Contextual variables + subjective & deprivation	Contextual variables	Contextual variables + child-reported
Equivalised income quintile (highest)				
Lowest quintile	1.26	1.04	1.12	1.03
2nd quintile	1.29	1.13	1.12	1.04
3rd quintile	1.16	1.07	0.95	0.91
4th quintile	1.04	1.00	0.82	0.77
Townsend Deprivation quintile (least deprived)				
Most deprived quintile	1.43**	1.21	1.55*	1.09
2nd quintile	1.26	1.13	1.57**	1.24
3rd quintile	1.08	1.02	1.52*	1.29
4th quintile	1.06	1.03	1.48*	1.32
Worklessness	1.28*	1.10	1.41*	1.31
Means-tested benefits	1.39***	1.19	1.08	1.00
Home owned		0.75**		0.81
Behind on some or all bills		0.97		1.02
Subjective financial difficulties		1.16		0.99
Inadequate heating		1.13		
Deprivation index		1.12***		
No mobile phone				1.00
No pocket money / savings				1.27*
Does not like neighbourhood				2.06***
Feels unsafe after dark in area				1.52***
Worried about crime				2.24***
N (unweighted) cases	17584	17584	8950	8950
F	6.25***	6.38***	4.02***	6.37***
	(37, 2205)	(42, 2205)	(34, 1373)	(42, 1373)

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$. All models also include age, sex and ethnicity of the child, family structure, number of siblings, wave of survey and country.

Table 40 replicates the analysis above with a series of linear regressions with the four-domain measure of SWB and the control and socioeconomic variables, with broadly similar findings. Of the contextual socioeconomic variables, only neighbourhood deprivation was significantly associated with SWB, with children in the second most deprived Townsend quintile having lower SWB in three of the models. When the tangible measures of socioeconomic circumstances were added to the second model, deprivation was associated with 4-domain

SWB, while in the fourth model, all of the child-reported variables except mobile phone ownership were related to SWB, alongside home ownership.

However, it is important to highlight that the total amount of variation in SWB explained across the first and second models was very similar. In contrast, when the child-reported socio-economic variables were added to the fourth model, the total amount of variation in SWB explained increased substantially from 11% to 18%, driven by the coefficients for the child-reported items, which were significant and comparatively large. Again, this supports the hypothesis that child-reported, child-centred measures of socioeconomic circumstances that take the child as the unit of analysis are more strongly associated with children's SWB than adult-reported ones that take the household as the unit of analysis.

Table 40: Child/family characteristics, socioeconomic variables and 4-domain SWB

	Regression coefficients for 4-domain SWB			
	Contextual variables	Contextual variables + subjective & deprivation	Contextual variables	Contextual variables + child-reported
Equivalised income quintile (highest)				
Lowest quintile	-0.02	0.12	-0.08	0.13
2nd quintile	-0.18	-0.08	-0.34	-0.15
3rd quintile	-0.07	-0.01	-0.06	0.04
4th quintile	0.05	0.08	0.05	0.16
Townsend Deprivation quintile (least deprived)				
Most deprived quintile	-0.33	-0.22	-0.37	0.22
2nd quintile	-0.42**	-0.34*	-0.61*	-0.19
3rd quintile	-0.16	-0.13	-0.11	0.16
4th quintile	-0.14	-0.12	-0.32	-0.13
Worklessness	-0.05	0.07	-0.26	-0.07
Means-tested benefits	-0.24	-0.13	0.01	0.17
Home owned		0.11		0.41*
Behind on some or all bills		0.11		0.08
Subjective financial difficulties		-0.13		-0.08
Inadequate heating		-0.36		
Deprivation index		-0.10**		
No mobile phone				-0.02
No pocket money / savings				-0.70***
Does not like neighbourhood				-1.99***
Feels unsafe after dark in area				-0.58***
Worried about crime				-1.33***
Intercept	21.51***	21.78***	21.82***	21.89***
N (unweighted) cases	17584	17584	8950	8950
F	25.80*** (37, 2205)	23.23*** (42, 2205)	16.66*** (34, 1373)	21.73*** (42, 1373)
R^2	0.09	0.10	0.11	0.18

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. All models also include age, sex and ethnicity of the child, family structure, number of siblings, wave of survey and country.

Longitudinal analysis

Thus far, this chapter has drawn on cross-sectional analysis of the UKHLS to provide a 'snapshot' of children's lives and explore the socioeconomic and background factors that are associated with children's SWB at a particular point in time. However, there is also a desire to examine factors that predict changes in children's SWB over time. Thus, the analysis now turns to longitudinal techniques in order to consider the time ordering of events and whether changes in children's contexts precede changes in SWB.

The statistical methods used in this analysis are fixed effects (FE), between effects (BE) and random effects (RE). These methods are extensions of the logic of ordinary least square (OLS) regressions, but unlike the cross-sectional analysis – in which multiple waves of the UKHLS were pooled to maximise the sample – the longitudinal analysis is focused on multiple observations for the same individual. Between-effects models focus on the differences between children, which are useful comparisons to draw since much of the variation in children's circumstances and SWB occurs between children. However, estimates of the effects of socioeconomic circumstances on SWB derived from between-child analyses may be confounded with aspects of children that are not observed, such as their individual personalities, outlooks and genetic inheritance. An advantage of FE analysis is that it is able to control for time-invariant characteristics of individuals regardless of whether these are observed or not, with the result that an individual can be used as 'his or her own control' (Allison, 2009: 2). This is because the fixed component of the error term disappears from the regression equation when there are repeated observations for an individual. However, a shortcoming of FE models is that it may precisely be those unchanging factors that are of interest. FE models are also reliant on there being enough individual change over time for effects to be discernible. In comparison, RE models are able to take account both of within-

person variation and between-person variation and are, thus, more efficient. However, RE models may suffer from bias if unobserved heterogeneity is correlated with observed predictors.

Due to the age range for the youth survey, the number of waves that a child can participate is necessarily limited. Table 41 shows how many waves individual children participated in for Waves 1 to 11. A significant minority (7.0%) of children took part in six waves, which means that they completed a youth survey every year from the age of 10 to 15 years. For the 33 children that took part in seven waves, it appears that two interviews were carried out in a single year because the fieldwork period varied from one year to the next. The majority of children (92.7%) took part in five waves or fewer either because they were older than 10 when they first joined the study, or because they missed waves due to non-response and attrition.

Table 41: Number of waves of youth survey participated in by 10 to 15-year-olds

Number of waves	Frequency	%
1	4350	30.3
2	3004	20.9
3	2365	16.5
4	1953	13.6
5	1638	11.4
6	1011	7.0
7	33	0.2

A shortcoming of the cross-sectional analysis presented thus far in this chapter is that it is not able to identify whether the same children experience socioeconomic disadvantage over subsequent waves of the UKHLS or whether there is 'churn', with children moving in and out of disadvantage. These different scenarios would have different implications for public policy and are, therefore, substantively important. An advantage of panel data is that it is possible to explore stability and change within and between individuals. Table 42 shows the within and between variation for children's SWB, and for the socioeconomic variables considered in the cross-sectional analysis. The standard deviations are approximately similar for the SWB variables. However, for most of the socioeconomic variables, there is considerably more variation between children than within and, as would be expected, this is particularly marked for the Townsend deprivation quintile, home ownership and deprivation.

Table 42: Within and between variation for SWB and socioeconomic variables (for children participating in at least two waves)

	Between (SD)	Within (SD)
Children's SWB		
Low SWB life as a whole (i.e. <=3 out of 6)	0.23	0.24
Low SWB 4 domains (i.e. <=12 out of 24)	0.14	0.15
Low SWB family (i.e. <=3 out of 6)	0.17	0.17
Low SWB friends (i.e. <=3 out of 6)	0.15	0.18
Low SWB appearance (i.e. <=3 out of 6)	0.32	0.30
Low SWB school (i.e. <=3 out of 6)	0.28	0.28
Low SWB schoolwork (i.e. <=3 out of 6)	0.28	0.28
Socioeconomic variables		
Townsend Deprivation (most deprived 2 quintiles)	0.49	0.09
Home ownership	0.47	0.09
Deprived (lacking at least 2 items)	0.44	0.22
Feel unsafe after dark in area	0.44	0.27
Means-tested benefits	0.43	0.23
No pocket money / savings	0.38	0.22
Overcrowded accommodation	0.38	0.13
Worklessness	0.31	0.16
Poverty status (using 0.5 factor for 10-15-year-olds)	0.35	0.27
Worry about crime	0.31	0.20
Subjective poverty	0.28	0.23
Don't like neighbourhood	0.27	0.15
Problems paying bills	0.23	0.19
Inadequate heating	0.20	0.14

Table 43 presents similar analysis to that shown in Table 42 but showing the proportion of observations (i.e. child-waves), children and waves that were spent in each state. As before, there was a high degree of stability in home ownership: just over two-thirds (67.1%) of children lived in a home that was owned in at least one wave, and for these children, 98.2% of time was spent in this state. There was a similar picture for the Townsend Deprivation score, although a smaller proportion of children lived in the two most deprived quintiles

(43.3%). Indeed, there was considerable stability for all the socioeconomic variables, with children who were experiencing disadvantage according to these different criteria spending most of their time (i.e. waves) in these states. In comparison, there was less stability in children's SWB: children with low SWB spent about half of their time (i.e. waves) in this state.

Table 43: Proportion of observations, children and time spent in different states of SWB and socioeconomic circumstances

	Overall % (observations)	Between % (children)	Within % (time spent)
Children's SWB			
Low SWB life as a whole (i.e. <=3 out of 6)	12.1	22.5	53.5
Low SWB 4 domains (i.e. <=12 out of 24)	4.4	9.1	48.1
Socioeconomic variables			
Home ownership	67.1	65.3	98.2
Townsend Deprivation (most deprived 2 quintiles)	43.3	47.7	97.8
Overcrowded accommodation	19.5	23.5	89.1
Deprived (lacking at least 2 items)	35.6	43.9	86.3
Feel unsafe after dark in area	42.5	52.0	81.8
Means-tested benefits	33.9	42.4	82.8
No pocket money / savings	23.8	30.9	79.1
Worklessness	13.6	20.4	76.7
Don't like neighbourhood	10.1	13.9	75.7
Worry about crime	15.1	20.9	72.6
Poverty (using 0.5 factor for 10-15-year-olds)	25.4	39.2	69.6
Inadequate heating	6.3	10.1	68.4
Subjective financial difficulties	15.3	26.7	63.1
Problems with bills	9.4	17.3	61.5

Moving onto longitudinal analysis of the socioeconomic predictors of SWB, Table 44 shows the results of the FE, BE and RE regressions for the adult-reported socioeconomic variables including deprivation, which was included in Waves 1, 2, 4, 6, 8 and 10 of the UKHLS, while Table 45 includes the child-reported variables about their neighbourhoods and pocket money/savings from Waves 5, 7 and 9. As can be seen, the RE models produce similar coefficients as the BE models for the fixed characteristics of children such as sex and

ethnicity, while calculating estimates that are a weighted combination of both the FE and BE

coefficients for the time-varying socioeconomic variables.

Table 44: Fixed, between and random effects regressions of 4-domain SWB model and adult-reported socioeconomic variables

Variable (reference category in brackets)	Regression coefficients		
	Fixed effects	Between effects	Random effects
Child and family characteristics			
Female		-0.30***	-0.30***
Age (10)			
11	0.07	-0.26*	-0.15*
12	-0.45	-0.92***	-0.80***
13	-0.92	-1.34***	-1.38***
14	-1.29*	-1.83***	-1.89***
15	-1.48	-2.23***	-2.26***
Ethnicity (White)			
Mixed		0.15	0.17
Indian		0.80***	0.86***
Pakistani		0.96***	0.97***
Bangladeshi		1.11***	1.13***
Black Caribbean		-0.04	0.03
Black African		0.71***	0.69***
Other		0.32	0.32
Family structure (2 biological-parents)			
Step-parent family	-0.23	-0.73***	-0.66***
Single-parent family	-0.32	-0.42***	-0.44***
Other family type	-0.45	-1.17***	-1.06***
Adult-reported socioeconomic variables			
Equivalised income quintile (highest)			
Lowest quintile	-0.19	0.33*	0.11
2nd quintile	-0.03	0.07	0.02
3rd quintile	-0.02	0.01	0.01
4th quintile	-0.06	0.09	0.01
Worklessness	0.01	0.14	0.12
Means-tested benefits	-0.16	-0.12	-0.12
Home owned	-0.15	0.02	0.02
Inadequate heating	-0.10	-0.32*	-0.24*
Subjective financial difficulties	0.0	-0.31**	-0.19*
Deprivation index	-0.04	-0.11***	-0.09***
Townsend (2 most deprived quintiles)	0.07	-0.07	-0.08
cons	21.69***	21.61***	21.53***
N (unweighted) cases	17589	17589	17589
R^2 within	0.15	0.14	0.15
R^2 between	0.02	0.08	0.08
R^2 overall	0.04	0.09	0.09

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. All models also include wave of survey and country.

In terms of demographic characteristics, sex was significant in the models where differences were measured, with girls more likely than boys to have low SWB. Older age was associated with lower SWB in all models and there were larger coefficients in the BE/RE models, meaning that there were larger differences in SWB between individual children of different ages than drops in SWB as children get older. In terms of ethnicity, Black African, Indian, Pakistani and Bangladeshi children had higher SWB than White children. All of these findings are in line with expectations given the analysis presented in Chapter 2, and following the conclusions of that chapter, it is not possible here to distinguish between differences that are explained by a lack of measurement equivalence and substantive differences in SWB for children of different ages, sexes and ethnicities. For family structure, there were greater differences between children (than within) in the extent to which living in a step- or single-parent family was associated with lower SWB.

None of the adult-reported socioeconomic variables reached statistical significance in the FE models. However, in the RE model for the adult-reported socioeconomic variables, subjective financial difficulties, deprivation and inadequate heating were associated with lower SWB. In the same way as for the cross-sectional analysis, the FE, BE and RE regressions including the deprivation index were also carried out with a multiply imputed dataset, with similar results (shown in Appendix 1).

In the RE model for the child-reported socioeconomic variables, children living in a home that is owned – and unexpectedly, those in a household receiving means-tested benefits - had higher SWB. The child-reported measures of neighbourhood disadvantage were all associated with lower SWB in all three of the models, however, the child-reported measure of pocket money and savings was not significant in the FE model.

Table 45: Fixed, between and random effects regressions of 4-domain SWB model, adult- and child-reported socioeconomic variables

Variable (reference category in brackets)	Regression coefficients		
	Fixed effects	Between effects	Random effects
Child and family characteristics			
Female		-0.42***	-0.43***
Age (10)			
11	0.09	-0.35*	-0.29**
12	-1.01*	-0.87***	-1.02***
13	-1.50*	-1.87***	-1.84***
14	-2.22*	-2.45***	-2.34***
15	-2.22*	-2.45***	-2.49***
Ethnicity (White)			
Mixed		0.29	0.31
Indian		0.83***	0.84***
Pakistani		0.84***	0.85***
Bangladeshi		1.22***	1.21***
Black Caribbean		-0.23	-0.20
Black African		1.10***	1.09***
Other		0.79**	0.76**
Family structure (2 biological-parents)			
Step-parent family	-0.46	-0.63***	-0.62***
Single-parent family	-0.61	-0.73***	-0.71***
Other family type	-1.02	-1.22***	-1.21***
Adult-reported socioeconomic variables			
Equivalised income quintile (highest)			
Lowest quintile	0.32	-0.23	-0.01
2nd quintile	-0.04	-0.24	-0.18
3rd quintile	0.04	-0.21	-0.11
4th quintile	-0.02	-0.00	0.01
Worklessness	0.19	-0.09	-0.01
Means-tested benefits	-0.05	0.33**	0.21*
Home owned	0.38	0.17	0.23*
Subjective financial difficulties	-0.28	-0.01	-0.11
Townsend (2 most deprived quintiles)	0.17	0.01	-0.03
Child-reported socio-economic variables			
No pocket money / savings	-0.26	-0.82***	-0.66***
Does not like neighbourhood	-1.37***	-2.02***	-1.83***
Feels unsafe after dark in area	-0.79***	-1.22***	-1.07***
Worried about crime	-0.37**	-0.47***	-0.46***
cons	21.30***	21.98***	21.81***
N (unweighted) cases	8955	8955	8955
R^2 within	0.19	0.17	0.18
R^2 between	0.09	0.16	0.16
R^2 overall	0.10	0.16	0.17

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. All models also include wave of survey and country.

Discussion

As set out in the introduction, this chapter focuses on the extent to which measures of children's socioeconomic circumstances could be said to be 'child-centred'. This means focusing on the specific circumstances of individual children and drawing on children's own assessments wherever possible, which contrasts with categorising children's socioeconomic status on the basis of assumptions about how resources are shared within households. Whether or not children live in poor households traditionally defined, if they are missing out on the items and activities that their peers have, then they are likely to have lower SWB. However, child-centredness is about more than just whether an indicator takes the individual child as the unit of analysis or is child-reported. It also requires careful consideration of topics shown to be important to children. Qualitative studies highlight themes that are not generally considered in child poverty analyses, such as children's sensitivity to the stigma of poverty, their awareness of the financial struggles facing their families, and the myriad ways in which they experience poverty-related stress within their relationships. Awareness and concern about financial stress may have direct impacts on children's SWB, and it may also lead to children exerting their agency by not asking for items that they would like, or concealing poverty-related problems that they are facing to protect their parents. Thus, parents may not know which material items and activities children feel they need to fit in. These types of insights are not usually reflected in quantitative analyses of child socioeconomic disadvantage, thus, this analysis provides a novel contribution in this regard.

In this chapter, the socioeconomic variables contained within UKHLS are categorised on the basis of their child-centredness. Five measures are child-reported, take the child as the unit of analysis and are judged to be child-centred: questions asked about children's spending and saving habits, mobile phone ownership and perspectives on their neighbourhoods. Three

other measures – housing tenure, housing quality and neighbourhood deprivation – take the child as the unit of analysis because they are the same for every person living in the household. These measures were also judged to be child-centred since qualitative research with children highlights the importance of neighbourhood quality, the stigma associated with living in poor quality or social housing, and the fact that children in social housing may live in greater proximity to neighbourhood violence than their counterparts in non-social housing. Measures such as problems paying bills, subjective poverty and receipt of means-tested benefits were judged to be child-centred on the basis that awareness of financial stress within families and poverty-related stigma are key themes emerging from research with children. Parental unemployment was also judged to be child-centred insofar as it says something about the amount of parental time and resources that a child may benefit from. However, it was not expected to have a clear-cut relationship with SWB as an improvement in financial circumstances brought about by increased earnings may be offset by a decrease in time spent with a parent. Deprivation was judged to be partly child-centred as some items contained within the UKHLS are known to be important to children, but the question format does not allow for the analysis of individual children and their view of whether an item is needed or not.

In bivariate, cross-sectional analysis of the UKHLS, all of the socioeconomic measures - apart from owning a mobile phone - were associated with children's SWB. However, many of these associations disappeared once control variables were included. In multivariate, cross-sectional analysis, as hypothesised, the child-reported measures were stronger predictors of children's SWB than the adult-reported measures, although there were some exceptions, with mobile phone ownership and paid work unrelated to overall SWB. Moderation analysis highlighted some interesting interactions with age and sex that help explain these findings. In

respect of mobile phone ownership, girls were more likely than boys to have low satisfaction with life as a whole and especially with their appearance if they *had* a phone, but not if they lacked a phone. This may be explained by phone ownership being related to greater use of social media, which has been found to predict depressive symptoms in girls more strongly than in boys (Kelly *et al.*, 2018). There was also an interaction between paid work and age such that younger children had lower SWB if they 'worked' but there was no relationship between paid work and SWB for older children. This interaction, as well as the fact that children under the age of 13 are not allowed to work by law, suggests that younger children may be interpreting this question as being about household chores. Thus, this question was excluded from further analysis.

In relation to the adult-reported measures, this analysis shows that traditional indicators of socioeconomic circumstances provide an important context to an understanding of children's circumstances, but they are only part of the story. Low household income, the most widely used indicator of poverty, is calculated on the basis of an equivalisation process that assumes that all households share their resources in the same way, and also that children's consumption needs are lower than adults. Yet research evidence emphasises that the relative costs of children compared to adults are underestimated, with poor, single-parent households especially likely to be missed by such approaches. Furthermore, in some households, parents sacrifice their own needs to protect their children from poverty or count on the financial support of extended family, while in other households, these coping strategies are not available. The distribution of resources within and between households also varies according to the family structures that children live in, with research designs rarely reflecting the range of different circumstances in which children live. Children within the same household may

have different access to resources because of what they receive - or do not receive - from a non-resident parent or other family member.

Different formulations of the measurement of household incomes indicate that the widely used approach of identifying households as income-poor if equivalised incomes are less than 60% of the median may not be the best approach to understanding children's SWB. None of the income poverty measures were related to children's 4-domain SWB scores or satisfaction with life as a whole. However, when the whole distribution of household income was considered – either in a continuous or categorical formulation – there was a clearer association with overall measures of SWB. Furthermore, there was a monotonic relationship with income quintiles for low overall SWB when children and adults were assigned the same equivalisation factor. This suggests that an approach that identifies a greater number of low-income households with a large adult to child ratio, such as single-parent families, may be helpful in understanding children's SWB. Thus, for the rest of the thesis, income quintiles were calculated using this approach.

Analysis of the domain measures of SWB demonstrated some interesting differences in how these were related to socioeconomic measures and helped to explain non-significant findings for the 4-domain measure. All of the socioeconomic measures were related to school and schoolwork, which is unsurprising given the clear evidence of a socioeconomic gradient for educational attainment and other aspects of school life (Heckman, 2006; Ermisch, 2008; Gregg, Propper and Washbrook, 2007). In contrast, dissatisfaction with appearance had the least clear relationship to children's socioeconomic circumstances. Furthermore, only the measures capturing deprivation that is visible to others or financial stress experienced by families were related to dissatisfaction with family and friends, which may indicate that these

aspects of children's socioeconomic contexts have knock-on effects for the quality of children's relationships. This will be explored further in Chapter 5, which considers family relationships in more detail. There was also a noteworthy finding of children in income-poor and workless households being *less* likely to be dissatisfied with their family relationships than non-poor children, and a u-shaped pattern for neighbourhood deprivation and income quintiles whereby children in the most deprived quintile had higher satisfaction with family and appearance than those in the second lowest quintile and, therefore, non-significant 4-domain SWB scores. These findings were hypothesised as potentially relating to higher levels of unemployment or underemployment in the most deprived households and neighbourhoods, which could result in more parental time spent with children. An alternative explanation is that children living in the most deprived circumstances experience a stability of circumstances that is less detrimental for their SWB than changes into and out of poverty. As a whole, these findings of different domains of SWB having different relationships with children's socioeconomic circumstances is a novel contribution to the literature on children's SWB, and would be hidden from analysis that only considers composite SWB scores.

There were also some moderators of the relationship between children's socioeconomic circumstances and SWB. One finding was that children in low-income households living in the most deprived neighbourhood quintiles had higher SWB than those living in the least deprived neighbourhood quintiles, which suggests that disadvantage within a context of affluence – i.e. 'not keeping up with the Joneses' - may be worse for SWB than when children live in contexts where others are in similar circumstances. There is other research to support this finding (Mahony and Pople, 2018; Gathergood, 2012). Furthermore, there was some indication of disadvantage – specifically worklessness, overcrowding and feeling

unsafe after dark in the neighbourhood - having a greater effect on the SWB of boys than girls.

When entered in blocks into the logistic and linear regressions, only associations for the deprivation index, housing tenure, being in the second lowest Townsend neighbourhood deprivation quintile, and the child-reported neighbourhood or pocket money / savings variables remained. Notably, in the model containing the child-reported measures, 18% of the variation in SWB was explained, which is twice as much explained variation as the models with only adult-reported measures. These variables capture facets of children's material environments that have been shown from qualitative research to be important for their quality of life. They are also direct measures of children's living standards that would be expected to mediate the effect of contextual socioeconomic factors on SWB. Chapter 5, which will make use of SEM to explore the influence that background socioeconomic factors such as income have on children's SWB 'upstream', will consider mediation further.

Longitudinal analysis was conducted to see whether changes in children's socioeconomic circumstances predict changes in their SWB, however, this added relatively little to the conclusions drawn from the cross-sectional analysis about the relative importance of different socioeconomic indicators for children's SWB. This is likely a result of there being relatively little change in the socioeconomic circumstances of children in the sample, and a relatively small number of cases present in multiple waves of the survey. Nonetheless, all three child-reported measures of neighbourhood were significant in the fixed effects model, indicating that changes in children's experiences of their neighbourhoods can help to explain differences in SWB over time. Fixed effects analysis allows for unobserved, time-invariant confounding to be discounted, which lends support to an interpretation of child-reported

material circumstances being important for SWB. However, a causal interpretation is not warranted as other, time-varying factors in children's lives may explain changes in their perspectives on their neighbourhoods as well as their SWB.

Another explanation for the weak relationship between contextual measures of socioeconomic circumstances and children's SWB relates to children's expectations for life. Ethnographic research provides evidence of children in low-income households having lower aspirations than their more affluent peers: in Lareau's (2011) study, children in disadvantaged circumstances learnt a sense of 'constraint, as opposed to entitlement', and that they should not 'see themselves as special and worthy of being catered to in daily life' (Lareau, 2011, p. 83). Thus, low aspirations may protect children's SWB equally effectively as conditions of affluence (Diener, 1984). The literature on adaptive preferences further supports the idea that children adapt to socioeconomic disadvantage by adjusting their aspirations downwards, and that when disadvantage is a long-term state rather than a temporary anomaly, aspirations are likely to be lowered even more (Halleröd, 2006).

It is also likely that social comparisons operate differently for children than adults - whereby 'keeping up with the Joneses' is thought to be a key explanation for the relationship between income and adult SWB - because the social contexts that children use for comparisons may be more limited than those used by adults. Thus, it is not surprising that children's perspectives on their neighbourhood are strongly associated with their SWB. Furthermore, children in disadvantaged circumstances, who less often leave their neighbourhoods for holidays and excursions, may have less exposure to contexts that might raise their aspirations and cause them to be discontented with their material situations. Consequently, there are theoretical reasons to expect that the situations of other people living in children's

neighbourhoods will interact with children's own family circumstances to shape their expectations for life and, therefore, SWB. Indeed, this analysis provides evidence to support this, as children in low-income households living in deprived areas reported higher SWB than children in similar circumstances in more affluent areas.

To conclude, this analysis supports the hypotheses that measures of children's socioeconomic circumstances that are child-centred, child-reported or take the child as the unit of analysis are stronger predictors of SWB than adult-centred, adult-reported measures that take the household or parents as the unit of analysis. However, a clear limitation of this analysis is that there are very few child-reported measures in the UKHLS to examine. Thus, the focus has mainly been on measures that could be said to be child-centred because they relate to themes that are known from research to be important to children. Chapters 4 and 5 will develop some of the family-related topics highlighted in child-centred research on poverty and consider in more detail the extent to which different aspects of children's family relationships function as causal mechanisms on the pathway between poverty and SWB.

Chapter 4: Complex family structures and children's SWB

Introduction

Children in the UK live in an array of different family forms, with different numbers of co-resident parents, siblings, extended family members and other adults. Although most children live with both biological parents and no other adults in a single home, over the last few decades this nuclear family structure has become less common, while alternative family forms have increased. There has been a wealth of research on the impact of changes to the 'standard family form' (Furstenberg, 2020), including whether and how parental separation affects children's outcomes such as educational attainment (Scott, 2004; Ermisch and Francesconi, 2001) and mental health (Hetherington, Bridges and Insabella, 1998; Harold and Conger, 1997). In much of the literature – especially that relating to children's educational attainment - the primary causal mechanisms of interest relate to the amount of parental time and resources that are available to children, thus, there is a focus on whether children live with two parents or one. Research has also centred on the emotional and relational stress caused by parental separation, such as whether deteriorations in interparental relationship quality affect the parent-child relationship and have knock-on effects for children's mental health. However, less is known about the intricacies of different family compositions, including whether sibship complexity and the formality or permanence of different family structures are important for children's quality of life, and what role extended family networks play in providing support to children in single- and two-parent families. This chapter addresses these gaps, with a particular focus on how children's family structures relate to their SWB, about which there is limited evidence.

Trends in family form

In the latter third of the twentieth century, a series of sociodemographic changes in Western industrialised countries transformed the living arrangements of children, leading to a proliferation of different family structures (Furstenberg, 2020). These changes included declines and delays to fertility and marriage, alongside increases in cohabitation, divorce and lone parenthood (McLanahan, 2004; Zaidi and Morgan, 2017), which together led to fewer children living in the 'standard family form' - defined as a heterosexual married couple living with their children in one household (Furstenberg *et al.*, 2020) - and more living in alternative structures. A parallel trend involved a substantial increase in women entering the labour force, subverting previous sex-based divisions of labour and norms relating to typical ages of childbearing. In comparison to previous cohorts – especially those born in the mid-twentieth century - the current generation of children in the UK have mothers who are older and more likely to be working, and have fewer siblings, on the one hand, but greater complexity of sibship and family composition on the other.

The latest data on family characteristics and childbearing provide evidence of these trends. In 2021, there were an estimated 8.1 million families[12] with 14.5 million dependent children[13] in the UK, meaning that families had, on average, 1.8 dependent children[14]. This figure has changed little since 2001, but it decreased substantially during the last third of the twentieth century. In England and Wales, the latest cohort of women to have completed their childbearing years by 2020 (i.e. those born in 1974) had 1.92 children on average, which compares to an average of 2.42 children born to mothers born forty years earlier. In addition

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[12] Families are married, civil partnered or cohabiting couples or a lone parent with at least one child
[13] Dependent children were defined as children living with their parent(s) and either aged under 16 or aged 16 to 18 and in full-time education
[14] This is the mean number of dependent children

to this long-term decline in family size, childbearing is increasingly being delayed. In 2020, half of women remained childless by their 30th birthday, which is twice as many as forty years previously (Office for National Statistics, 2021b). Relatedly, women's participation in the labour market has increased, with the employment rate among women aged 25 to 54 in the UK rising from 57% in 1975 to 78% in 2017 (Roantree and Vira, 2018). In 2019, three-quarters (75.1%) of mothers with dependent children were in work (Office for National Statistics, 2019).

In relation to family structure, just under two-thirds of dependent children (64.4%) lived with parents who were married[15] in 2021, while 13.6% lived with cohabiting parents and 21.6% lived in a lone-parent family (Office for National Statistics, 2021). Recent time trends reveal a decrease between 2001 and 2021 in the proportion of children living with married parents (from 68.0%), an increase in the proportion living with cohabiting parents (from 10.1%), but no change to the proportion living in lone-parent families (21.9%). As these figures do not differentiate between biological, step and adoptive parents, there are no up-to-date estimates of the proportion of dependent children living in step-parent or adoptive families. However, census statistics indicated that in 2011, 9% of dependent children lived in a step-parent family in England and Wales (Office for National Statistics, 2020).

In 2021, a small proportion of dependent children lived in a same-sex cohabiting couple family (0.1%) or a civil-partner couple family (0.3%)[16]. Although this relates to a very small

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[15] The vast majority of whom will be opposite sex couples, although since same sex marriage became legal in Great Britain in 2014 – and in Northern Ireland in 2020 – some of these will relate to same-sex married couples.
[16] It is important to highlight that the confidence intervals around the estimates of children in same-sex cohabiting couple families and civil-partner couple families are so wide that these figures are considered 'unreliable for practical purposes'. Since opposite-sex civil partnerships became legal in

number of children, these numbers have grown substantially since 2011, with a 210%

increase in same-sex cohabiting couples and a 457% increase in civil partnerships over this

period (Office for National Statistics, 2021).

Further examination of these sociodemographic trends suggests a widening of disparities in

the resources available to households with children, and socioeconomic disadvantage being

clustered in ways that penalise children living in certain family forms. In the UK in the three

years to 2019-20, relative poverty was almost twice as high amongst lone-parent families

(46%) as in couple families (25%) (Cribb *et al.*, 2022). The UK also has comparatively low

proportions of lone mothers in paid work, with knock-on effects for poverty rates: in

comparative analysis of 25 European countries, the UK had the second highest proportion of

'inactive' lone mothers, and above average 'at-risk-of-poverty' rates (Hübgen, 2018). In

earlier comparative research of the UK and nine other OECD countries, the UK had the

second highest poverty rate[17] (after the US) for unemployed lone-mothers, and this group had

a poverty rate (80%) three times higher than the rate for working lone mothers (27%)

(Kennedy, Bradshaw and Kilkey, 1996).

Research on family form and children's outcomes

A wealth of research has sprung up to document the effect that these trends have had on

children, most notably whether and how changes to the 'conjugal family form' (Goode, 1963)

affect children's mental health (Hetherington, Bridges and Insabella, 1998) and educational

attainment (Ermisch and Francesconi, 2001). In 1991, Amato and Keith conducted a meta-

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2019/2020, some civil partnership couples in 2021 will be opposite-sex couples, although most are
likely to be same-sex couples.
[17] Here, income poverty was defined as 50% of median income

analysis - updated by Amato in 2001 - and found that children with separated parents scored significantly lower than children with continuously married parents on a variety of children's outcomes (Amato, 2001; Amato and Keith, 1991). However, there were individual differences in how children fare post-separation, leading Amato (2001) to counsel against a simple conclusion of worse outcomes for children in non-intact families:

> Depending on the specific constellation of factors around the time of divorce, children may exhibit an improvement in functioning, a modest decline in functioning that improves over time, a substantial long-term decline in functioning, or little change.
>
> (Amato, 2001, p. 366)

Various explanations have been put forward for individual differences in children's adjustment, including whether children are exposed to interparental conflict, a deterioration in parent-child relationship quality, worsening economic circumstances, or unwelcome house or school moves (Amato, 2001). Different types of psychological, relational and financial stress are theorised in the literature to explain the chain of events that link parental separation to worse outcomes for children. Multiple changes in family structure have been shown to be particularly detrimental for children (Rodgers and Pryor, 1998), especially in relation to the quality of the parent-child relationship (Dunn and Deater-Deckard, 2001), and may be accompanied by changes of school, with knock-on effects for friendships (Dinisman *et al.*, 2017). However, research designs often do not allow for children who have spent a long period of time in their current family structure to be considered separately from those who have experienced a family change more recently, or the detailed analysis of the family-related factors and events experienced by children in the run-up to and aftermath of a transition. There are two distinctive methodological traditions in family structure research: small-scale, in-depth quantitative and qualitative designs - sometimes involving multiple informants – that are able to capture the detail of family structure changes and processes, as well as large-scale, representative-sample, surveys that are able to consider the variability of circumstances and

family forms in which children live (Dunn and Booth, 1994). Rarely are research designs able to combine the rich detail of the former approach with the generalisability of the latter.

Cherlin and colleagues (1991) proposed three primary explanations for the negative effect of parental separation on children's outcomes. Two of these mechanisms were expected to come into play *before* parental separation and are not easily measurable: the effects of 'growing up in a dysfunctional family' and 'severe and protracted marital conflict' (Cherlin *et al.*, 1991, p. 1386). Only the third mechanism – the emotional, financial and parenting consequences of a difficult break-up - relate to the aftermath of separation. Using methods that account for measured and unmeasured characteristics of families, they found that 'a substantial portion' of the effect of divorce was 'visible before the parents separate', especially for boys (Cherlin *et al.*, 1991, p. 1386).

The specific impact of lone parenthood on children's outcomes has been the focus of a number of studies. For example, using data from the British Household Panel Survey (BHPS), Ermisch and Francesconi (2001) found that living in a single-parent family as a child - especially in the first five years of life - was associated with lower educational attainment and greater emotional and behaviour difficulties as young adults, although the authors cautioned against a causal interpretation of these findings. However, one study that examined multiple child outcomes including self-esteem, locus of control and emotional and behavioural problems found no negative effect of single parenthood on any of these outcomes once correlated characteristics were taken into account (Gregg, Propper and Washbrook, 2007). In a meta-analysis of studies of lone parenthood in OECD countries, Chapple (2009) found a small negative effect of lone parenthood on children's well-being in cross-sectional studies, which became even smaller or disappeared when the focus narrowed to studies using

longitudinal methods, leading to the conclusion that: 'the better the quality of the study, the smaller is the effect size found' (Chapple, 2009, p. 4).

Family form and socioeconomic resources

As mentioned, the causal mechanisms linking family structure to children's outcomes theorised in the literature tend to relate to the quantity and quality of time and resources that parents have with children in lone- and step-parent families (Brooks-Gunn, 1994; Zill, 1994). There is ample evidence of lone-parent - especially lone-mother - households having lower material resources than couple households, thus, in numerous studies, the negative effect on children's mental health of living in a lone-parent family is explained by the greater socioeconomic disadvantage of these households (e.g.McMunn *et al.*, 2001). However, in step-family structures, the quantity and quality of parental resources may pull in opposite directions. Due to the presence of two adults, which increases the earning capacity of the household, children in step-parent families tend to have lower levels of socioeconomic disadvantage than children in single-parent families. For example, in analysis of 11 to 15-year-olds participating the British Household Panel Survey youth survey, Robson (2010) found that families that moved from a single-parent to a step-family household had higher average incomes than those remaining in a single-mother household. However, the greater economic advantage of step-families has not been found to translate into better outcomes for children (Zill, 1994), likely due to the unique challenges that these families face in defining and negotiating new roles and relationships between family members within the household (e.g. between step-parent and step-children) and outside of the household (e.g. between child and non-resident biological parent), including the loyalty conflicts that arise (Braithwaite *et al.*, 2001). Qualitative research with children provides evidence of inequitable sharing of parental time and resources amongst siblings causing step-family relationships to be strained

- or the quality of family relationships being poor for other reasons – with knock-on effects on children's well-being (Mahony *et al.*, 2017).

Role ambiguity of step-parenthood

One causal pathway theorised in the literature to explain the relationship between a step-parent family structure and poorer outcomes for children relates to the lack of clarity about the function and responsibilities that a step-parent should take on (Mostafa, Gambaro and Joshi, 2018; Stewart, 2005). The step-parent role has been described as one that is 'culturally undefined and ambiguous' (Braithwaite *et al.*, 2001). However, 'role ambiguity' is rarely measured in survey data, thus, in quantitative research on the topic, proxies are often used. A marker of step-parental commitment to step-children is the extent to which parental responsibility is assumed, and what language is used to describe the relationship. One study found that children in a 'bonded' typology viewed their stepparent as a parent, while children in 'functional' typology thought of their stepparent more as a friend. Both groups, which together comprised about half of the sample, had fewer mental health symptoms than children in the other three typologies - 'ambivalent', 'evasive' or 'conflictual' (Schrodt, 2006).

Another explanation for the challenges facing stepfamilies relates to the primacy of biological over non-biological relationships. It has been argued from a bio-social perspective that step-families are inherently problematic because parenting is 'at least partly activated by the "genetically selfish" activities of human beings' (Popenoe, 1994, p. 19). This position is challenged on numerous grounds, including evidence of low investment in children by biological fathers, which undermines the hypothesis that biological motivations trump non-biological ones (Kurdek, Booth and Dunn, 1994). Nonetheless, research suggests that step-

parents tend to favour biological- over step-children, and have lower levels of involvement and lower quality interactions with step-children than biological parents (Coleman, Ganong and Fine, 2000). Relatedly, studies have found higher rates of dissolution of partnerships when children from previous partnerships are present (Hetherington, Bridges and Insabella, 1998), indicating that the relationship between step-parent and step-child may be a stressor in the family system.

It is important to highlight that the relationship between step-parent and step-child should not be assumed to be unidirectional and primarily about the step-parent's interest and competence in parenting. Even in cases where step-parental investment in the relationship with step-children is high, step-parents may be met with an unreceptiveness or hostility from step-children who regard them as a rival for their biological parent's affection and time (Hetherington and Jodl, 1994). The quality of the step-parent-step-child relationship appears to be shaped as much – if not more – by the child as by the adult. Indisputably, the relationship between step-parent and step-child is defined by a level of involuntariness on both sides. The ties between step-parent and child are not usually chosen by either party and are contingent on, and subsidiary to, the relationship with the biological parent. Thus, for numerous reasons, the step-parent or step-child - or both - may reject the other to a greater or lesser degree (Hetherington and Jodl, 1994).

However, the formality of the ties between the parent and step-parent - and between step-parent and step-child - are likely to be important markers of the level of commitment felt by different parties towards each other. In earlier research on step-parenthood from the US, which defined step-families as those where the biological parent has married the step-parent (see section below for differences between the UK and US contexts in respect of marriage

and cohabitation), it has been observed that cohabitation likely confounds estimates of the effects on children of a 'crisis period' following the formation of a step-family, as in some families the step-parent moves in to the child's home months or years prior to marrying the child's biological parent (Brooks-Gunn, 1994). There may be a similar chronological explanation for differences in the extent to which the step-parent role has been formalised and identified as such by the step-parent, biological parent and child. It is likely that, in many cases, a romantic partner who lives with the child's biological parent but does not define themselves as a step-parent is simply at an earlier stage in the relationship.

Marriage and cohabitation

Comparisons of children's outcomes according to whether parents are married or cohabiting have been a less important strand of research in the UK in contrast to the US where marriage is a clear marker of advantage. Moreover, when marital status has been considered in UK research, such as in Ford and colleagues (2004), it was not found to be associated with childhood psychiatric disorder independently of family structure and other family characteristics (Ford, Goodman and Meltzer, 2004). Robson (2010) reached similar conclusions for children's SWB, finding no differences in SWB between children with married biological parents and those with cohabiting biological parents, which was highlighted to be 'truly a remarkable distinction' in the US and UK contexts (Robson, 2010, p. 80).

Family form and children's SWB

Most of the literature discussed thus far relates to the association between different family structures and children's mental health or educational attainment. However, a small number

of studies have considered the links between family structure and children's SWB, with mixed findings. In cross-sectional research, children not living with both biological parents were found to have lower SWB than their counterparts in intact families (Dinisman *et al.*, 2017; Bjarnason *et al.*, 2012; Rees and Bradshaw, 2018). However, children in lone- and step-parent families worried more about money and perceived their family to be less affluent than children in intact families, and much of the family structure differences in SWB were accounted for by their socioeconomic circumstances (Bjarnason *et al.*, 2012). In longitudinal analysis, Robson (2010) found lower SWB amongst children moving out of a two-biological parent family into a lone- or step-parent family, however, Patalay and Fitzsimons (2018) found no difference in the SWB of children in single- versus couple- parent families once a range of controls were included.

Sibship complexity and children's outcomes

A further dimension of family structure that warrants investigation is the number and type of siblings that children have in the households in which they live. As it is possible for children to live in any kind of family structure with any number and type of siblings, this gives rise to a multitude of different parent-child constellations. Importantly, the same family can be categorised differently for different siblings in the household. For example, although most children in two biological-parent families live only with biological siblings, some have half- or step-siblings who themselves would be categorised as living in a step-family structure. Furthermore, some 'blended families' contain mutual children - i.e. children who have co-resident half-siblings - while in others, children have only full- or step-siblings.

Despite a wealth of research on how children are affected by not living in the 'standard family form', relatively little is known about whether and how sibship complexity and the

formality of family structures affects children's outcomes (Mostafa, Gambaro and Joshi, 2018), and even less about how these aspects of family life affect children's SWB. Most studies categorise family structure according to the type of relationship – biological, step, adoptive or foster – that exists between parent and child, and neglect to consider the types of siblings that are present in each household. The few studies that investigate complex sibship provide evidence of poorer educational attainment and greater psychological difficulties for children living with half- or step-siblings compared to those with only full siblings (Tillman, 2008; Fomby, Goode and Mollborn, 2016; Hofferth, 2006). However, Mostafa and colleagues (2018) found the negative effect of complex sibship on children's adjustment to be mostly accounted for by children's (measured) family circumstances. There is also evidence of complex sibship affecting boys and girls differently: Tillman (2008) found family complexity to more strongly affect the educational attainment of boys than girls, and Mostafa and colleagues (2018) found that boys with only full siblings had an excess of externalising problems in single- or step-parent families, while girls with only full siblings had an excess of internalising problems in lone-parent families.

As mentioned, a dominant explanation for the poorer outcomes of children living with multiple siblings or in lone-parent families is that parental time and resources are spread more thinly in these families (Becker and Tomes, 1976). As children with non-full siblings have a greater number of siblings, on average, than children with only full siblings, complex sibship may be confounded with family size and structure. However, a simple conclusion about the benefits to children of living in household with a smaller adult to child ratio may be misplaced. For example, the amount of time that parents spend with children is theorised to explain the relationship between maternal employment and children's outcomes. Yet Hsin and Felfe (2014) found that mothers in full-time employment traded quantity for 'quality' of

time and spent the same amount of time on educational activities with children as mothers in part-time employment. The same may be true of single-adult households whereby the lone parent compensates for the absence of a second parent by investing more time into children than they would otherwise. Indeed, Kiernan (1996) found that the educational attainment of daughters of employed lone mothers was no different to that of daughters in dual-earner intact families, compared to daughters of unemployed lone mothers who were educationally disadvantaged (Kiernan, 1996). Furthermore, children are known to derive benefits from having siblings (Dunn, 1988), and 'only children' have lower SWB than children with siblings (Patalay and Fitzsimons, 2018), thus it may be difficult to separate the beneficial aspects of having siblings from the negative effects of sharing parental resources amongst a larger number of children.

Extended family

The research literature on the relationship between the nuclear unit and extended family members mostly focuses on the time, material resources and emotional support that is exchanged within and across households in 'vertical flows' between grandparents, parents and children, and the factors that influence these patterns of intergenerational family support (Furstenberg, 2020, p. 372). Furthermore, especially when genealogical flows relate to financial resources, their downward nature is emphasised; rarely do children assist their parents materially. However, part of the explanation for the limited focus on the involvement in children's lives of their grandparents and other members of extended family relates to survey methodology and the inherent challenges of data collection about these relationships (Furstenberg, 2020, p. 374). Indeed, in a review of kinship research, Furstenberg (2020) highlights that empirical and theoretical studies of kinship in developed societies are rare. However, when studies have surmounted these methodological challenges, extensive

interconnectedness with kin has been found. In a study of kinship relationships across a range of European and North American countries selected for their different welfare regimes, Ganjour and Widmer (2016) found that about a quarter (27%) of their sample had a pattern of high levels of kinship contact that were both vertical – i.e. with parents, aunts and uncles – or horizontal i.e. with siblings and cousins (Ganjour and Widmer, 2016, p. 209).

A distinctive strand of qualitative research documents the importance of kinship ties amongst low-income families, which enables the sharing of limited resources within and across households experiencing poverty, with a particular focus on ensuring children's material needs are met. In ethnographic research, Lareau (2011) found categorical differences between social classes in the way that everyday life was configured, including the nature of contact with extended kin. Spending time with large networks of extended family was 'part of the fabric' of daily life (Lareau, 2011). It was common for children to stay the night at the houses of family members, and vice versa. Maternal grandmothers in particular played an important role, for example, in paying for birthday presents, providing childcare or a place to live temporarily (Lareau, 2011). These themes are borne out in a qualitative longitudinal study of childhood poverty in the UK, which found widespread reliance on extended family members – and especially grandparents – to pay for the expensive items that children needed that were beyond the budgets of low-income families (Mahony *et al.*, 2017).

Furthermore, quantitative research has also shown that low-income families that have regular contact and high levels of support from extended kin can help 'buffer' children from the worst effects of socioeconomic disadvantage. Hashima and Amato (1994) found that, consistent with a 'buffering' hypothesis, there was an interaction between help received from social networks and household income: social support for low-income parents was related to

the parent-child relationship, but for high-income parents it was not (Hashima and Amato, 1994). Much of the research in this area relates to extended family support within lone-parent or ethnic minority households, including UK studies that found nuclear family units in working-class neighbourhoods to be strongly rooted in networks of extended family. However, there has been a tendency to overemphasise ethnic differences in patterns of family formation, when qualitative studies indicate that 'social class trumps ethnicity' in this regard (Furstenberg, 2007, p. 430).

A further consideration is whether households with children - especially lone-parent families - have other adults such as grandparents, other relatives, friends and romantic partners living with them. For lone-parent families, the 'additional adult' hypothesis posits that the presence of an additional adult can compensate for the absence of a second parent by providing an extra layer of support and supervision to children in the household. This additional support is thought to be especially beneficial for low-income, lone-parent households, and also for older children and where the additional adult is the same sex as the child (Stolba and Amato, 1993). However, the research on step-parenthood described above indicates that the nature and quality of a child's relationship with an additional adult is likely to vary according to their identity and the clarity about their role. An informal structure, whereby a lone-parent lives with a romantic partner who has no formalised parenting responsibilities, is likely to have a more ambiguous role vis-a-vis the child than a formalised structure in which the step-parent has formalised their parenting role or even adopted the child. In turn, a step-parent of any type may have greater role ambiguity than a co-resident grandparent that has a genealogical relationship with the child.

Within- and between- family differences in SWB

Much of the literature on family structure and children's outcomes is focused on between-family differences. However, an important consideration when investigating the effect of family circumstances on children's SWB is whether variation in children's SWB relates to differences between the families that find themselves in divergent family circumstances, or the circumstances themselves. If there are selection effects, such that unobserved characteristics of families increase children's risk of experiencing poverty, living in certain family structures and also experiencing lower SWB, then the assumed direction of causality from family circumstances to SWB is brought into question. Notably, some of the causal mechanisms relating to the family environment that are hypothesised in the literature to affect children's outcomes - such as family dysfunction, conflict and abuse – are not easily measured. Furthermore, if children's SWB levels are shaped by their personalities or a genetically inherited 'set point', as argued by Cummins (2010), then it is important to take account of prior levels of SWB and unmeasured aspects of children's family environments when trying to isolate the effect of measured aspects of these environments.

Children's views

As highlighted in Chapter 1, insights gained from qualitative research can shine a light on the processes that explain how and why children fare differently in different family structures. The qualitative literature about children's views and experiences of living in a non-nuclear family structure is small compared to the quantitative literature on the subject, but qualitative methods are increasingly recognised as being essential to elucidating the factors within the family system that have the greatest bearing on children's well-being:

> Researchers using qualitative strategies have a lot of work to do in probing family boundaries, communication strategies, and, of course, examinations of how family "members" are acquired and maintained over time.

Qualitative research on children's views about parental separation – such as that conducted by Dunn and Deater-Deckard (2001) - highlight the importance of communication with children to guard against the confusion and accompanying distress that can arise when a separation is not well explained. In the absence of clear explanations and the opportunity to ask questions, children may attribute blame to themselves. Relatedly, having an active role in decisions about time spent across households is associated with greater-well-being for children. Unsurprisingly, lower levels of parent-child conflict and hostility – and a closer relationship with parents, grandparents and friends – are associated with fewer difficulties for children (Dunn and Deater-Deckard, 2001).

Research has found that when children's living arrangements change to incorporate new household members, children may have complex feelings towards their new parental figures and siblings. Children in stepfamilies feel less close to a step-parent than they do to a biological parent (Dunn and Deater-Deckard, 2001). Furthermore, despite - or perhaps because of - expectations that mutual children reduce the 'role ambiguity' of step-parents (Cherlin, 1978; Stewart, 2005), research with children indicates that the presence of half-siblings is not always welcome when it solidifies ties to a step-parent that is not liked:

> I think it has everything to do with whether you like who they're remarried to because if you don't like the person, then I think you'll resent your parent. Especially if they have a kid, because then this little kid is tied to you by the person that you don't even like.
>
> (Bernstein, 1997, p. 166)

Qualitative research with children in low-income families provides evidence that being a stepchild in a household with a mutual sibling can have implications for the intra-household

sharing of resources when there are problems in the child's relationship with their step-

parent, although the direction of causation is not clear.

> I'm not really close to my stepdad […] [We argue about] petty things, say, me and my sister have both got iPads, so he would say 'Don't use her charger', he's like, he's very petty. So he will argue at the silliest things and then, yes, just silliest things like chargers and like stuff. […] My mum agrees on some stuff that I say. Like why I don't like him and all that stuff. Then she's just like, 'I can't change what's happened' […] I was 3 [when he moved in] He could have created the bond but, you know, it just never worked out.
>
> 12-year-old girl (Pople, unpublished research)

Bernstein (1997) identified a number of factors contributing to the nature and quality of

children's relationships with their half-siblings, including the level of conflict in inter-

household relationships. Notably, siblings could be a source of support in the face of difficult

relationships with other family members. If both sides of a non-full sibling dyad feel

abandoned by their step- or biological-parent, they may be joined by a sense of solidarity and

mutual support.

> I have this fantasy that I can understand her, and she can understand me in a way that's probably very unique. Because he did almost exactly the same thing to her that he did to me [...] He hasn't been there for her either, so I can't really say that she's taken him away, or in any way diminished what I've gotten from him.
>
> (Bernstein, 1997, pp. 169-170)

The age of the older child and age gap between half-siblings was also a factor. Being an older

child with younger half-siblings who are mutual children elicited feelings of jealousy for

some children. However, a large age gap between siblings - and not living with each other the

whole time - sometimes helped.

> The younger kids are, I don't know, her precious pearls or something. She doesn't lock me in the cellar, but she kind of indulges them in everything. I guess cause they're younger.
>
> (Bernstein, 1997, p. 157)

> I never fight with him. There's a big enough gap there so that most of that strife and jealousy, resentment or whatever, just isn't there. I mostly take care of the kids when I go over. It's not like being an uncle, I'm more a part of the family than that.

> (Bernstein, 1997, p. 161)

The number of children in each full sibling cohort - and the uniqueness of the relationship between siblings - was also a factor in how children assessed their relationship with half-siblings. For children without full siblings, there was no reason to differentiate between types of siblings:

> She's really important. I don't have any full sisters, so she's the oldest any-related sister that I have, and the one I try to be the closest to. She's my sister and my friend. We share a room, so we have to be. We fight a lot like sisters of the same age, even though I'm six years older, and then we don't. We share each other's secrets.

> (Bernstein, 1997, pp. 169-170)

Qualitative research with children in low-income families with different non-resident parents indicates that the distribution of financial resources between siblings can be complex. One girl with two full siblings but a different non-resident father to her youngest sibling, named both the father of her half-sibling and her mother's current partner - but notably, not her father - as the providers of resources to benefit all four siblings:

> My little sister who's three, she has a tablet – her dad bought it for her […] Her dad helps towards, like, some- like, shopping and stuff. Same as [Mum's partner]. [If I wanted to go shopping] I would ask Mum. And then, like, if [her partner is] there he'll give Mum some money and stuff and then Mum will give me some money. But not all the time. 11-year-old girl

> (Pople, unpublished research)

However, in another family in which the siblings have different non-resident parents, the provision of resources was not felt to be equitable.

> I'd ask my dad [for money] and my dad says: "I'm going to send it to you on Saturday" and then I wait until Saturday, he doesn't send it. That's what he's done to me lots of times...My sister's dad always sends her money and I sometimes feel a little bit embarrassed...There are so many trips that I've missed because...I haven't got money and stuff. 11-year-old girl

Research with children in low-income families also highlights the important role that grandparents and extended family members can play when family budgets are constrained, especially in lone-mother households (Mahony *et al.*, 2017; Ridge, 2002). Some children live with members of their extended family in addition to parents, and these relatives may - or may not - contribute valuable resources to the household.

Research aims and hypotheses

The main research aim of this chapter is:

- To investigate the relationship between different measures of family composition and children's SWB when controlling for children's socioeconomic circumstances

There are two subsidiary questions underlying this aim:

- To examine whether different compositions of families - specifically, different types and numbers of co-resident parents, siblings and extended family members - are related to differences in children's SWB
- To evaluate the extent to which socioeconomic circumstances account for associations between family composition and SWB

Furthermore, given evidence indicating that unobserved aspects of families (e.g. genes, family dysfunction) and children (e.g. personality, optimism) are likely to be related to their SWB and to their family and socioeconomic circumstances, the research methods used in the latter part of this chapter will seek to establish:

- Whether associations between children's family compositions and SWB remain once unobserved characteristics of the child and family environment are taken into account

Specific hypotheses to be tested are set out in the sections below. These are grouped by different aspects of family composition, specifically:

- the adults with whom children live

- the siblings with whom children live

- the contact and support received by non-resident extended family members

Family composition: co-resident adults

In relation to the permanence of children's family structures, and taking account of economic hardship theory, it is hypothesised that:

1. Children living with both biological parents will have higher SWB than those living in alternative structures (i.e. in a single-parent, step-parent or a non-biological-parent family). However, changes resulting in alternative family structures are expected to predict SWB more strongly than when those structures are stable. Furthermore, the association between a family structure change and SWB is expected to be strongest for children experiencing multiple changes or disruptive changes such as those involving a house move.

2. The relationship between family structure and SWB will be partly mediated by children's socioeconomic circumstances, and this will be most marked for children in single-parent families, whose lower SWB is expected to be explained in large part by their greater socioeconomic disadvantage.

Focusing on the particular circumstances of children in single-parent families, and in light of the additional adult hypothesis, it is hypothesised that:

3. Children living in a SPE compared to a SPA family will have higher SWB

Focusing on the particular circumstances of step-parent families, and in relation to the

formality of children's family structures and role ambiguity theory, it is hypothesised that:

4. Children living in formalised step-family structures will have higher SWB than

    children in informal structures

Family structure: co-resident siblings

Considering the support that children can get from having siblings of any type, alongside the

economic pressure that may arise from having a large number of siblings, it is hypothesised

that:

5. Children will have lower SWB if they are 'only children' or in large families (e.g.

    they have 3 or more siblings), compared to children with one or two siblings.

6. Children living with non-full siblings will have lower SWB if there are problems in

    parent-child relationships (to be explored in Chapter 5) otherwise there will be no

    differences in SWB according to sibling type

Extended family networks

In light of evidence of the benefits to children of support from extended family members,

especially those living in single-parent and socioeconomically disadvantaged households, it is

hypothesised that:

7. Children in households receiving financial or practical support from extended family

    will have higher SWB, and this support will be most beneficial for children in

    socioeconomically disadvantaged and single-parent households

However, for children in all family compositions:

8. The relationship between family composition and SWB will be mostly explained by the quality of children's family relationships (which, except for relationships with step-parents, will be explored in Chapter 5)

The conceptual framework shown below in Figure 17 summarises the processes and factors that are felt to be important in explaining the relationship between children's family circumstances and SWB, which is the focus of this chapter. In particular, three particular processes are central to the analysis in this chapter:

- The indirect path from family structure, complexity and change to SWB via socioeconomic circumstances.

- The *absence* of a direct path from family structure, complexity and change to SWB. It is hypothesised that once socioeconomic circumstances and family relationship quality are taken into account, there will be no relationship between family composition and children's SWB.

- The various paths from unobserved child and family factors to socioeconomic circumstances, family structure and complexity and children's SWB. Although the effect of factors such as family dysfunction on children's SWB is of interest and relevance to this chapter, these paths are unobserved. Thus, to understand the relationship between family composition, socioeconomic circumstances and children's SWB, it is important to control for these factors wherever possible.

Figure 17: Conceptual framework showing hypothesized relationships between family structure, complexity and change and children's SWB
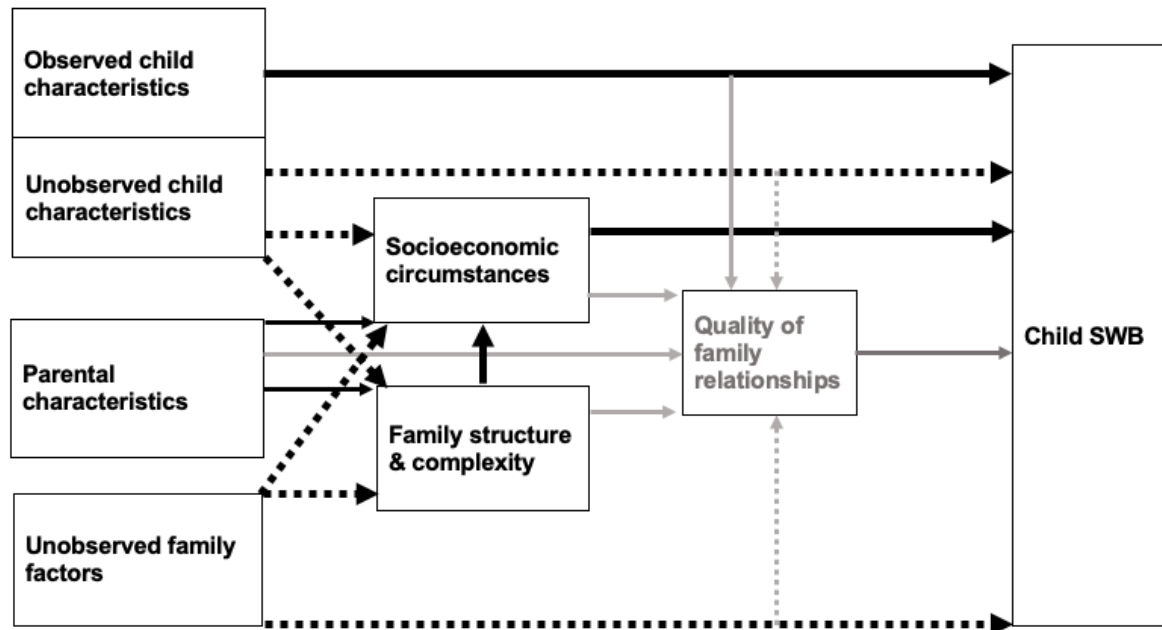
Data and methods

This analysis draws on data from the UKHLS, full details of which are given in Chapter 1. For the analysis in this chapter, data from children aged 10 to 15 participating in the youth questionnaire - including about their SWB - were matched with information from the adults with whom they live about a range of factors related to family circumstances and relationships. The repeated self-reported measures from children allow for the analysis of a large, pooled cross-sectional sample of children, as well as of changes over time experienced by children who have taken part in the survey in multiple waves. Another feature of the household design of the UKHLS that is exploited in this chapter is data collection from multiple siblings within the same household. This makes it possible to investigate 'between-sibling' differences in SWB and covariates as well as 'within-child' changes in SWB and covariates at different points in time. An additional advantage of comparing multiple siblings within the same family is that as older siblings 'grow out' of the age range for the youth survey, there may be younger siblings who 'grow in' to the age range. This allows for the

analysis of a longer time series of observations of siblings at different points in time, which may capture changes in the family's circumstances that are not captured when considering individual children separately of each other.

In order to illustrate two of the sources of within-family variation in family structure that are observable in the data – changes over time for the same child, and differences between siblings at the same point in time - Figure 18 shows three example families with different numbers of children participating in the youth survey. In the first example family, two siblings take part, and there are data for both siblings in wave 3. In the second family, there are three participating siblings, and in waves 8 and 10 there are data from a different sibling pair. In the third family, two siblings take part, but they do not participate in the same wave. Therefore, in this illustrative example, every child except child 1 participates in multiple waves of the survey and, therefore, changes in their circumstances or SWB can be observed. Furthermore, for all except children 6 and 7, there are observations at the same point in time of the child and his or her sibling (i.e. in waves 3, 8 and 10), therefore, differences between siblings can be analysed.

This hypothetical example also illustrates different family structures to show how children in the same family structure can be categorised differently. The first is an example of the 'standard family form' in which two children live with their two biological parents. The second is an example of a 'blended family' where there are two children from previous relationships and one mutual child. The two older children are step-siblings, but they are half-siblings to the younger child. The third example is a single-parent family with one adopted child and one biological child, who also live with their grandparents. Children 1, 2 and 5 would all be described as living in a two-biological parent family, while children 3 and 4 are

categorised as living in a formal step-parent family, child 6 is in a SPE family and child 7, who is adopted, is in a 'no biological-parent family'.

Figure 18: Example family structures for different siblings, longitudinal data

Family:
1   2   3

Single parent alone   Step-parent / two-bio   Single-parent / no bio parents
                           formal   extended

Child:
1   2   3   4   5   6   7

Relationship to parent(s):
bio   bio   step-mother step-father bio (both)   bio   adopted
mother mother   & bio father & bio mother   mother   mother

Relationship to sibling(s):
bio   bio   step/half step/half half   adoptive adoptive
sibling sibling   siblings   siblings   siblings   sibling sibling

Participation in UKHLS waves:

3   3 4 5   6 7 8   8   10 10 11   5 6 7 8 9 10

Analytic samples

There are three main analytical samples in this chapter:

1. The main analytical sample comprises all observations of children participating in the youth survey between waves 1 and 11 with complete information for SWB and the

211

covariates, for which there are 37,809 observations from 13,932 children in 8,693 families. However, for the analysis of changes in family composition over two consecutive waves, data from the first wave that a child is observed is excluded, thus, the analytical sample reduces to 24,201 observations from 9,772 children in 6,364 families.

2. The second analytical sample contains all observations of children participating in waves 3, 5, 7, 9 and 11 of the UKHLS with complete information for SWB, the covariates and whether their household receives practical or financial help from grandparents, for which there are 14,145 observations from 8,745 children in 5,632 families.

3. The third contains all observations of children participating in waves 5, 7 and 9 of the UKHLS with complete information for SWB, the covariates and the child-reported questions about pocket money /savings and their neighbourhoods, for which there are 9,061 observations from 6,337 children in 4,418 families.

Analysis of missingness for these three analytical samples indicates that, similar to Chapter 3, children were more likely to be missing from all three samples if they are of Pakistani, Bangladeshi or Black African ethnicity, and living in a SPE family. There were no differences in the SWB of children included or excluded from the main analytical sample. However, children missing from the grandparental help sample had slightly lower 4-domain SWB scores, while children missing from the sample containing the child-reported socioeconomic variables had a slightly *lower* likelihood of low overall SWB. Furthermore, in addition to the factors associated with missingness mentioned above, not being included in the grandparental help sample was also associated with lower parental education, being in a step- or single-parent family, all non-White ethnic groups, and older age of the child.

Table 46: Inclusion/exclusion from analytical sample and SWB

	Low overall SWB	4-domain score
Main analytical sample	NS	NS
Missing	13.5	19.5
Included	12.1	19.6
Grandparental help sample	NS	*
Missing	12.0	19.6
Included	12.5	19.7
Child-report sample	*	NS
Missing	11.9	19.6
Included	12.9	19.6

* p<0.05 ** p<0.01 *** p<0.001

Measures

Child SWB

Chapter 2 gives details of the six SWB measures that are asked of children in the UKHLS, including psychometric properties, descriptive statistics, and the conceptual reasons for focusing on two different measures of SWB:

1. binary measures of low SWB relating to how children feel about life as a whole, friends, family, appearance, school and schoolwork (i.e. those scoring 3 or below on a scale running from 0 to 6)
2. a four-domain measure of happiness with family, friends, school and appearance (on a scale running from 0 to 24)

Child and family characteristics

Similar to Chapter 3, multivariate analysis controls for the age, sex and ethnicity of the child as well as the wave of the survey and country of the UK of residence.

Socio-economic circumstances

Chapter 3 of this thesis considered a range of different measures of children's socioeconomic circumstances, including parental education, household income, parental employment, measures of household and child deprivation, housing tenure, a subjective measure of the household's financial situation, and child-reported measures of pocket money/savings and neighbourhood quality. Many of these measures are considered in the bivariate analysis presented in this chapter in order to explore the socioeconomic circumstances experienced by children in different family structures. However, most of this chapter focuses on a selection of these measures to capture key processes that are hypothesised to be important to children's relationship quality, and which Chapter 3 has shown are important predictors of children's SWB:

Adult-reported:

- Parental education

- Household income quintiles

- Subjective financial situation (for both mother and father)

- Housing tenure (specifically, whether the home is owned or rented)

Child-reported:

- Whether child has pocket money/savings

- Whether child likes neighbourhood

- Whether child feels safe after dark

- Whether child worries about crime

Although Chapter 3 indicated that once other socioeconomic variables are controlled, the relationship between parental education and SWB was weak or non-significant, it is retained as a covariate here since there is likely to be a relationship between parental education and family circumstances.

As Chapter 3 found that the relationship between household income and SWB is not linear, in this chapter income quintiles are used to capture the distinctive relationship between different parts of the income distribution and SWB. Chapter 3 also found that an equivalisation process that treats children and adults the same[18] identifies more children in low-income households with a high adult to child ratio, which has a slightly stronger relationship to overall SWB, thus this method is used here.

In recognition of the importance of the subjective - rather than objective - experience of economic disadvantage in the development of parental psychological distress and disrupted family relationships (Ponnet, 2014), this analysis considers parents' subjective evaluation of the financial situation of the household, specifically, whether the household is 'living comfortably', 'doing alright', 'just about getting by', 'finding it quite difficult' or 'finding it very difficult'. In some of the analysis, this variable is dichotomised into those who are 'finding it quite or very difficult' and those who are 'getting by, doing alright or living comfortably'.

The question about pocket money/savings asks children whether they save up to buy the things they want, save money and try not to spend it, spend money as soon as they get it or do

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[18] Like the OECD modified scale, a share of 1 is allocated to the first adult household member, and then 0.5 is allocated to each additional household member regardless of age.

not generally have pocket money. The first two categories indicate that the child has savings, while the latter two categories suggest that children do not have savings and/or pocket money. Furthermore, the three questions about children's perspectives on their neighbourhoods are considered in this chapter: whether children like their neighbourhood, whether they feel safe after dark and whether they worry about crime.

Family structure and complexity

This analysis builds on the standard categorisation of family structure, which is typically divided into four categories: 'intact' families with two biological parents, step-parent families, single-parent families, and other family types. However, as mentioned earlier, families may be able to draw on support from other adults within or outside of the household, and this may be particularly important for households with a single parent. For this reason, a distinction is made between single-parent families in which the parent is the sole adult in the household excluding adult children, and those where there are other adults in the household - relatives or otherwise - who may be a source of practical and emotional support. Excluding adult children from this calculation is not intended to imply that adult children cannot be a source of support, but reflects research highlighted earlier that indicates that, typically, the flow of assistance between parents and adult children is downwards (e.g. Furstenberg, 2020). In relation to step-parent families, a further distinction is made between families where step-parenthood is formalised - meaning that a second adult in the household is identified as a step- or adoptive-parent - and families in which the biological parent has a partner who is not identified as a step- or adoptive-parent. In light of the theoretical evidence set out earlier, the level of support received by children and the stability of the family structure is expected to be greater in formal compared to informal step-parent families.

In addition, given the research outlined above showing that children may benefit from support from grandparents and other members of the extended family that they do *not* live with, this analysis draws on questions asked in Waves 3, 5, 7, 9 and 11 of the UKHLS in which responding adults are asked whether they receive help - including financial help - from their parents (i.e. children's grandparents).

Box 1 below gives a description of how the six family structure categories created for this analysis have been derived.

Box 1: Family structure categories
In this analysis, the child is categorised as being in a:

Two-biological parent family if the child lives with both biological parents

Formal step-parent family if the child has one biological parent and one step-parent or adopted-parent

Informal step-parent family if the child's biological parent has a partner in the household

Single-parent alone (SPA) family if there is a single parent and no other adults in household

Single-parent extended (SPE) family if the single parent has other adults in household but none of these are parents of the child or the single-parent's partner (NB this will include single parents living with extended family members and single parents who have a boyfriend or girlfriend who they have not declared as a partner)

Other family type if the child has no biological parents in the household

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The proportion of child-wave observations in the different family structures for the main analytical sample considered in this chapter (described in Box 1) are as follows:

- 65.5% in a two biological-parent family
- 8.3% in a formal step-parent family
- 1.5% in an informal step-parent family
- 21.6% in a SPA family
- 1.4% in a SPE family
- 1.7% in a non-biological parent family

These are almost exactly the same as the figures set out in Table 6 of Chapter 1, which are comparable to ONS estimates for the proportions of children living in different family structures.

Methods

The results sections present descriptive statistics for children aged 10 to 15 in the main analytical sample to explore variation in children's characteristics, family structures, socioeconomic circumstances and SWB between children in different families, between siblings in the same family and within the same child over time. Sibship complexity is investigated through analysis of the number and kinds of siblings that children live with, while kinship ties are explored through analysis of co-resident extended family members as well as the amount and type of help families receive from children's grandparents. Bivariate analysis considers whether family and sibling composition relate to SWB and socioeconomic circumstances, while multivariate analysis assesses whether different aspects of children's family circumstances are related to SWB in pooled cross-sectional analysis once a series of controls are included. Finally, multi-level models are used to explore within- and between-family differences using data from multiple data waves of the survey and from different siblings. This allows for the consideration of measured aspects of children's lives - including those that change over time or vary between siblings - while accounting for unmeasured aspects of family environments that remain constant.

Results

Within- and between-family variation in family structure, socioeconomic circumstances and SWB

The descriptive analysis in this section builds on that presented at the end of Chapter 3 to explore between-sibling differences in addition to the within-child differences shown in

Chapter 3. Table 47 below shows the number of waves that individual children participated in the youth survey for Waves 1 to 11, as well as the number of observations of siblings at the same point in time. The first two columns relate to the number of waves of participation for each child in the main analytical sample. In relation to siblings, more than half of observations in a single wave (53.4%) were of one child in a family, while 39.2% of observations involved a sibling dyad, 6.7% involved a sibling triad, and 0.7% involved four, five or six siblings.

Table 47: Number of waves of youth survey participated in by 10 to 15-year-olds

No of waves or observations	Waves per child		Sibling observations in same wave (NB 1=no sibling observation)	
	Frequency	%	Frequency	%
1	4,010	10.6	20,170	53.4
2	5,683	15.0	14,837	39.2
3	6,731	17.8	2,526	6.7
4	7,468	19.8	225	0.6
5	7,866	20.8	45	0.1
6	5,828	15.4	6	0.0
7	223			
Total	37,809	100.0	37,809	100.0

Table 48 shows the number of observations for each family with at least one child participating in the youth survey. Just under one twentieth (4.9%) of the total observations related to families in which just one child took part in a single wave of the survey. For the remaining 95.1% of observations, there were either multiple observations of the same child, or multiple observations of siblings.

Table 48: Number of observations of each participating family, 10 to 15-year-olds

Number of observations	Frequency	%
1	1,866	4.9
2	2,872	7.6
3	2,884	7.6
4	3,606	9.5
5	3,511	9.3
6	3,587	9.5
7	2,815	7.5
8	2,701	7.1
9	2,756	7.3
10	2,691	7.1
11 to 15	6,473	17.1
16 or more	2047	5.4
Total	37,809	100.0

Given that the aim of this chapter is to draw on the longitudinal, household nature of the UKHLS to consider the extent to which differences in family and socioeconomic circumstances can explain variation in children's SWB, it is important to examine how much these different aspects of children's lives vary.

Table 49 quantifies the variation in children's SWB, individual characteristics, family structure and socioeconomic circumstances that is between children in different families, between observations of the same child at different timepoints (i.e. for children who participated in more than one wave of the youth survey) and between siblings at the same timepoint (i.e. for siblings who participated in the same wave of the youth survey). Factors that relate to the circumstances of the family, such as family structure and socioeconomic circumstances, are usually shared by siblings at the same point in time, although as noted, it is possible for family structure to be categorised in different ways for different siblings.

Table 49: Within and between family variation for SWB and socioeconomic variables

	Mean	Between-family differences (SD)	Within-family differences Between-sibling (SD)	Within-child (SD)
Children's SWB				
SWB 4 domains (0 to 24 scale) [a]	19.6	2.79	1.47	2.12
SWB life as a whole (0 to 6 scale) [a]	4.9	0.93	0.51	0.74
SWB family (0 to 6 scale) [a]	5.4	0.80	0.43	0.63
SWB friends (0 to 6 scale) [a]	5.3	0.76	0.46	0.68
SWB appearance (0 to 6 scale) [a]	4.3	1.14	0.63	0.87
SWB school (0 to 6 scale) [a]	4.6	1.14	0.63	0.93
SWB schoolwork (0 to 6 scale) [a]	4.5	1.00	0.57	0.79
Socioeconomic variables				
No pocket money / savings [a]	0.24	0.36	0.19	0.21
Do not like neighbourhood [a]	0.10	0.26	0.12	0.15
Feel unsafe after dark in area [a]	0.42	0.41	0.22	0.26
Worry about crime [a]	0.15	0.30	0.16	0.19
Income quintiles [b]	2.54	1.20	-	0.59
Struggling financially [b]	0.15	0.32	-	0.22
Home owned [b]	0.68	0.47	-	0.08
Family structure				
Two biological parents	0.66	0.48	0.05	0.09
Step-parent formal	0.09	0.28	0.05	0.08
Step-parent informal	0.02	0.12	0.01	0.06
Single-parent alone	0.20	0.41	0.01	0.12
Single-parent extended	0.02	0.13	0.02	0.05
No biological parents	0.02	0.15	0.03	0.03
Children's characteristics				
Age	12.52	1.32	0.91	1.25
Sex	0.50	0.44	0.24	-
Ethnicity				
White	0.76	0.44	0.06	-
Mixed	0.05	0.23	0.06	-
Indian	0.04	0.19	0.02	-
Pakistani	0.05	0.21	0.04	-
Bangladeshi	0.03	0.17	0.03	-
Black Caribbean	0.01	0.13	0.02	-
Black African	0.03	0.19	0.03	-
Other ethnicity	0.02	0.17	0.05	-

[a] Child-reported and therefore variable between siblings
[b] Adult-reported and therefore constant between siblings at the same timepoint

In terms of SWB, the largest amount of variation is between children in different families, followed by within-child changes and, lastly, between-sibling differences. This suggests that measured and unmeasured aspects of children's family environments make an important

contribution to their SWB. However, it is also clear that the SWB differences in pooled cross-sectional analysis that have been discussed so far relate to differences both within and between households. Table 49 shows that there is greater variation in SWB for the same children over time than there is between siblings. This may be due to age differences in SWB since age varies more within-child than between-siblings (there are more observations of the same child over time than there are of siblings), or it may reflect period effects as SWB is lower in later waves of the UKHLS.

There is a similar pattern for the child-reported variables about local neighbourhoods and pocket money or savings, with the biggest differences between children in different families. However, the variation within-child and between-siblings is similar in size, which indicates that within-family variation captures changes in children's perspectives and circumstances over time as well as differences in the way that siblings view their material circumstances, relating to observed and unobserved heterogeneity. As would be expected there is much greater variation in family structure between families than within, and the within-family variation mostly relates to children experiencing changes over time, rather than siblings being categorised differently from each other.

Since all of the socioeconomic variables except for the child-reported ones are measured at the household level, variation within families relates only to changes over time. As would be expected, there is considerably more variation between than within families, and this is particularly marked for home ownership.

Table 49 also shows the variation relating to children's age, sex and ethnicity. The mean age was 12.52, and there was a similar amount of variation within- and between-children,

reflecting the fact that there are approximately equal numbers of children in each age group and interviews take place annually. There was no variation in a child's sex over time as the handful of cases where there were differences from one wave to another were re-coded, as explained in Chapter 1. As would be expected, almost all of the variation in ethnicity is between children in different families, although there were some within-family differences relating to siblings who have different ethnicities from each other.

Table 50 presents similar information about within-family variation in family structure and socioeconomic circumstances in a different way by showing the proportions of within-family, within-child and between-sibling observations that are different from each other. It is worth highlighting that the within-child (at different timepoints) and between-sibling (at the same timepoint) proportions do not add up to the within-family figure since they relate to different sample sizes (which are shown in each column) and also because between-sibling differences at different timepoints are not shown. For the child-reported measures of material circumstances, there is considerable variation between siblings and for the same child over time, which highlights the benefit of multilevel models that can take account of these differences. Within-family variation is highest for children's feelings of safety after dark in their neighbourhoods: more than four in ten (42.2%) sibling assessments of feeling safe were different from each other, while more than a third (34.2%) of responses from the same child varied at different timepoints. There was also considerable variation for the measure of pocket money and savings: almost a third (32.7%) gave different assessments to their siblings as to whether they have pocket money or savings, while a fifth (20.0%) of children responded differently at different points in time. As the adult-reported socioeconomic variables are measured at the household level, there is no variation between siblings at the same point in time. However, Table 50 indicates that there is substantial 'churn' between different income

quintiles for the same children, with more than six in ten (61.1%) repeat observations of children indicating change in income quintile over time, and around a quarter experiencing a change in subjective financial difficulties (26.2%).

Table 50: Proportion of within-family observations of children where there is a change in circumstances

	% of within-family observations that are different (n=8,853)	% of within-child observations that change over time (n=8,589)	% of between-sibling observations that are different (n=4,158)
Child-reported socioeconomic			
No pocket money / savings [a]	40.3	20.0	32.7
Do not like neighbourhood [a]	20.5	11.3	12.4
Feel unsafe after dark in area [a]	57.5	34.2	42.2
Worry about crime [a]	34.1	19.2	22.0
	% of within-family observations that are different (n=35,943)	% of within-child observations that change over time (n=33,799)	% of between-sibling observations that are different (n=17,649)
Adult-reported socioeconomic			
Income quintiles [b]	69.2	61.1	-
Struggling financially [b]	31.3	26.2	-
Home owned [b]	5.2	3.8	-
Family structure			
Two biological parents	10.7	4.7	2.2
Step-parent formal	8.2	3.6	2.0
Step-parent informal	2.6	2.0	0.2
Single-parent alone	10.5	7.9	0.1
Single-parent extended	2.2	1.5	0.3
Non-biological parent	1.6	0.6	0.9
Any difference in family structure	16.9	9.9	2.9

[a] Child-reported, therefore, variable between siblings
[b] Adult-reported, therefore, constant between siblings at the same timepoint

Table 50 also shows the proportions of children in the analytical sample for whom there are between-sibling or within-child differences in family structure. Although affecting a minority of the sample, more than a sixth (16.9%) of observations of children in the same family are of different structures, with one in ten (9.9%) repeated observations of children featuring a change in family structure, and 2.9% of observed siblings having different family structures

from each other. However, given the small sample sizes of children in SPA (n=18) and informal step-parent families (n=37) who have a different structure to their siblings, in later sections of this chapter there is no attempt to distinguish within-child variation from between-sibling variation as the differences are unlikely to be meaningful.

Family structure: the number and identity of adults in the household

At the bivariate level, in line with expectations, children in single-parent, step-parent and, especially, non-biological parent families, had lower 4-domain SWB scores - and higher proportions of low SWB for every aspect of life - than children in two biological-parent families, as can be seen in Table 51. However, these differences were more pronounced for some aspects of SWB than others. Children in two-biological parent families were much less likely than other groups to have low satisfaction with family, and a little less likely to have low satisfaction with school and schoolwork. On the other hand, for appearance and friends, the differences by family structure were small, and children in two biological-parent families and SPE families were almost the same.

Table 51: Bivariate analysis of family structure and children's SWB

Family structure	% with low SWB						Mean 4-domain SWB score
	Life overall	Family	Friends	Appear-ance	School	School-work	
	***	***	***	***	***	***	***
Two biological parents	10.7	4.5	5.4	23.8	16.5	16.8	19.8
Step-parent formal	16.2	7.9	7.7	30.7	23.5	24.1	18.9
Step-parent informal	18.6	9.6	8.3	32.0	22.5	23.7	18.8
Single-parent alone	17.3	9.1	7.3	29.3	25.1	26.0	18.9
Single-parent extended	15.7	11.8	6.2	25.4	27.1	24.5	19.0
Non-biological parent	12.9	12.7	11.3	30.1	25.8	29.5	18.7

There was some support for the additional adult hypothesis in the comparison of low overall SWB amongst children in SPA families (17.3%) and SPE families (15.7%), which suggests that children in the latter group may benefit from having additional adults living with them. However, there were different patterns for different domains of SWB. Children in SPE families were more likely to have low satisfaction with family and school, but less likely to have low satisfaction with appearance, friends and schoolwork. Consequently, these differences cancelled each other out, and there were no differences in the 4-domain SWB scores of children. In line with expectations about the benefits to children of step-family structures that have greater clarity about step-parental responsibilities, Table 51 shows that children in formalised step-parent families were less likely to have low satisfaction with life as a whole (16.2%) and family (7.9%) than children in informal step-parent families (18.6% and 9.6% respectively), although there was little difference in the other domains and, therefore, no significant differences in 4-domain SWB scores.

However, these bivariate associations are likely to be confounded by factors such as ethnicity. Table 52 shows the divergent family structure profiles of different ethnic groups: whilst the vast majority (90.2%) of observations of Bangladeshi children relate to two-biological parent families and only a small minority (7.4%) relate to a SPA families, for Black Caribbean children, these proportions are the other way round (27.7% and 58.2% respectively). Since children in some ethnic groups – e.g. Black African, Pakistani, Bangladeshi etc - have significantly higher SWB than White children, it is important for multivariate analysis to control for ethnicity to take account of this confounding.

Table 52: Bivariate analysis of family structure and ethnicity

	Two biological parents	Step-parent formal	Step-parent informal	Single-parent alone	Single-parent extended	Non-biological parent
White	65.2	9.1	1.6	21.3	1.4	1.5
Mixed	55.3	5.1	2.7	32.0	1.5	3.3
Indian	86.4	2.5	0.0	9.8	1.0	0.2
Pakistani	84.9	1.2	0.7	11.4	1.3	0.7
Bangladeshi	90.2	0.4	0.3	7.4	1.4	0.3
Black Caribbean	27.7	7.9	0.6	58.2	1.9	3.8
Black African	56.7	1.5	0.5	34.7	2.9	3.7
Other ethnicity	66.2	3.1	0.8	18.3	1.5	10.2

Table 53 highlights the danger of making like-for-like comparisons of children's SWB by family structure without taking socioeconomic position into account. Two-biological parent families were more advantaged than alternative family structures on all of the measures of socioeconomic circumstances. Conversely, in line with research highlighting the especially disadvantaged position of single-parent families, Table 53 below shows that SPA families were almost twice as likely as two biological-parent families to be income poor (35.2% compared to 18.5%), five times as likely to be workless (30.7% compared to 5.8%), almost five times as likely to be receiving means-tested benefits (82.0% compared to 16.6%) and twice as likely to be finding it difficult financially (25.7% compared to 10.6%). SPA families were also more disadvantaged than SPE families across every socioeconomic measure except home ownership and neighbourhood deprivation, which supports the distinction between these two family structures. Step-parent and non-biological parent families were also less likely than SPA families be income poor, likely due to there being more adults in the household and therefore a lower likelihood of worklessness. A high proportion (30.0%) of non-biological parent families were not working, which is due in part to the adults in the household being more likely to be retired: 17.7% of non-biological parent families were retired compared to 1.8% of other families (not shown). The two types of step-families were broadly similar across the socioeconomic measures except for worklessness, which was more

common amongst formalised structures. Perhaps relatedly, mothers in formalised step-parent families were the youngest on average (mean age at birth of the child = 25.5, while mothers in non-biological parent families were the oldest on average (mean age at birth of the child = 35.1).

Table 53: Bivariate analysis of family structure and socioeconomic circumstances

	Income poverty	Parental degree	Workless	Most deprived Townsend quintiles
	%	%	%	%
Family structure				
Two biological parents	18.5	43.5	5.8	31.1
Step-parent formal	27.1	24.9	15.0	41.4
Step-parent informal	26.3	24.6	9.3	37.0
Single-parent alone	35.2	19.8	30.7	52.0
Single-parent extended	24.3	15.9	22.9	57.8
Non-biological parent	22.8	27.3	30.0	46.2
	Means-tested benefits	Home-owner	Finding it difficult	Maternal age at birth of child (mean)
	%	%	%	
Family structure				
Two biological parents	16.6	78.6	10.6	30.7
Step-parent formal	36.3	45.8	13.0	25.5
Step-parent informal	36.2	45.5	11.4	27.3
Single-parent alone	82.0	36.6	25.7	28.8
Single-parent extended	58.4	38.1	18.2	28.1
Non-biological parent	37.1	60.4	10.4	35.1

The UKHLS also provides evidence of children in alternative family structures having direct as well as indirect experiences of deprivation. Table 54 shows how children's responses to a question about spending and saving relate to the family structure in which they live. Children in two biological-parent families were less likely than children in other family types to spend money as soon as they get it or lack pocket money. It is notable that whilst similar proportions of children in step-parent, single-parent and non-biological parent families said that they spend money as soon as they get it, it was children in step-parent families that were most likely to say that they do not usually receive pocket money, and children in SPE

families that were least likely to say this (5.7%). This suggests that having extended family members (but not step-parents) in the household may protect children from deprivation. This will be explored in the multivariate analysis. In relation to the neighbourhood variables, liking neighbourhood was related to family structure, but feelings of safety and worry about crime were not. Children in SPA families were twice as likely (15.2%) as children in two biological-parent families (7.5%) - and significantly more likely than children in SPE families (9.0%) - to dislike their neighbourhoods, which is interesting as SPE families were more likely to live in the most deprived areas based on their Townsend scores.

Table 54: Bivariate analysis of family structure and child-reported spending /saving

Family structure	Save up to buy things want %	Save money and try not to spend it %	Spend money as soon as get it %	Do not usually get pocket money %	No savings / pocket money %
Two biological parents	42.6	36.1	13.1	8.2	21.3
Step-parent formal	34.8	33.0	20.1	12.3	32.4
Step-parent informal	39.8	30.6	15.4	14.2	29.5
Single-parent alone	37.3	34.5	19.3	8.9	28.2
Single-parent extended	46.1	27.1	21.2	5.7	26.9
Non-biological parent	41.4	27.9	24.2	6.4	30.7

	Do not like neighbourhood	Feel unsafe after dark in area	Worry about crime
Two biological parents	7.5	41.1	14.5
Step-parent formal	10.7	41.7	13.9
Step-parent informal	9.9	44.9	14.0
Single-parent alone	15.2	43.4	16.0
Single-parent extended	9.0	27.9	13.5
Non-biological parent	10.1	45.4	20.4

One possibility for the higher proportion of children living in step-parent families not receiving pocket money, as shown in Table 54, is that there is inequitable distribution of resources amongst children in step-parent families, as suggested by Coleman (2000) and Pople (2021). Another possible explanation is that children in step-families have more siblings than children in other family types. Table 55 shows the number of siblings (of any type) that children live with in each family structure, while the last column gives the

proportion that live with non-full (half, step, adoptive or foster) siblings. Unsurprisingly, a large proportion of children in step-parent families - especially formalised ones (54.3%) - live with non-full siblings, and this is driven by larger proportions of half- and step-siblings in these families (not shown). Furthermore, children in formalised step-parent families were more likely than children in other family structures to have three or more siblings: almost twice as many (21.7%) children in this family structure lived with three or more siblings, compared to children in single-parent (13.1%) and two-biological parent families (13.9%). Children in non-biological parent families - which include children who live in kinship care or have been adopted or fostered and thus have adopted or foster-siblings – were also more likely to live with non-full siblings, but these families were the least likely to have a large number of siblings.

Table 55: Bivariate analysis of family structure and number of siblings

Family structure	0 %	1 %	2 %	3+ %	Any non-full siblings %
Two biological parents	10.3	48.8	27.1	13.9	4.7
Step-parent formal	12.5	36.3	29.5	21.7	54.3
Step-parent informal	19.0	40.5	22.0	18.6	35.4
Single-parent alone	25.2	41.3	20.4	13.1	12.9
Single-parent extended	31.6	42.6	17.4	8.4	19.0
Non-biological parent	38.0	41.7	18.1	2.2	30.5

The next step in the analysis involves a series of regressions to explore the relationship between family structure, socioeconomic circumstances and SWB after controlling for the child's age, sex and ethnicity, the wave of the survey and country of the UK. As expected, children in step-parent, single-parent and non-biological parent families had higher odds of low SWB than children in two biological-parent families once these controls were included. As shown in Table 56, the odds ratios reduced in size a little once the socioeconomic variables were added individually into the model, indicating that children in alternative family structures to a two biological-parent family experience greater socioeconomic

disadvantage. However, most remained significant. The estimate of the effect of living in a SPA family was smallest after controlling for receipt of means-tested benefits, which may be due to this measure capturing a combination of low income and a stigmatising effect of receiving benefits. As hypothesised, the association between living in a SPE family and low SWB lost significance after controlling for some of the socioeconomic variables, suggesting that it is socioeconomic circumstances - rather than the family structure *per se* - that explains the lower SWB of children in these households. The estimate of the association between living in either type of step-parent family and low SWB was smallest after controlling for home ownership indicating that children's lower SWB in these families may be partly due to a greater likelihood of living in rented accommodation and associated factors. There was also support for the benefit to children of a formalised step-parent structure as children in these families had a lower likelihood of low SWB than those in informal step-families. However, an adjusted Wald test of the difference between the SPA and SPE estimates and between the informal and formal step-family estimates indicates that in neither case are these significantly different from each other.

In the final model, which included all of the socioeconomic variables, the coefficients for all of the alternative family structures reduced in comparison to the model with no socioeconomic variables, and the SPE coefficient was no longer significant. However, parental qualifications and receipt of benefits were not significant in the final model, and unexpectedly, being in the second lowest (but not the lowest) quintile compared to the highest was associated with higher odds of low SWB.

Table 56: Family structure, socioeconomic circumstances and children's low SWB

Variable	Odds ratios, low SWB[a]							
Family structure (two biological-parent family)								
Step-parent formal	1.68***	1.57***	1.61***	1.56***	1.39***	1.66***	1.63***	1.36**
Step-parent informal	1.88***	1.79**	1.84***	1.75**	1.58*	1.86***	1.81**	1.59*
SPA	1.82***	1.62***	1.63***	1.43***	1.47***	1.70***	1.74***	1.28**
SPE	1.61**	1.52*	1.49*	1.38	1.30	1.58**	1.53*	1.23
Non-biological parent	2.41***	2.34***	2.16***	2.23***	2.22***	2.42***	2.33***	2.08***
Income quintiles (highest)								
1st quintile		1.64***						1.21
2nd quintile		1.56***						1.32*
3rd quintile		1.32**						1.22
4th quintile		1.14						1.11
Workless household			1.53***					1.23*
Means-tested benefits				1.43***				1.10
Home owned					0.60***			0.69***
Finding it difficult (subj)						1.49***		1.30***
Parental degree							0.83**	1.00
Unweighted N	37420	37420	37420	37420	37420	37420	37420	37420
F	9.60	9.75	10.07	10.81	11.16	9.93	9.96	9.83
	(35, 2705)	(32, 2705)	(32, 2705)	(32, 2705)	(32, 2705)	(32, 2705)	(32, 2705)	(40, 2705)

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)

There were no interactions between family structure and age or sex, as some research into parental separation has indicated might be the case (Hetherington and Jodl, 1994), but some interesting interactions between family structure and socioeconomic circumstances in their associations with low SWB, as can be seen in Figure 19. Contrary to expectations that living in a non-intact family would be more difficult for children if experienced alongside disadvantaged circumstances, the interaction effects suggest that the opposite may sometimes be true. With respect to parental education, children in two biological-parent families had a lower likelihood of low overall SWB if parents had a degree, as would be expected. However, children in formal step-parent families had a *higher* likelihood of low SWB if parents had a degree. There was a similar picture for some of the other socioeconomic measures but these were only marginally significant and, are thus, not shown in Figure 19.

One explanation for these counterintuitive findings may be found in the social comparisons that children make. As demonstrated in Tables 53 and 54, children in two biological-parent families tend to be in more advantaged socioeconomic circumstances than children in alternative family structures. If children compare themselves to others in similar circumstances, an alternative family structure may be more difficult for advantaged children because fewer of their peers are like them.

Figure 19: Low SWB and parental education by family structure
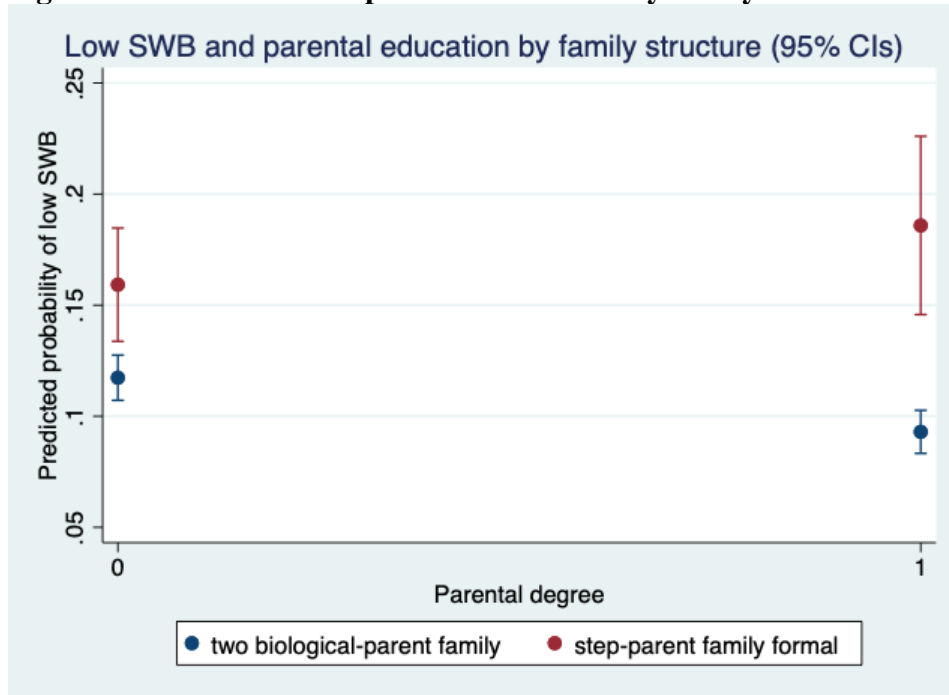
As can be seen in Table 57, which focuses on children's 4-domain SWB scores, children in all alternative family structures to two biological-parent families had lower SWB. Only income (being in the second lowest quintile), home ownership and subjective financial difficulties were associated with SWB. The coefficients for living in a step- or single-parent family reduced most markedly when home ownership was included. In the final model, which included all of the socioeconomic variables, the coefficients for step- and single-parent families reduced in comparison to the model with no socioeconomic controls, and the coefficient for SPE families almost lost significance, which provides additional support for the hypothesis that part of the lower SWB of children in lone-parent families is due to their greater economic disadvantage. However, the R^2 values remained the same across all models, indicating that the socioeconomic variables contributed very little. In support of the hypothesis that clear step-parental responsibilities are beneficial, children in formalised step-families had higher SWB scores than children in informal step-families. Nonetheless, again, adjusted Wald tests indicated that the differences between the SPA and SPE estimates, and the informal and formal step-family estimates, are not statistically significant.

Table 57: Family structure, socioeconomic circumstances and children's 4-domain SWB, 10 to 15-year-olds

Variable	Regression coefficients, 4-domain SWB[a]							
Family structure (two biological-parent family)								
Step-parent formal	-0.81***	-0.78***	-0.79***	-0.77***	-0.68***	-0.79***	-0.79***	-0.68***
Step-parent informal	-0.89**	-0.88**	-0.88**	-0.86**	-0.78*	-0.88**	-0.87**	-0.79*
SPA	-0.86***	-0.80***	-0.83***	-0.75***	-0.72***	-0.80***	-0.83***	-0.66***
SPE	-0.75**	-0.71*	-0.72*	-0.67*	-0.61*	-0.72*	-0.71*	-0.58*
Non-bio parent	-1.09***	-1.08***	-1.05***	-1.05***	-1.03***	-1.09***	-1.06***	-1.04***
Income quintiles (highest)								
1st quintile		-0.11						0.10
2nd quintile		-0.32**						-0.19
3rd quintile		-0.13						-0.06
4th quintile		0.01						0.04
Workless household			-0.14					-0.03
Means-tested benefits				-0.17				-0.00
Home owned					0.33***			0.28*
Finding it difficult (subj)						-0.43***		-0.38***
Parental degree							0.12	0.03
_cons	21.37***	21.48***	21.38***	21.39***	21.10***	21.43***	21.32***	21.23***
Unweighted N	37420	37420	37420	37420	37420	37420	37420	37420
F	51.06 (35, 2705)	46.65 (32, 2705)	49.67 (32, 2705)	49.49 (32, 2705)	49.80 (32, 2705)	49.75 (32, 2705)	49.39 (32, 2705)	41.87 (40, 2705)
R^2	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)

As expected, Tables 56 and 57 show that socioeconomic variables go some way to explaining the differences in SWB of children in different family structures, especially for children in SPE families whose SWB was no different from children in two biological-parent families when some socioeconomic circumstances were taken into account. However, children in step-parent and SPA families had higher odds of low SWB and lower 4-domain SWB scores even after controlling for a range of socioeconomic variables. Higher levels of SWB amongst children in formal compared to informal step-families - and amongst children in SPE compared to SPA families - offers evidence in support of role ambiguity theory and the additional adult hypothesis. However, adjusted Wald tests indicate that these differences were not statistically different from each other, which may be due to sample sizes for the SPE (n=558) and informal step-parent families (n=574) being relatively small.

As income quintiles, housing tenure and subjective financial difficulties were the aspects of children's socioeconomic circumstances that were most consistently associated with low overall SWB and 4-domain scores, the rest of this chapter includes just these three measures as socioeconomic controls. The correlations between these variables were moderate in size, ranging from -0.21 (for income quintiles and the measure of subjective financial difficulties) to 0.36 (for income quintiles and home ownership), and similar to those shown in Table 38 in Chapter 3 (the differences being that the analytical sample in this chapter is slightly different).

Stability and change in family structure

Thus far, analysis of differences in children's family types has mostly been focused on a single point in time. The chapter now moves on to consider how often children experience changes to their family structures, and whether different types or numbers of changes are

associated with SWB. Table 58 shows the proportion of families in different structures in every wave, at least one wave, or none of the waves observed, while Table 59 shows the transition probabilities for different family structures, and the proportion of children who remained in – or moved into – a particular family structure from one wave to the next. As the numbers of children experiencing different changes are small, these figures are likely to be sample-specific and relate to the family circumstances of 10 to 15-year-olds who participated in the youth survey in at least one wave for whom SWB was simultaneously observed. As such they are not a comprehensive account of the family structure changes that these families experienced, and the purpose of presenting them here is to identify the changes in family structure that occurred during the time periods in which children's SWB was also observed.

Table 58: Proportion of children always, sometimes or never in different family structures

	Always (i.e. in every wave observed) %	Sometimes (i.e. in at least one wave observed) %	Never (i.e. in no waves observed) %
Two biological parents	63.8	4.2	31.9
Step-parent formal	7.0	3.2	89.9
Step-parent informal	0.9	1.8	97.4
Single-parent alone (SPA)	16.8	7.1	76.1
Single-parent extended (SPE)	1.0	1.4	97.6
Non-biological parent	1.8	0.5	97.7

As can be seen in Table 58, there were high levels of stability of children's family structures for children observed in more than one wave, with most 'always' or 'never' in each structure. As expected, the most common family structure was a two biological-parent family, which more than two-thirds (68.1%) of children experienced always or sometimes. The next most common structure was living with a SPA, which was the case for almost a quarter (23.9%) of children always or sometimes, while 11.1% of children were in a formal step-parent family always or sometimes. An approximately similar and small proportion of children were in an

informal step-family (2.6%), a SPE family (2.4%), or a non-biological parent family (2.3%) always or sometimes.

Table 59: Transition probabilities for children in different family structures

	Two biological parents	Step-parent formal	Step-parent informal	Single parent alone	Single parent extended	Other
Family structure						
Two biological parents	98.1	0.2	0.0	1.5	0.1	0.1
Step-parent formal	1.6	93.6	0.5	3.4	0.5	0.4
Step-parent informal	0.0	11.0	80.9	7.0	0.6	0.6
Single parent alone	1.2	2.5	2.0	93.2	1.0	0.2
Single parent extended	1.5	3.0	0.9	17.9	75.1	1.5
Non-biological-parent	2.1	2.8	0.3	1.8	0.8	92.3

Table 59 also shows considerable stability for children in consecutive waves, ranging from 98.1% of children in a two biological-parent family who were in the same structure in the following wave to 75.1% of children in a SPE family who remained in this family structure in the following wave. The most common transition was a move from a SPE family to a SPA family, or from an informal to a formal step-parent family, which related to 17.9% and 11.0% of children in these structures respectively.

Table 60 shows that, in comparison to the majority of children (i.e. those that stayed in a two-biological parent family from one wave to the next), children staying in a formalised step-parent, SPA or non-biological parent family had higher odds of low SWB and lower 4-domain SWB scores, even after controlling for socioeconomic circumstances. The change associated with the greatest difference in SWB was from a SPA to a step-parent informal family. Although affecting just 0.33% of children (unweighted N = 109), this change was associated with a 103% increase in odds of low SWB and a drop of 1.23 points on the 4-domain scale after controlling for socioeconomic circumstances. Moving from a two-biological parent family to a SPA family - the most common change, but affecting just 1.1% of the sample (unweighted N = 316) - was also associated with a 60% increase in odds of low

SWB and a reduction of 1.19 points in 4-domain SWB after controlling for socioeconomic variables. Notably, children in these two groups had higher odds of low SWB and lower 4-domain SWB scores than those who remained in a single-parent family (of either type) from one wave to the next. Moving from a two-biological parent family to a SPE family was also associated with a reduction of 2.66 points in 4-domain SWB after controlling for socioeconomic variables, however, this related to just 0.14% of the sample (unweighted N = 19). Consequently, this finding, and the other changes associated with higher or lower 4-domain SWB scores, which all related to less than 0.1% of the sample, are likely to be sample-specific and should be interpreted cautiously. However, as a whole, despite affecting a small number of children, these findings suggest that changes in circumstances are just as important for children's SWB - if not more important - than particular family structures.

Table 60: Type of family structure change and children's SWB

Type of change in family structure	%	Family structure [a]	Family structure [a] + socio-economic [b]	Family structure [a]	Family structure [a] + socio-economic [b]
			Odds ratios, low SWB	Regression coefficients, 4-domain SWB	
Stayed in two-biological parent family (ref)	65.7				
Stayed in SPA	19.8	1.78***	1.32**	-0.92***	-0.69***
Stayed in step-parent formal	7.3	1.58***	1.30*	-0.74***	-0.61***
Stayed in non-biological parent	1.4	2.67***	2.53***	-1.23***	-1.17***
Stayed in SPE	1.1	1.67*	1.29	-0.73	-0.51
Stayed in step-parent informal	1.2	2.57***	2.36***	-1.02*	-0.93*
Two-biological to step-parent formal	0.2	0.79	0.56	-1.01	-0.75
Two-biological to step-parent informal	<0.1			1.05	1.17
Two-biological to SPA	1.1	1.72**	1.49	-1.41***	-1.33***
Two-biological to SPE	0.1	3.84	3.03	-3.22***	-3.00**
Two-biological to non-biological parent	0.1	0.12***	0.13***	1.72**	1.69***
Step-parent formal to two-biological parent	0.1	1.93	1.61	-1.35	-1.23
Step-parent formal to step-parent informal	<0.1	1.62	1.94	-0.12	-0.26
Step-parent formal to SPA	0.3	1.78	1.31	-0.07	0.10
Step-parent formal to SPE	<0.1	0.27	0.22	-0.72	-0.57
Step-parent formal to non-biological parent	<0.1	0.69	0.61	1.53*	1.63*
Step-parent informal to two-biological	<0.1				
Step-parent informal to step-parent formal	0.1	2.02	1.75	-0.98	-0.87
Step-parent informal to SPA	0.1	2.52*	1.88	-2.12*	-1.90
Step-parent informal to SPE	<0.1			-1.65	-1.48
Step-parent informal to non-biological parent	<0.1			3.29***	2.96***

Type of change in family structure	%	Family structure [a]	Family structure [a] + socio-economic [b]	Family structure [a]	Family structure [a] + socio-economic [b]
		Odds ratios, low SWB		Regression coefficients, 4-domain SWB	
SPA to two biological-parent	0.2	0.85	0.72	0.15	0.25
SPA to step-parent formal	0.4	1.61	1.23	-1.34*	-1.14*
SPA to step-parent informal	0.3	2.44**	1.95*	-1.49**	-1.30*
SPA to SPE	0.2	2.18	1.78	-1.73*	-1.58
SPA to non-biological parent	<0.1	4.10	3.45	-4.74	-4.58
SPE to two biological-parent	<0.1			-0.21	0.21
SPE to step-parent formal	<0.1	0.89	0.86	-0.56	-0.44
SPE to step-parent informal	<0.1	11.55	7.70	-0.79	-0.54
SPE to SPA	0.3	1.70	1.29	-0.04	0.16
SPE to non-biological parent	<0.1	2.32	1.62	0.74***	0.87***
Non-biological to two biological-parent	<0.1	0.43	0.45	1.47**	1.48**
Non-biological to step-parent formal	<0.1	0.80	0.90	1.45	1.34
Non-biological to step-parent informal	<0.1			-8.57***	-8.25***
Non-biological to SPA	<0.1	12.88***	10.99***	-4.70*	-4.48*
Non-biological to SPE	<0.1	0.65	0.47	0.00	0.18
_cons				21.98***	21.83***
N		24172	24172	24172	24172
F		5.59*** (54, 2005)	5.87*** (60, 2005)	(59, 2005)	(65, 2005)

* p<0.05 ** p<0.01 *** p<0.001

[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)

[b] Model also includes income quintiles, finding it difficult financially, and whether home is owned (coefficients not shown)

As highlighted in Table 60, there were comparatively few children participating in more than one wave who have experienced a change in family structure. Nonetheless, different types of family structure change can be combined to examine whether children's SWB varies according to the number of changes experienced. As can be seen in Table 61, any change and the number of changes in family structure were associated with higher odds of low SWB, higher odds of dissatisfaction with family relationships and lower 4-domain SWB scores before socioeconomic controls were added. Once measures of income, subjective financial difficulties and home ownership were included in the regressions, however, these estimates were attenuated, indicating that some of the association between family structure change and SWB may relate to changes in children's socioeconomic circumstances. Furthermore, once current family structure was also included in the models, there was no association between family structure change and the three measures of SWB. Thus, contrary to expectations, this analysis suggests that current family structure is more important for SWB than a change in structure.

Table 61: Family structure changes and children's SWB

	Family structure change [a]	Family structure change [a] + socio-economic [b]	Family structure change [a] + socio-economic [b] + family structure [c]	Family structure change [a]	Family structure change [a] + socio-economic [b]	Family structure change [a] + socio-economic [b] + family structure [c]
Odds ratios, low overall SWB						
Any change in family structure	1.40**	1.22	1.05			
Number of changes in family structure				1.30**	1.15	1.02
N	24188	24188	24188	24188	24188	24188
F	6.66***	8.28***	7.74***	6.86***	8.41***	7.79***
	(26, 2005)	(32, 2005)	(37, 2005)	(26, 2005)	(32, 2005)	(37, 2005)
Odds ratios, low family SWB						
Any change in family structure	1.82***	1.69***	1.26			
Number of changes in family structure				1.44***	1.34**	1.06
N	24188	24188	24188	24188	24188	24188
F	6.96***	7.59***	7.35***	6.98***	7.54***	7.35***
	(26, 2005)	(32, 2005)	(37, 2005)	(26, 2005)	(32, 2005)	(37, 2005)
Regression coefficients, 4-domain SWB						
Any change in family structure	-0.75***	-0.61***	-0.25			
Number of changes in family structure				-0.57***	-0.45**	-0.16
_cons	21.64***	21.56***	21.84***	21.61***	21.54***	21.83***
N	24188	24188	24188	24188	24188	24188
F	30.36	27.83	25.95	30.62***	27.97***	26.02***
	(26, 2005)	(32, 2005)	(37, 2005)	(26, 2005)	(32, 2005)	(37, 2005)

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)

[b] Model also includes income quintiles, finding it difficult financially, and whether home is owned (coefficients not shown)

[c] Model also includes current family structure (coefficients not shown)

However, the measures of change used in Table 61 are crude in that they do not differentiate between different types of change. For example, a change from a two-biological parent family to a SPA family or formal step-parent family (e.g. if the child's biological parents have separated) would be categorised in the same way as a change from a SPA family to a two-biological parent family (e.g. if a non-resident parent moves back into the family home) or to a SPE family (e.g. if a grandparent or extended family member moves in) even if some of these changes are perceived by the child to be negative while others are perceived to be positive. Another way of considering changes in children's family structures is to explore whether a parent (biological or adoptive) leaving the main home in which a child lives – or the arrival of a new step-parent – is related to children's SWB. This is closer to the type of change that would be expected to influence SWB. The numbers of children in the UKHLS sample who are observed in the same wave that a parent leaves the household (unweighted N = 316) or when a new stepparent joins the household (unweighted N = 266) are small. Nonetheless, the departure of a parent was associated with lower 4-domain SWB and higher odds of dissatisfaction with family relationships after controlling for children's socioeconomic circumstances and – in the case of low family SWB – current family structure. Children were 74% more likely to be dissatisfied with their family relationships if their biological or adoptive parent had left the household. Children experiencing the arrival of a new step-parent had lower 4-domain SWB scores and higher odds of dissatisfaction with family relationships, however, these findings were not statistically significant.

Table 62: Parental changes and children's SWB

	Parental change [a]	Parental change [a] + socio-economic [b]	Parental change [a] + socio-economic [b] + family structure [c]	Parental change [a]	Parental change [a] + socio-economic [b]	Parental change [a] + socio-economic [b] + family structure [c]
Odds ratios, low overall SWB						
Parent leaves household	1.23	1.08	0.93			
New parent joins household				1.21	0.95	0.87
N	24188	24188	24188	24188	24188	24188
F	6.25***	8.11***	7.71***	6.25***	8.06***	7.71***
	(26, 2005)	(32, 2005)	(37, 2005)	(26, 2005)	(32, 2005)	(37, 2005)
Odds ratios, low family SWB						
Parent leaves household	2.56***	2.42***	1.74**			
New parent joins household				1.37	1.17	1.09
N	24188	24188	24188	24188	24188	24188
F	6.80***	7.44***	7.37***	6.22***	7.03***	7.24***
	(26, 2005)	(32, 2005)	(37, 2005)	(26, 2005)	(32, 2005)	(37, 2005)
Regression coefficients, 4-domain SWB						
Parent leaves household	-0.86**	-0.75**	-0.35			
New parent joins household				-0.92	-0.67	-0.40
_cons	21.63***	21.54***	21.84***	21.62***	21.55***	21.85***
N	24188	24188	24188	24188	24188	24188
F	29.34***	27.42***	25.78***	29.67***	27.54***	25.74***
	(26, 2005)	(32, 2005)	(37, 2005)	(26, 2005)	(32, 2005)	(37, 2005)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)

[b] Model also includes income quintiles, finding it difficult financially, and whether home is owned (coefficients not shown)

[c] Model also includes current family structure (coefficients not shown)

Changes in family structure can also have knock-on effects for other aspects of children's lives such as where they live and go to school, and by extension, whether and how often children see close family and friends. The UKHLS does not ask specific questions of children on this topic but it is possible to establish whether children have moved house from one wave to the next, and the reasons for the house move (according to the adults with whom children live). One of the explanations for a house move is 'family reasons', which includes moving in with or splitting up from a partner and moving in with or away from family. All of these explanations for a house move could relate to a change in family structure. Indeed, over two-thirds (70.8%) of informal step-parent families that moved house for family reasons gave 'moving in with a partner' as an explanation, while 60.5% of SPA families and 41.7% of SPE families gave 'splitting up with a partner' as an explanation, and 23.3% of SPE families gave 'moving back in with family' as an explanation. These explanations fit with expectations of the types of house moves that different family structures would make, and give confidence in the categorisations.

Table 64 replicates the analysis taken in Tables 61 and 62 to show children's SWB according to whether they moved house since the previous wave and, more specifically, if they moved house for family reasons. Naturally, house moves can be prompted by a wide range of factors including those that may be viewed positively by the child - such as a move to larger or more permanent housing - and others that may be viewed negatively - such as a move brought about by parental separation or a deterioration in socioeconomic circumstances (Mahony *et al.*, 2017; Mahony, 2020). The UKHLS measure of moving house does not distinguish between positive and negative motivations. However, the measure of moving house for family reasons, which is set out in Table 63, gives some indication of the types of reasons

prompting the move and confirm that these relate to the types of moves that are brought

about by a family structure change.

Table 63: Explanations given for house moves for family reasons by family structure

Moved house for family reasons	Two biological parents %	Step-parent formal %	Step-parent informal %	Single parent alone %	Single parent extended %	No biological parents%
Married / moved in with partner	6.2	30.5	70.8			
Split up from partner	1.3	15.5	10.9	60.5	41.7	31.3
Moved in with family	3.7	0.9		1.2	23.3	
Moved away from family	0.6	12.1		3.0		
Moved to be closer to family / friends	14.7	20.1		11.8		31.0
Moved with partner due to their relocation	4.7	2.0				
Other (family) reasons	68.7	18.9	18.3	23.6	35.0	37.7

Unweighted N=415

Table 64 demonstrates that there was a pattern of house moves – including those motivated

by family reasons – being associated with lower SWB. This fits with qualitative research that

highlights the difficulties for children of disruptive changes to their living arrangements over

which they have little control (Mahony, 2020). However, these differences mostly

disappeared once children's socioeconomic circumstances and current family structures were

taken into account, with one exception: children had lower 4-domain SWB scores if they had

moved house (for any reason).

Table 64: House moves and children's SWB

	House move [a]	House move [a] + socio-economic [b]	House move [a] + socio-economic [b] + family structure [c]	House move [a]	House move [a] + socio-economic [b]	House move [a] + socio-economic [b] + family structure [c]
Odds ratios, low overall SWB						
Moved house	1.32**	1.15	1.13			
Moved house for family reasons				1.29	1.16	1.07
N	33261	33261	33261	33261	33261	33261
F	7.54***	9.48***	9.35***	7.44***	9.50***	9.34***
	(26, 2406)	(32, 2406)	(37, 2406)	(26, 2406)	(32, 2406)	(37, 2406)
Odds ratios, low family SWB						
Moved house	1.37*	1.26	1.21			
Moved house for family reasons				1.77**	1.67*	1.43
N	33261	33261	33261	33261	33261	33261
F	9.83***	9.68***	10.06***	9.46***	9.55***	9.86***
	(26, 2406)	(32, 2406)	(37, 2406)	(26, 2406)	(32, 2406)	(37, 2406)
Regression coefficients, 4-domain SWB						
Moved house	-0.42***	-0.29*	-0.24*			
Moved house for family reasons				-0.44*	-0.33	-0.14
_cons	21.02***	20.91***	21.19***	20.99***	20.88***	21.16***
N	33261	33261	33261	33261	33261	33261
F	48.39***	42.49***	40.37***	48.13***	42.57***	40.41***
	(26, 2406)	(32, 2406)	(37, 2406)	(26, 2406)	(32, 2406)	(37, 2406)

* p<0.05 ** p<0.01 *** p<0.001

[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)

[b] Model also includes income quintiles, finding it difficult financially, and whether home is owned (coefficients not shown)

[c] Model also includes current family structure (coefficients not shown)

Siblings

At this point the focus shifts from the adults with whom children live to their siblings. As indicated in the introduction to this chapter, siblings can be sources of support for children in much the same way that parents and extended family members can be. However, there is much less research on siblings in comparison to adult members of children's families, and even less that considers whether and how living with non-full siblings is different to living with only biological siblings. Bivariate analysis of the number of any siblings and non-full siblings that children live with gives a first indication of different compositions of sibling numbers and types being linked to children's SWB. Table 65 below shows that children with one sibling of any kind are the least likely to have low SWB, followed by children with two siblings. Children with no siblings (i.e. 'only children') had the lowest 4-domain scores and a higher likelihood of low SWB. Paradoxically, children with three or more siblings had the highest likelihood of low SWB but also the highest 4-domain scores, which seems to be explained by their comparatively high levels of satisfaction with appearance and friends (not shown).

Table 65: Univariate and bivariate analysis of number of siblings and children's SWB

	% of sample	% with low SWB	Mean 4-domain SWB score
Number of siblings of any kind		**	***
0 (i.e. only child)	14.1	14.7	19.1
1	45.9	11.9	19.5
2	25.7	13.6	19.4
3+	14.4	15.1	19.6
Number of non-full (i.e. step, half, adopted or foster) siblings		***	***
0	87.0	12.1	19.6
1	8.7	14.9	19.2
2+	4.4	21.3	19.0

* p<0.05 ** p<0.01 *** p<0.001

Table 65 also shows similar analysis for 'full' (i.e. biological) siblings and 'non-full' (i.e. half, step, adopted or foster) siblings. There is some tentative evidence of differences in SWB according to whether children live with non-full siblings or biological siblings only. Children with one non-full sibling had lower SWB on both measures than those with only biological siblings, and children with two or more non-full siblings had the highest likelihood of low SWB and the lowest 4-domain SWB scores. However, Table 66 shows that complex sibship and family structure overlap, with children in step-parent families and non-biological-parent families being much more likely to have non-full siblings, thus, family structure may be confounding the bivariate analysis of complex sibship and SWB and *vice versa*.

Table 66: Bivariate analysis of sibling type, numbers and family structure

Family structure	Full siblings in household	Non-full siblings in household	No siblings (of any type) in household	Mean number of siblings (of any type)
	%	%	%	
Two biological parents	87.8	4.3	10.4	1.4
Step-parent family formal	60.5	53.9	11.5	1.7
Step-parent family informal	66.9	29.9	20.0	1.4
Single-parent alone	69.2	12.3	24.3	1.2
Single-parent extended	61.0	15.3	28.9	1.2
Non-biological parent	33.6	30.9	39.5	0.9

* p<0.05 ** p<0.01 *** p<0.001

Table 66 shows the proportion of children with full siblings, non-full siblings and no siblings - as well as the mean number of siblings of any type - in different family structures. As the first two categories overlap (i.e. children can have full siblings and non-full siblings), the first three columns do not add up to 100%. Around a third to a half of children in step-parent and non-biological parent families had a non-full sibling in the household, but a much smaller proportion of two biological-parent and single-parent families had non-full siblings, as would be expected. Children in two biological-parent and formal step-families were the least likely to be 'only' children. In parallel, these family structures had the highest mean number of siblings, while non-biological-parent families had the lowest number of siblings.

The next step was to carry out multivariate analysis to include the sibling variables, as shown in Table 67. Similar to the bivariate analysis there was a pattern of 'only' children and those with two or more siblings having a higher likelihood of low SWB than children with just one sibling. However, the findings for children in larger families appear to be largely explained by the socioeconomic circumstances of these families as the odds ratios for children with two or more siblings were no longer significant once income, housing tenure and subjective financial difficulties were included. In respect of 4-domain SWB scores, the only group with lower SWB were children without siblings, however, this finding became non-significant once family structure was included. In respect of family SWB, there was an interesting finding of a higher likelihood of dissatisfaction with family relationships amongst children in larger families, which was attenuated when socioeconomic circumstances were included, but became significant again once family structure was taken into account. Both the 4-domain and family SWB findings are likely to be due to children in non-biological parent families - who tend to have lower SWB - having fewer siblings on average, as can be seen in Table 66. The lower family SWB of children in larger families supports the hypothesis that the division of parental time amongst multiple siblings may lead to lower quality parent-child relationships and sibling rivalry (Becker and Tomes, 1976).

With regards to complex sibship, there were associations between having non-full siblings and a higher likelihood of low overall SWB as well as lower 4-domain SWB scores, which remained once socioeconomic circumstances were taken into account but disappeared once family structure was included. Thus, it would appear that the negative association between complex sibship and SWB relates more to the adults with whom children live – and children's socioeconomic circumstances - than to their siblings. This is in line with Mostafa

and colleagues (2018) who found complex sibship to be explained largely by observed

characteristics of these households.

Table 67: Siblings and children's SWB

	Siblings [a]	Siblings [a] + socio-economic [b]	Siblings [a] + socio-economic [b] + family structure [c]
	Odds ratios, low overall SWB		
Number of siblings (1)			
0 (only child)	1.22*	1.13	1.03
2	1.13	1.06	1.09
3+	1.30**	1.05	1.11
Any non-full siblings	1.40***	1.24*	1.09
N	37800	37800	37800
F	8.05***	9.99***	9.78***
	(30, 2714)	(36, 2714)	(41, 2714)
	Odds ratios, low family SWB		
Number of siblings (1)			
0 (only child)	1.27*	1.21	1.02
2	1.11	1.08	1.15
3+	1.34*	1.22	1.35*
Any non-full siblings	1.22	1.13	0.90
N	37800	37800	37800
F	10.86***	10.41***	10.79***
	(30, 2714)	(36, 2714)	(41, 2714)
	Regression coefficients, 4-domain SWB		
Number of siblings (1)			
0 (only child)	-0.31**	-0.23*	-0.07
2	-0.16	-0.11	-0.16
3+	-0.01	0.17	0.08
Any non-full siblings	-0.42***	-0.31*	-0.03
_cons	21.20***	21.04***	21.27***
N	37800	37800	37800
F	50.29***	44.84***	42.17***
	(30, 2714)	(36, 2714)	(41, 2714)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$
[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)
[b] Model also includes income quintiles, finding it difficult financially, and whether home is owned (coefficients not shown)
[c] Model also includes current family structure (coefficients not shown)

However, it is unlikely that any benefits or disadvantages to children's SWB of living with siblings – be they full-, half-, step-, adoptive- or foster- siblings - accrue simply by them being present in the household. If sibling effects exist, they are likely to relate to the quality of the sibling relationship. For example, a positive and supportive relationship between siblings has been found to moderate the relationship between negative life events and child mental health (Gass, Jenkins and Dunn, 2007). For this reason, Chapter 5 considers sibling relationship quality in more detail.

In contrast to Tillman (2008), who found stronger associations between sibship complexity and educational attainment for boys than girls, there were no interactions between complex sibship and sex in their association with SWB. There were also no interactions between sibship complexity and family structure or any of the socioeconomic measures in their association with SWB. However, as shown in Figure 20, age and birth order moderated the relationship between having non-full siblings and likelihood of low SWB. In contrast with qualitative research suggesting that sibship complexity might be more difficult for older siblings – at least if younger siblings were mutual children (Bernstein, 1997) – in this analysis, 10-year-olds with non-full siblings were less happy with their friendships than older children. There were also interactions between complex sibship and birth order in their association with low overall SWB, but these were not clear-cut as they mostly related to children who were sixth- or later born children, which are likely to be sample-specific and also to relate to children with unusual circumstances that are not observed in this analysis.

Figure 20: SWB and non-full siblings by age and birth order (95% CIs)
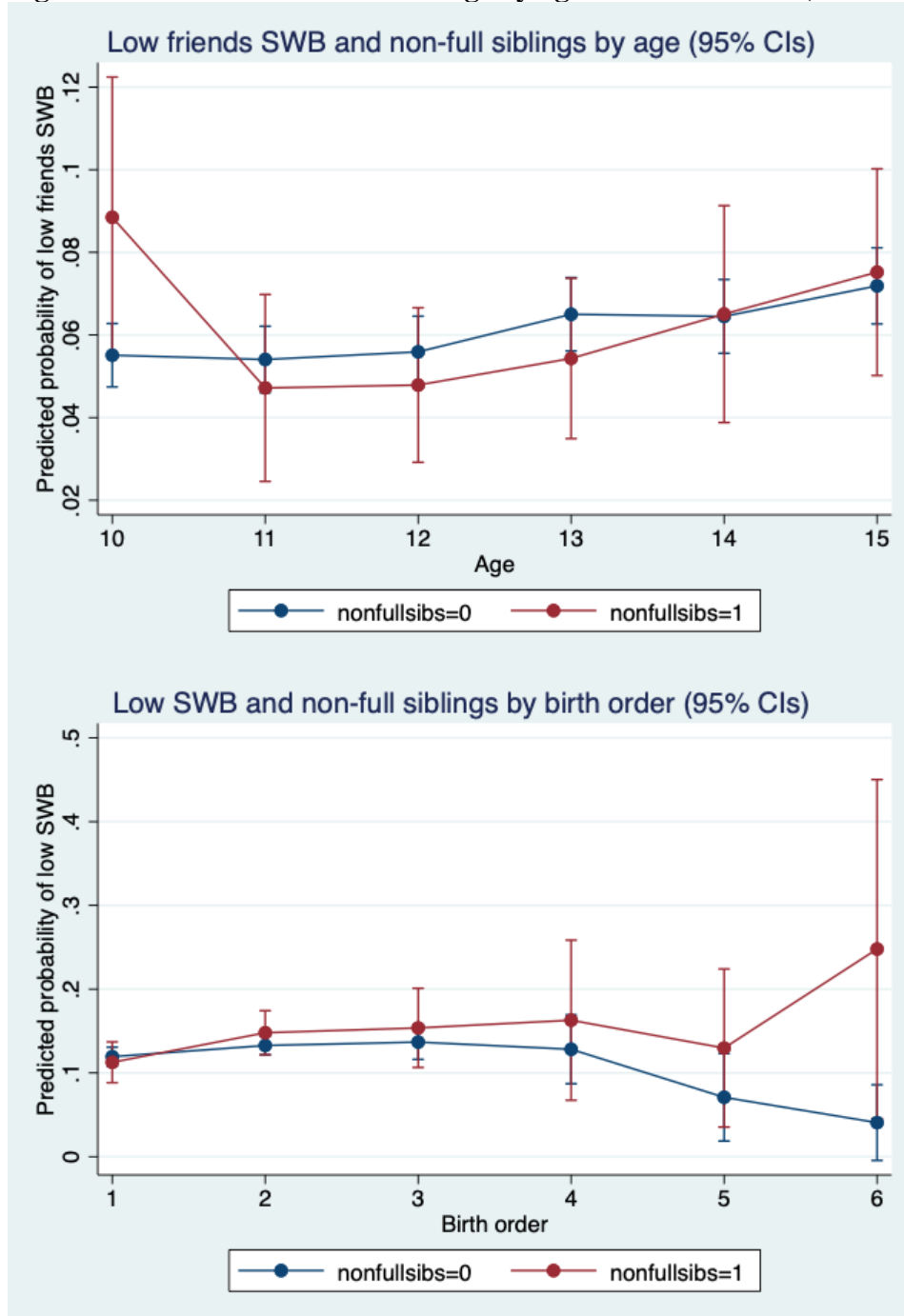
Extended family households

Thus far, extended family members have only been considered in relation to single-parent

households to explore the additional adult hypothesis that children in these family structures

benefit from co-resident family members who can help the single parent to look after and

support them. Although grandparents and extended family are most likely to live with

children in SPE and non-biological-parent structures, it is of course possible for children to

live with these family members in every family structure (except a SPA family). Table 68

shows that more than half (54.2%) of children in SPE families, and four in ten (39.5%)

children in non-biological parent families live with a grandparent. Once other members of the

extended family are counted as well as grandparents, this figure rises to 89.1% of children in

SPE families and half (49.8%) of children in non-biological parent families. The high

proportion of children in SPE families living with extended family members is to be expected

since SPE families are categorised on the basis of other adults (but not adult children) living

in the household. In the 10.9% of SPE households that do not contain extended family

members, other residents of the household may include boyfriends or girlfriends of the main

parent (but who are not identified as parent of the child, or partner to the parent – as

described in Box 1).

Table 68: Bivariate analysis of family structure and whether extended family members live in the household

Family structure	% living with a grandparent	% living with another extended family member	% living with extended family (incl. grandparents)
Two biological parents	1.8	1.2	2.8
Step-parent family formal	1.1	1.3	2.3
Step-parent family informal	1.9	5.4	7.2
Single-parent alone	-	-	-
Single-parent extended	54.2	45.2	89.1
Non-biological parent	39.5	22.6	49.8

As shown in Table 69, at the bivariate level, children living with extended family members

had slightly lower 4-domain SWB scores and a slightly higher likelihood of low overall SWB

than those not living with extended family members, although neither finding was significant.

Table 69: Bivariate analysis of living with extended family and children's SWB

Lives with extended family member	% of sample	% with low SWB	Mean 4-domain SWB score
		NS	NS
No	95.8	12.9	19.5
Yes	4.2	15.0	19.3

However, as outlined in the introduction to this chapter, the co-residence of multiple generations and extended families is known to be more common amongst certain ethnic groups and socioeconomically disadvantaged households. Thus, bivariate associations with SWB are likely to be confounded by these other characteristics. Table 70 shows how ethnicity and socioeconomic circumstances are related to co-residence with extended family. Children living with extended family members had lower household incomes and lower levels of parental education, and were more likely to be situated in the most deprived neighbourhoods, in households that are workless or in receipt of means-tested benefits, and in rented housing. They were also more likely to be of Indian, Pakistani or Bangladeshi ethnicity.

Table 70: Bivariate analysis of socioeconomic circumstances, ethnicity and co-residence of extended family

		Doesn't live with extended family	Lives with extended family
Socioeconomic circumstances			
Monthly household income (mean)	***	£1471.19	£1365.13
Parental degree %	***	36.4	24.3
Workless %	***	12.3	20.5
Most deprived Townsend quintiles %	***	36.6	51.5
Means-tested benefits %	*	33.3	39.9
Home-owner %	**	65.9	55.8
Finding it difficult financially %	NS	14.1	15.7
Ethnicity	***	%	%
White		96.6	3.4
Mixed		94.9	5.1
Indian		86.3	13.7
Pakistani		86.4	13.6
Bangladeshi		88.4	11.6
Black Caribbean		95.2	4.8
Black African		95.2	4.8

In multivariate analysis, there were similar patterns across all three measures of SWB. In the initial models, which controlled only for children's characteristics (and wave of the survey), living with extended family members was associated with a higher likelihood of low SWB and lower 4-domain scores, although none of these differences were statistically significant. Once socioeconomic circumstances were included in the models, the estimates reduced in size, likely because families with co-resident family members are more likely to be socioeconomically disadvantaged, as shown in Table 71. Furthermore, once family structure was also taken into account, children were *less* likely to have low SWB if they lived with extended family members, although these findings were not statistically significant.

Table 71: Co-resident extended family and children's SWB

	Extended family [a]	Extended family [a] + socio-economic [b]	Extended family [a] + socio-economic [b] + family structure [c]
	Odds ratios, low overall SWB		
Lives with extended family	1.21	1.13	0.94
N	37800	37800	37800
F	7.92***	10.39***	10.20***
	(27, 2714)	(33, 2714)	(38, 2714)
	Odds ratios, low family SWB		
Lives with extended family	1.38	1.32	0.83
N	37800	37800	37800
F	10.94***	10.63***	10.95***
	(27, 2714)	(33, 2714)	(38, 2714)
	Regression coefficients, 4-domain SWB		
Lives with extended family	-0.25	-0.18	0.02
_cons	21.07***	20.94***	21.23***
N	37800	37800	37800
F	53.85***	47.55***	45.16***
	(27, 2714)	(33, 2714)	(38, 2714)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$
[a] Model includes wave, age, sex, ethnicity & country (coefficients not shown)
[b] Model also includes income quintiles, finding it difficult financially, and whether home is owned (coefficients not shown)
[c] Model also includes current family structure (coefficients not shown)

In addition to households in which children are co-resident with members of their extended family, research with children indicates that they benefit from support from grandparents and other members of the extended family that they do *not* live with. The UKHLS allows for exploration of this theme as in Waves 3, 5, 7, 9 and 11 responding adults are asked whether they receive help - including financial help - from their parents (i.e. children's grandparents).

As can be seen in Table 72, two biological-parent families were comparatively less likely to receive financial help or cleaning. Single-parent families with no other adults in the household were more likely than other family structures to receive grandparental financial support, help with house repairs and help providing or cooking meals. Formal and informal

step-parent families were equally likely to receive most types of support, however, formal

step-parent families were more likely to receive help with childcare, meals and shopping.

Single-parent families with other adults in the household were *less* likely to receive help from

children's grandparents in respect of house repairs, meals and childcare than two biological-

parent families. However, this is likely to be a function of the question, which asks adults

what help is received from parents *not living with them*. Other types of help were more

evenly spread across the two types of single-parent families.

Table 72: Family structure and grandparental help

	Financial help	Decorating, gardening or house repairs	Providing or cooking meals	Looking after your children
	%	%	%	**%**
	***	***	***	**
Two biological-parents	15.1	8.3	11.4	35.4
Step-parent formal	23.7	12.7	14.7	45.3
Step-parent informal	22.5	12.9	11.5	37.2
SPA	24.9	15.0	16.8	37.7
SPE	12.4	2.1	5.0	20.4
No biological-parents	22.1	3.9	7.2	35.9
	Getting a lift in their car	Shopping for you	Help with washing, ironing or cleaning	
	%	%	%	
	***	***	NS	
Two biological-parent	11.6	7.9	6.1	
Step-parent formal	18.4	12.2	6.8	
Step-parent informal	20.8	9.6	5.7	
SPA	15.6	13.0	7.9	
SPE	17.1	17.2	9.4	
No biological-parents	2.0	5.9	6.9	

As would be expected, Table 73 shows that families were more likely to receive financial

help or lifts in a grandparent's car if they were income-poor, struggling financially and living

in rented accommodation. There was also a fairly clear social gradient for receiving help with

shopping. However, help with meals and house repairs were not associated with family

socioeconomic circumstances, while help with childcare and cleaning were associated with

greater socioeconomic advantage.

Table 73: Socioeconomic circumstances and grandparental help

	Financial help	Decorating, gardening or house repairs	Providing or cooking meals	Looking after your children
	%	%	%	**%**
Income poverty	***	NS	NS	NS
No	16.4	10.4	12.6	37.2
Yes	23.4	8.7	12.8	34.3
Subjective financial difficulties	***	NS	NS	*
No	15.6	9.9	12.7	37.3
Yes	33.2	10.6	12.9	32.1
Home owned	***	NS	NS	**
No	23.1	9.0	12.2	32.7
Yes	15.3	10.5	12.9	38.6

	Getting a lift in their car	Shopping for you	Help with washing, ironing or cleaning	
	%	%	%	
Income poverty	***	**	NS	
No	11.8	8.7	6.9	
Yes	17.7	11.6	5.3	
Subjective financial difficulties	*	**	NS	
No	12.7	8.9	6.6	
Yes	16.2	12.5	6.5	
Home owned	***	**	*	
No	16.4	11.3	5.2	
Yes	11.5	8.4	7.3	

Differences in the types of grandparental help that are received by households with different

family structures and socioeconomic circumstances mean that these circumstances need to be

taken into account when exploring the relationship between grandparental help and children's

SWB. However, Table 74 indicates that grandparental support was not associated with

children's SWB once children's characteristics, family structure and socioeconomic

circumstances were controlled. Children whose grandparents helped with childcare, lifts in the car, shopping and meals had lower odds of low SWB and higher 4-domain SWB scores. Conversely, children whose families received financial support and house repairs from grandparents had a higher likelihood of low SWB and lower 4-domain SWB scores, which perhaps indicates that these families are disadvantaged in ways that the socioeconomic measures included in the models are not fully accounting for. However, none of these findings were significant at the 95% confidence level.

Table 74: Grandparental help, family structure, socioeconomic circumstances and children's SWB

	Odds ratios of low overall SWB						
Cleaning	1.04						
Childcare		0.89					
Financial help			1.06				
House repairs				1.22			
Lifts in the car					0.96		
Meals						0.90	
Shopping							0.95
Unweighted N	14140	14140	14140	14140	14140	14140	14140
F	5.04***	5.02***	5.04***	5.19***	5.02***	5.03***	5.03***
	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)
	Regression coefficients for 4-domain SWB						
Cleaning	0.02						
Childcare		0.20					
Financial help			-0.08				
House repairs				-0.04			
Lifts in the car					0.10		
Meals						0.21	
Shopping							0.15
_cons	21.44***	21.37***	21.45***	21.45***	21.44***	21.43***	21.43***
Unweighted N	14140	14140	14140	14140	14140	14140	14140
F	24.52***	24.65***	25.13***	24.50***	24.51***	24.58***	24.50***
	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)	(32, 1731)
R^2	0.10	0.10	0.10	0.10	0.10	0.10	0.10

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Model includes wave, age, sex, ethnicity, country, family structure, income quintiles, subjective financial difficulties and housing tenure (coefficients not shown)

Contrary to expectations that grandparental help may be of greater benefit to children experiencing socioeconomic disadvantage, Table 75 shows that there were no statistically significant interactions between grandparental help and socioeconomic circumstances in their association with low overall SWB, and there were no clear patterns in respect of the 4-domain measure of SWB (not shown). However, there was indicative evidence that children in income-poor families receiving grandparental help with cleaning, childcare, finances, lifts in the car and shopping were less likely to have low overall SWB than those not receiving this help. Table 75 shows the interactions between poverty and different types of grandparental help, which were all non-significant. There was also no evidence to support the hypothesis that grandparental help may be especially beneficial to single-parent families with no other adults in the household (results not shown).

In summary, grandparental help with various practical tasks was more likely to be received by SPA and socioeconomically disadvantaged households, although there was little support for the hypothesis that such help was beneficial for children's SWB. However, the questions about grandparental help contained within the UKHLS relate to parents' rather than children's assessments of what is received. There is no information about whether this help is visible and beneficial to children, and the contact and quality of relationship that children have with their grandparents. More detailed information about children's perspectives on their relationships with grandparents and extended family members would be expected to uncover clearer associations with SWB.

Table 75: Interactions between grandparental help and socioeconomic circumstances, children's low overall SWB

	Odds ratios of low overall SWB						
Poverty	0.96	0.98	0.94	0.94	0.98	0.94	0.96
Cleaning	0.80						
Cleaning x poverty	0.46†						
Childcare		0.91					
Childcare x poverty		0.91					
Financial help			1.08				
Financial help x poverty			1.02				
House repairs				1.21			
House repairs x poverty				1.12			
Lifts in the car					1.03		
Lifts in the car x poverty					0.85		
Meals						0.88	
Meals x poverty						1.10	
Shopping							1.00
Shopping x poverty							0.89
Unweighted N	14140	14140	14140	14140	14140	14140	14128
F	5.18***	5.12***	5.16***	5.34***	5.11***	5.14***	5.03***
	(30, 1731)	(30, 1731)	(30, 1731)	(30, 1731)	(30, 1731)	(30, 1731)	(30, 1731)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$ † $p<0.01$

Model includes wave, age, sex, ethnicity, country, family structure, income quintiles, subjective financial difficulties and housing tenure (coefficients not shown)

Within- and between- family differences in SWB

This analysis moves on to consider within- and between- family differences in SWB using multilevel sibling models. By taking account of the clustering of observations within children (i.e. repeated observations of a child who has participated in multiple waves of the survey) and within families (i.e. observations of different siblings), unobserved factors that are shared by children in the same family - or by observations of the same child - can be disregarded. The SWB scores of children who have responded to multiple waves of the survey - and those of different siblings within the same family – would be expected to be more alike than those of children in different families. This is due to both selection effects - such as the heritability of SWB and unobserved characteristics of the family environment that affect SWB - as well as the causal effects of interest.

Table 76 presents a series of 'variance components models' to demonstrate how much of the variation in children's SWB lies between families, within families and within children. The 'null model' identifies the mean SWB scores and total variance of all observations when no levels are included, while the two-level child-effects model (which was explored in Chapter 3) and two-level family-effects model decompose the variance into separate components relating to the observation-, child- and family- level. As can be seen, the inclusion of child- and family-effects decreases the between-observation variance to account for the clustering that exists within children and families.

Table 76: Single-level and two-level variance components models of children's 4-domain SWB

Parameter	Null model		Child-effects model		Family-effects model	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	19.64	0.02	19.67	0.02	19.65	0.03
Family-level variance	--	--	--	--	3.91	0.10
Child-level variance	--	--	5.25	0.10	--	--
Observation-level variance	12.34	0.09	7.10	0.06	8.55	0.07
Deviance	202298		195719		196897	
Change in deviance from null model (df=1)			6579		5401	
Prob > chi^2			p<0.0001		p<0.0001	

Unweighted N=37,809

Likelihood ratio tests indicate that the child-effects and family-effects models are preferred to the null model. The variance partition coefficient (VPC) for the child-effects model is 0.425, which means that in this model 57.5% of the variation in SWB scores lies between children, and 42.5% within children (at different timepoints). The VPC for the family-effects model is 0.314, which means that, in this model, 69.6% of the variation in SWB scores lies between families, and 31.4% within families (either between siblings, or within children).

The next step is to explore the extent to which socioeconomic circumstances, family structure and sibship complexity can explain differences in children's SWB between and within families. Table 77 presents a two-level family random effects model, which is estimated using maximum likelihood estimation (MLE), as well as between-effects and within-effects models for comparison, which are estimated using OLS. The between-effects model focuses on the differences in SWB between children in different families and the extent to which socioeconomic circumstances, family structure and sibship complexity can explain these differences. However, it is possible that there are unobserved family factors – including genetic heritability and aspects of the family environment - that cause socioeconomic

disadvantage, family structure, sibship complexity *and* children's SWB. The between-family effects of interest may, therefore, be confounded with the effects of these omitted variables. The within-effects model focuses on differences in SWB scores between siblings as well as children for whom there are repeated observations over time. As such, all time-invariant factors relating to shared family characteristics, genes and the environment can be discounted, regardless of whether they are observed or unobserved, since each family is serving as its own control. However, both between- and within-family effects can be confounded by omitted time-varying variables at level-1 (observations of children at a particular point in time). It can, thus, be useful to compare the results of the between- and within-effects to the random-effects model, which is a weighted average of between and within-effects, to consider any differences between the models and whether there appears to be level-2 and level-1 endogeneity at play, although the latter is hard to detect. In the within-effects and random-effects models, each family is allowed to have its own intercept, however, families are assumed to share a common slope for each covariate considered.

Table 77: Between-, within- and random- effects models of children's SWB, child/family characteristics and adult-reported socioeconomic circumstances

	Regression coefficients		
Variable (reference category in brackets)	Between-family effects	Within-family effects	Random-effects
	(Model 1)	(Model 2)	(Model 3)
Child characteristics			
Age (centred)	-0.50***	-0.46***	-0.48***
Sex: female	-0.34***	-0.32***	-0.34***
Family characteristics			
Family structure (2 biological-parents)			
Step-parent formal	-0.52***	-0.70***	-0.60***
Step-parent informal	-0.30	-0.93***	-0.72***
Single-parent alone	-0.56***	-0.61***	-0.63***
Single-parent extended	-0.08	-0.71**	-0.50**
No biological parents	-0.88***	-0.41	-0.78***
Sibship complexity (no non-full siblings)			
Non-full siblings	-0.17	0.02	-0.08
Socioeconomic circumstances			
Income quintiles (highest quintile)			
1st quintile (lowest)	-0.06	0.12	0.06
2nd quintile	-0.17**	0.07	-0.01
3rd quintile	-0.03	0.05	0.01
4th quintile	-0.02	0.06*	0.03
Subjective financial difficulties	-0.67***	-0.06	-0.23***
Home owned	0.08	0.22	0.19**
Intercept	20.25***	20.51***	19.98***
N (unweighted) cases	37809	37809	37809
Between-family variance	--	7.73	7.77
Within-family variance	--	8.05	3.62

* p<0.05 ** p<0.01 *** p<0.001
Models also control for ethnicity, country and wave of the survey

Although a Hausman test (χ^2 (34) =118.62***) confirms that the fixed effects model is preferred to the random effects model (Hausman, 1978), the analytical benefits of comparing between- and within-effects to consider each coefficient individually means that all three models are presented. Indeed, Table 77 shows that the coefficients for sex, age, family structure, income and housing tenure were relatively similar in the between- and within-effects models, and z-tests (using the lincom command in Stata) indicate that there were no statistical differences between these estimates. Nonetheless, for SPE and informal step-parent

families, there were large differences in the estimates of children's SWB in the between- and within-effects models, and it is likely due to the small sample sizes for these family structures that the differences were not statistically significant. Children who experience a change to a SPE or informal step-parent family (i.e. the within-effects model) had lower SWB scores, however, there were no between-family differences in the SWB of children in SPE families or informal step-parent families compared to those in two-biological parent families. The difference between the between- and within-family coefficients was pronounced for SPE families, which suggests that these families may be more advantaged than SPA families in ways that are not observed, and the between-effect estimate may be biased. The difference in the between- and within-effects coefficients for the subjective measure of financial difficulties was also large, and a z-test confirmed that this was statistically significant. Children whose parents said they were finding it difficult financially had significantly lower SWB than children in families without financial difficulties, however, a change in financial difficulties over time was not associated with a change in SWB. This suggests that adult reporting of subjective financial difficulties may tap into unobserved differences between families, thus, for this variable, the coefficient from the within-effects model is preferable to those estimated by the between- or random-effects models. Finally, in relation to the measure of sibship complexity, none of the coefficients were significant. Thus, there is no evidence that these aspects of children's living environments are associated with higher or lower SWB once family structure has been taken into account.

Similar analysis was conducted with waves 5, 7 and 9 of the UKHLS, which contain the child-reported measures of neighbourhood and pocket money / savings that were found to be important correlates of SWB in Chapter 3. Again, a significant Hausman test (χ^2 (30) = 74.93***) indicated that the fixed effects model was preferred; however, Table 78 presents

both the between- and within-effects so that the individual coefficients can be compared. After controlling for family-level factors, all of the child-reported variables of socioeconomic disadvantage were associated with lower SWB. In particular, children who do not like their neighbourhoods had SWB scores that were almost two points lower than those who do like their neighbourhoods, while children who feel unsafe in their area, those who worry about crime and those lacking pocket money or savings had lower SWB in all three models. However, there were statistically significant differences in the between- and within-effects parameter estimates for children's spending and saving habits and their worry about crime, with larger differences between- rather than within-families. This suggests that part of the explanation for differences in children's worry about crime and assessment of their financial situations relates to unobserved factors at the family-level. Nonetheless, even after controlling for these unobserved factors, child-reported pocket money and worry about crime are significant correlates of SWB. Furthermore, the inclusion of the child-reported variables decreased the between-family variance, meaning that families become a less important determinant of children's SWB scores when these covariates are taken into account.

Table 78: Between-, within- and random- effects models of children's SWB, child/family characteristics and child-reported socioeconomic circumstances

	Regression coefficients		
Variable (reference category in brackets)	Between-family effects	Within-family effects	Random-effects
	(Model 4)	(Model 5)	(Model 6)
Child characteristics			
Age (centred)	-0.60***	-0.49***	-0.55***
Sex: female	-0.28**	-0.41***	-0.36***
Family characteristics			
Family structure (2 biological-parents)			
Step-parent formal	-0.59***	-0.30	-0.58***
Step-parent informal	-0.17	-0.46	-0.38
Single-parent alone	-0.59***	-0.12	-0.58***
Single-parent extended	-0.64†	0.13	-0.66*
No biological parents	-1.30***	-0.71	-1.20***
Socioeconomic circumstances			
Income quintiles (highest quintile)			
1st quintile (lowest)	-0.07	0.13	0.05
2nd quintile	-0.01	-0.14	-0.11
3rd quintile	-0.10	0.03	-0.06
4th quintile	0.13	-0.01	0.07
Subjective financial difficulties	-0.04	-0.15	-0.10
Home owned	0.16	0.24	0.21*
Child-reported socioeconomic circumstances			
Do not like neighbourhood	-1.89***	-1.65***	-1.85***
Worry about crime	-1.33***	-0.77***	-1.02***
Feel unsafe after dark in area	-0.45***	-0.30**	-0.42***
Spending and saving (Save up to buy things want)			
Save money and try not to spend it	-0.95***	-0.27**	-0.55***
Spend money as soon as get it	-1.15***	-0.50***	-0.85***
Generally do not have pocket money	-1.35***	-0.91***	-1.12***
Intercept	20.96***	20.77***	20.69***
N (unweighted) cases	9061	9061	9061
Between-family variance	--	7.64	7.78
Within-family variance	--	9.58	3.18

† p<0.1 * p<0.05 ** p<0.01 *** p<0.001
Models also control for ethnicity, country and wave of the survey. NB: for comparison, in a null model, the between-family variance = 9.02 and the within-family variance = 4.16

Finally, comparable analysis is conducted with waves 3, 5, 7, 9 and 11 of the UKHLS in which parents were asked about two different types of help received from children's grandparents: childcare and financial help. These additional sources of support might be

expected to benefit children's SWB by bolstering the emotional and financial resources available to children. A significant Hausman test (χ^2 (29) = 46.60*) indicated that the fixed effects model was preferred. Table 72 shows that children in families in which grandparents provide childcare had higher SWB, while children in families receiving financial help had lower SWB, although the latter finding was non-significant. A z-test confirms that there was no significant difference between the between- and within-family estimates for financial help but that the estimates for childcare are significantly different. Thus, although this analysis provides evidence of closer ties to grandparents through the provision of childcare being beneficial to children's SWB, this effect is likely to be confounded by unobserved aspects of the families in which grandparents provide childcare.

Table 79: Between-, within- and random- effects models of children's SWB, child/family characteristics, socioeconomic circumstances and grandparental help

	Regression coefficients		
Variable (reference category in brackets)	Between-family effects	Within-family effects	Random-effects
	(Model 7)	(Model 8)	(Model 9)
Child characteristics			
Age (centred)	-0.53***	-0.47***	-0.50***
Sex: female	-0.40***	-0.42***	-0.42***
Family characteristics			
Family structure (2 biological-parents)			
Step-parent formal	-0.73***	-0.74**	-0.73***
Step-parent informal	-0.54	-0.52	-0.54*
Single-parent alone	-0.68***	-0.68**	-0.72***
Single-parent extended	-0.78*	-1.07	-0.96**
No biological parents	-1.37**	0.04	-0.77
Socioeconomic circumstances			
Income quintiles (highest quintile)			
1st quintile (lowest)	-0.11	0.11	-0.00
2nd quintile	-0.29	0.05	-0.14
3rd quintile	-0.17	0.13	-0.06
4th quintile	0.00	0.17	-0.04
Subjective financial difficulties	-0.31*	-0.08	-0.21*
Home owned	0.25*	-0.00	0.25**
Grandparental help			
Financial help	-0.07	-0.07	-0.07
Childcare	0.31**	-0.10	0.16*
Intercept	20.08***	20.94***	20.03***
N (unweighted) cases	14145	14145	14145
Between-family variance	--	8.17	8.19
Within-family variance	--	9.81	3.25

* $p<0.05$ ** $p<0.01$ *** $p<0.001$
Models also control for ethnicity, country and wave of the survey. NB: for comparison, in a null model, the between-family variance = 9.16 and the within-family variance = 3.45

Stepfamily relationship quality

The last section of this chapter considers children's relationships with their stepparents to explore whether, for children in step-families, the association between family composition and SWB is explained by the quality of relationships with step-parents. This analysis uses different statistical techniques to those used in Chapter 5 as there is only one variable about step-parent relationship quality, in comparison to multiple measures of relationships with

parents and siblings. Thus, although Chapter 5 is where children's family relationships are analysed in detail, the analysis of the quality of children's step-parent relationships is more comparable to the techniques used in this chapter and is, therefore, presented here. This analysis relates to 1,694 observations of 1,159 children who were in a stepfamily structure in at least one wave and answered a question about the quality of their relationship with a step-parent. Since there is no reason to create between-family estimates of step-parent relationship quality (because children in families where there has never been a step-parent should not have data on the quality of the step-parent relationship), this analysis is entirely focused on within-family estimates of differences between children who have experienced a different family structure from siblings, or a change over time.

Table 80: Family fixed-effects models of children's step-parent relationship, complex sibship and SWB

	Regression coefficients, family fixed effects	
Variable (reference category in brackets)	Step-parent relationship quality	Step-parent relationship quality + interaction with complex sibship
Child characteristics		
Age (centred)	-0.40***	-0.40***
Sex: female	-0.75**	-0.72*
Family factors		
Family structure (2 biological-parents)		
Step-parent formal	0.03	0.03
Step-parent informal	-0.16	-0.11
Single-parent alone	-0.38	-0.40
Single-parent extended	-	-
No biological parents	-	-
Complex sibship	0.87†	-3.17*
Step-parent relationship (very poor)		
Poor	0.37	-2.04
Fair	1.41*	-0.18
Good	2.68***	0.79
Very good	3.77***	1.79†
Step-parent relationship (very poor)		
Poor * complex sibship		5.18**
Fair * complex sibship		3.49*
Good * complex sibship		4.27**
Very good * complex sibship		4.54**
Intercept	16.44***	18.18***
N (unweighted) cases	1694	1694

† p<0.1 * p<0.05 ** p<0.01 *** p<0.001
Models also control for income quintiles, subjective financial difficulties, housing tenure, ethnicity, country and wave of the survey. Note, due to the small number of cases in a SPE or non-biological parent family, these estimates are removed from the table.

Table 80 shows that once the quality of the step-parent relationship was taken into consideration in family fixed effects analysis, there were no differences in children's SWB by family structure, either for children living in formal or informal step-parent family structures, although there was a tendency for children in the latter category to have lower SWB. The quality of children's relationships with their step-parent was strongly associated with SWB. Table 80 and Figure 21 show that there was also an interaction with complex sibship: children with a very poor relationship with their step-parent had lower SWB if they had non-

full siblings, however if their relationship with their step-parent was very good, they had higher SWB than those without non-full siblings.

Figure 21: SWB and step-parent relationship quality by complex sibship
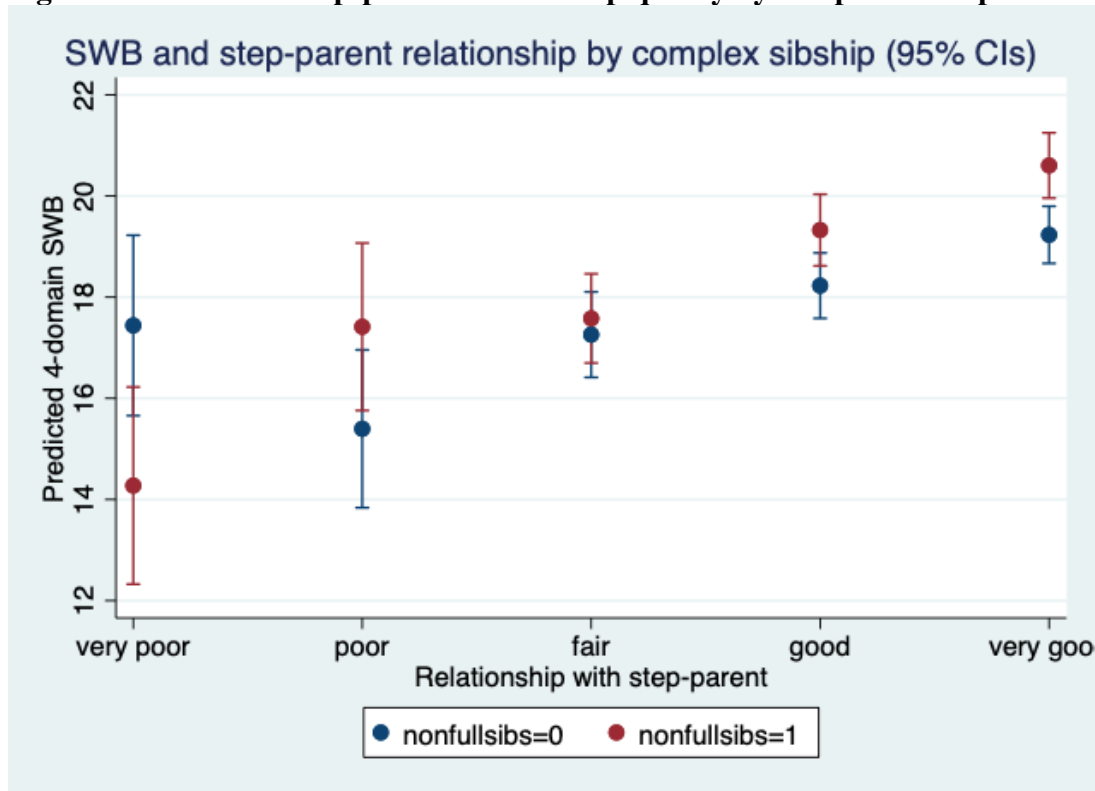
This analysis, which compares different observations from the same child at different points in time - or different siblings within the same family at either the same or different points in time – is able to disregard time-invariant aspects of children's family environments that are unobserved. Thus, there is evidence to support the hypothesis that the lower SWB of children in step-parent families is explained in large part by the quality of the relationship between step-parent and step-child. Furthermore, as expected, having non-full siblings is only associated with lower SWB when the relationship with the step-parent is poor.

Discussion

Chapter 4 extends the analysis conducted in Chapter 3 further to consider whether the complexity of children's family circumstances helps to explain differences in children's SWB, alongside socioeconomic factors. The household design of the UKHLS means that a variety of constellations of family contexts can be discerned. In particular, detailed description of inter-relationships between household members enables the identification of couple relationships, different types of parent-child relationships (e.g. biological, step, adoptive and foster) and the co-residence of extended family members, which makes it possible to assess the formality of step-parent structures and whether there are co-resident family members in single-parent households. It also allows for the consideration of whether grandparents who live within or outside of children's households provide financial or practical support, and if so, whether this is beneficial for children, as is indicated in qualitative research with children in low-income families. In addition, given that in the UKHLS all members of a household are interviewed from the age of 10 upwards, it is possible to compare similar and divergent experiences within the same family. Thus, in households where there are siblings who have also completed a youth survey, data from different siblings within the same household can be analysed to identify within-family and between-family differences.

A wealth of research has documented the sociodemographic changes that have taken place in the UK and other Western industrialised countries in recent decades, and various explanations have been proposed for differences in children's quality of life according to the family structure that they live in, including that certain family types - particularly lone-mother households - face challenges to their earning capacity that intact families do not. Research into characteristics of families also highlights the ways in which different

sociodemographic disadvantages are clustered. Greater involvement in the workforce and delays in childbearing appear to have increased the resources of already advantaged mothers, while relationship breakdown and lone parenthood has been disproportionately concentrated amongst disadvantaged mothers (McLanahan, 2004). Evidence from the UKHLS support these findings. Children in SPA families – the vast majority of whom were female-headed - were the most disadvantaged group, with the highest levels of income poverty, worklessness, benefit receipt and subjective financial difficulties. As expected, once socioeconomic circumstances were controlled in cross-sectional analysis, the association between family structure and children's SWB was attenuated, and for SPE families this association disappeared. However, differences in SWB remained for children in SPA, step-parent and non-biological parent families in comparison to intact families.

Analysis of family structure changes over two consecutive waves of the survey indicated that a change of family structure was more strongly associated with SWB than remaining in the same structure. Furthermore, children who experienced a biological parent moving out of the household had higher dissatisfaction with their family relationships, and children who moved house had lower 4-domain SWB scores, even after controlling for both socioeconomic circumstances and current family structure. Thus, even though only small proportions of children were observed experiencing a change in family structure, a house move or a parent moving out, the findings in respect of these scenarios provide evidence to support the hypothesis that changes resulting in an alternative family structure are more strongly related to SWB than when those structures are stable.

Drawing on role ambiguity theory, it was hypothesised that children in formalised step-parent structures would have higher SWB than children in informal step-families, and the cross-

sectional multivariate analysis supported this. Complex sibship was not expected to be related to SWB except for children experiencing problems in their parent-child relationships. This analysis found no differences in SWB for children with non-full compared to full siblings once a range of controls – including family structure - were taken into account, which suggests that children's relationships with their step- and biological parents may be more significant for SWB than complex sibship. Indeed, in analysis of the subgroup of children who were observed in a stepfamily at some point, there was an interaction between relationship quality and complex sibship when the quality of children's relationships with their step-parents were also considered: children with non-full siblings reporting a very poor relationship with their step-parent had lower SWB but those with a very good relationship had higher SWB than those without non-full siblings.

Assumptions about why living with one parent rather than two might be associated with worse outcomes for children tend to relate to the lower levels of support and supervision that are available to these children. However, single-parent households differ in the degree to which other adults - relatives, friends and romantic partners - offer an additional layer of support. Single-parent extended families (SPE) - in which relatives or non-relatives live with a single-parent family and may fulfil some aspects of the parental role - are one example of this. Indeed, in cross-sectional analysis, children living in SPE families were no more likely to have low SWB than children in two biological-parent families once a range of socioeconomic variables were included in the models, which provides evidence of the additional adult hypothesis being relevant for children's SWB.

The last part of Chapter 4 considered between- and within- family differences in children's family circumstances and SWB. It can be insightful to separate differences between children

in different families from those that relate to siblings in the same family or changes over time for individual children. Between-family differences in family circumstances are widespread and can help shed light on potential causes of variation in children's SWB. However, estimates of the effects of family complexity on SWB derived from between-family analyses may be confounded with aspects of families that are not observed, such as family functioning or genetic inheritance. The between-family analyses highlighted the lower SWB of children in formalised step-parent families and SPA families, but not in SPE family households. This provides evidence to support the conclusion that additional adults present in SPE families may support children's SWB. However, whilst children in informal step-parent families had lower SWB than children in two-biological parent families, the coefficient was not statistically significant, and children in these families did not have lower SWB than children in formalised step-parent families as would be predicted by role ambiguity theory.

In contrast to the between-family models, the family fixed effects models focused on changes experienced by the same child at different timepoints as well as variation between siblings within the same or different wave of the survey. This type of analysis can control for confounding by time-invariant aspects of children's families. Despite earlier findings highlighting that a relatively small proportion of children experienced changes to their family structure, these analyses found that a move into either type of step- or single-parent family - or a child living in one of these family structures compared to a sibling who is not – was associated with lower SWB. This within-family analysis lends support to the hypothesis that a formalised step-parent family structure is more beneficial for children's SWB than an informal structure: the negative coefficient for children living in the latter type of step-family was almost twice as large as the coefficient for a formalised structure. However, in the within-family models, there was little difference between the coefficients for the two

different types of single-parent families. Thus, the conclusions that would be drawn from the between- and within-family models are quite different: the between-family (but not within-family) analysis supports the additional adult hypothesis, while the within-family (but not between-family) analysis supports the benefits of a formalised step- family structure in which the biological parent's partner is identified as either a step- or adoptive- parent. Being a weighted combination of the between- and within-effects models, the random effects model supported both hypotheses. Furthermore, a z-test of the family structure estimates found no statistical difference between the estimates, thus, the random effects model appears to provide unbiased estimates and it may be reasonable to conclude that both hypotheses are supported. Nonetheless, the z-test for the SPE family estimates was of borderline significance, therefore, a more cautious conclusion would be that there is no benefit to an additional adult in single-parent families. Further exploration of family structure that takes into account both socioeconomic circumstances and family relationship quality is undertaken in Chapter 5.

Between and within-family differences were also considered in models that included the child-reported socioeconomic and neighbourhood variables. For two of the variables - children's spending and saving habits and their worry about crime – the between-family estimates were markedly larger than the within-family estimates, suggesting that part of the explanation for differences in children's responses to these questions relate to unobserved child- and family- factors. Nonetheless, even after controlling for unobserved, time-invariant factors, all four child-reported variables were significant correlates of SWB.

A final component of this analysis was to explore the effect of grandparental involvement in children's lives. A key finding from research with children is that extended family members -

especially grandparents - can play an important supportive role for children experiencing socioeconomic disadvantage, especially in lone-mother households (Ridge, 2002; Mahony *et al.*, 2017; Main, 2018). Contrary to expectations, none of the examples of grandparental help were associated with children's SWB in cross-sectional analysis once family structure and socioeconomic circumstances were controlled. This may be due to families receiving grandparental help being disadvantaged in ways that are unobserved. Descriptive statistics show that families were more likely to receive financial help and lifts from children's grandparents if they had lower incomes, were struggling financially and lived in rented accommodation, thus there may be other non-observed aspects of children's material environments that are confounding the relationship between grandparental help and SWB. Indeed, in a random-effects model, which takes account of both between- and within-family differences, grandparental childcare - but not financial help - was associated with children's higher SWB. This is a novel finding that has not been explored elsewhere in the literature on children's SWB. Future analysis that draws on measures of grandparent-child relationship quality would be expected to identify a stronger relationship between grandparental involvement in children's lives and their SWB.

Overall, more nuanced measures of family composition than are typically found in research on family structure help to explain whether and how the identity of co-resident adults and children – as well as non-resident grandparents - are related to children's SWB. However, except for in respect of step-parents, family relationship quality was not considered in this chapter. Children's relationships with their parents and siblings are shaped by a multitude of factors, and the structures themselves provide little information about the factors affecting relationship quality. Chapter 5 will consider these questions in more detail.

Chapter 5: Typologies of family relationships and children's SWB

Introduction

This chapter builds on previous chapters by exploring whether children's socioeconomic circumstances and family structures are associated with the quality of their relationships with family and, in turn, their SWB. Chapter 4 showed that children in certain family structures – particularly, those in SPA families – were more likely to experience socioeconomic disadvantage, and that this goes some way to explaining differences in children's SWB according to family structure. However, even when socioeconomic circumstances were controlled, children in two biological-parent families had higher SWB on average than those in alternative family structures. The quality of children's relationships with other family members is likely to explain these differences. Indeed, for children in the stepfamily sample, family structure was not related with SWB once relationships with step-parents were considered.

It is also plausible that socioeconomic disadvantage is more strongly associated with SWB for children in certain family circumstances. For some children, economic hardship is the only or main problem in their lives; while for others, it is just one of many difficulties that they face. If children are facing socioeconomic disadvantage in addition to other problems - such as unsupportive or discordant family relationships - then it is likely to be more difficult to bear. Some of these problems may themselves be driven or exacerbated by socioeconomic disadvantage, while others may be less clearly related. The Family Stress Model, for example, proposes that financial difficulties put strain on parents as they struggle to meet the basic needs of the family, and this can lead to dysfunctional family relationships and lower quality parenting (Conger and Conger, 2002). However, the relationship between socioeconomic disadvantage and the quality of children's relationships is not clear-cut (Katz

et al, 2007; Gibb et al, 2016). Chapter 5 attempts to disentangle the direct and indirect paths from socioeconomic disadvantage and family structure to children's SWB via the quality of their family relationships.

Children's family relationships

There is cumulating evidence that it is the quality of family relationships rather than any particular family type that is likely to be most important to children's SWB (Patalay and Fitzsimons, 2016; Rees and Bradshaw, 2018). But what constitutes relationship quality? Research with children highlights the importance of supportive, harmonious relationships between parent and child - and between other members of the family. When asked what makes for a good life for them, children talk most often about their relationships with family and friends, and their desire for 'love', 'support' and 'respect' in these relationships (Rees and Pople, 2006). More unexpected, perhaps, is an emphasis on the autonomy-granting aspects of parent-child relationships, such as 'freedom' and 'choice' (Rees and Pople, 2006).

In many ways, children's responses are aligned with parenting studies. Since the 1960s, numerous researchers - including the developmental psychologist Diana Baumrind - have explored how different typologies of parenting relate to children's outcomes (Baumrind, 1966). Two different dimensions of parenting have been proposed: responsiveness, which encapsulates warmth, autonomy, support and reasoned communication, and demandingness, which is concerned with how children's behaviour is controlled and monitored (Baumrind, 1980). These two dimensions give rise to four typologies of parenting, authoritarian, authoritative, permissive and neglectful (Lamborn *et al.*, 1991), which are illustrated in Figure 22 below.

Figure 22: Four typologies of parenting

High control

Authoritarian   Authoritative

Low responsiveness ←——————————→ High responsiveness

Neglectful   Permissive

Low control
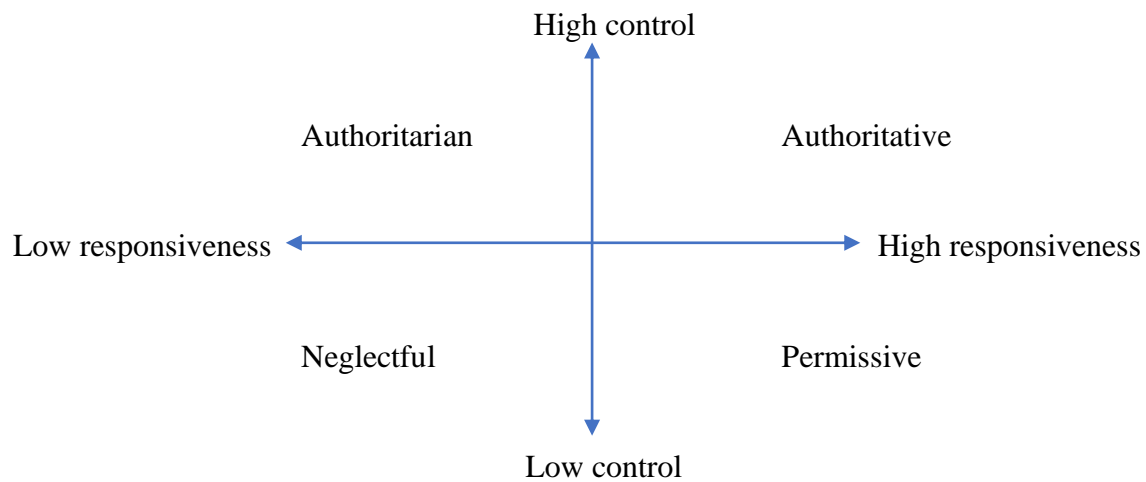
As research has found both responsiveness and control to be important to children's

outcomes, authoritative parenting is considered to be optimal (Amato and Fowler, 2002):

> Children appear to do best when parents are warm and supportive, spend generous
> amounts of time with children, monitor children's behavior, expect children to follow
> rules, encourage open communication, and react to misbehavior with discussion
> rather than harsh punishment.
>
> (Amato and Fowler, 2002, p. 704)

Using the British Household Panel Study, Chan and Koo (2011) found that in comparison to

children whose parents were authoritarian, those experiencing authoritative parenting had

higher SWB, as well as improved health behaviours and educational outcomes. This led to

the conclusion that 'too much emphasis has been put on parental monitoring and supervision,

while the dimension of acceptance or involvement has been overlooked to some degree'

(Chan and Koo, 2011).

Family structure and relationship quality

When examining how children's family relationships are associated with their SWB, it is

important to consider the different family structures that children live in. Although

relationship problems have been found to be less prevalent in two biological-parent families compared to alternative family structures, there are large individual differences in how children fare (Amato, 1994). For some children, a change from a two biological-parent family to a single-parent or step-parent family precipitates an increase in inter-parental conflict and a deterioration in the quality of the child's relationship with one or both parents (Amato, 2001). Children experiencing these types of family relationship problems may experience a 'crisis period' that affects quality of life for a period of time but then passes, depending on the severity of the problems and the presence of protective factors (Hetherington, 1979). On the other hand, if the inter-parental relationship prior to separation is characterised by high levels of conflict, aggression or dysfunction, then a separation may lead to an improvement in circumstances for the child, or no change if these factors are ongoing (Harold and Conger, 1997). Children may also benefit from separation if a non-resident parent has high levels of antisocial behaviour (Jaffee *et al.*, 2003, p. 123).

Exposure to parental conflict that is 'frequent, intense and poorly resolved' has been shown to be especially important for children's adjustment, and may be more significant than parental separation itself (Harold and Conger, 1997). Most research theorises that inter-parental conflict exerts an *indirect* influence on children's adjustment because problems between parents spill over into the parent-child domain, leading to more hostile parenting and a less close relationship between parent and child. However, children may be affected by inter-parental conflict directly too. Research with children suggests that inter-parental conflict can cause distress not just because children fear the hostility may be re-directed towards them, but because bearing witness to parental arguments is upsetting and they may blame themselves or worry about a future separation (Dunn and Deater-Deckard, 2001).

Although most studies of family structure focus on children's mental health rather than SWB, as a whole, the research literature provides evidence to suggest that the relationship between family structure and children's SWB will be mediated by the economic resources that are available to the household, disruptions experienced by the child and - above all - the quality of the inter-parental relationship and parent-child relationships (Rutter, 1981).

Socioeconomic circumstances and relationship quality

Lareau's ethnography of parenting and class in the US details the ways in which children's family relationships reflect their location in society (Lareau, 2011). A lack of economic constraint and a cultural logic of 'concerted cultivation' was observed amongst middle-class families. In these households, children were encouraged to take on a position of equality vis-à-vis adults, to develop a sense of being 'special', that their opinions matter and that situations should be adjusted to meet their needs (page 111). In contrast, working class and poor parents' strategies of giving directives rather than allowing negotiation, sometimes with the threat of physical punishment, were met with 'prompt, respectful compliance' (p139).

In light of this and other evidence of socioeconomic differences in parenting, some scholars have observed that normative models of parenting that favour warm, communicative and authoritative approaches over authoritarian ones do not always take account of the economic and cultural contexts in which children live (Amato and Fowler, 2002). As described above, for children in low-income families, a premium is often placed on respect for - and deference - towards adults, which may be enforced through physical as well as verbal methods. However, in Lareau's ethnography, it was observed that although working-class and poor parents opted for directives over negotiation, sometimes with the threat of physical punishment, their parenting styles did not indicate strained relationships, and in many ways

children's lives were more relaxed (Lareau, 2011). Indeed, so firmly did some parents believe in the wisdom of physical discipline that the schools' emphasis on verbal negotiation were seen as misguided (Lareau, 2011, p. 217). It is possible that different parenting styles are appropriate in different socioeconomic and cultural contexts.

Financial stress

Many of the adverse life experiences that children experience - including family dysfunction, parental ill-health and substance use - arise from, or are exacerbated by, living in socio-economically disadvantaged circumstances. In Lareau's (2011) ethnography of parenting, the interaction between social structure and biography was central to how individual stories unfolded. Children in low-income households faced problems that were not class-specific *per se*, however, their 'social structural location' - and, specifically, their lack of economic resources - reduced the range of choices that were open to them (Lareau, 2011, p. 84).

A prominent theoretical framework for understanding how socioeconomic disadvantage and family relationships are linked to children's outcomes is the Family Stress Model. This proposes that economic stress puts strain on parents as they struggle to meet the needs of their family, which leads to parental psychological problems, dysfunctional family relationships and lower quality parenting, which, in turn, results in psychological problems for children (Conger *et al.*, 1999). Inter-parental conflict arising from economic stress is included as a causal mechanism in the Family Stress Model, and is thought to cause or exacerbate problems in the parent-child relationship (Harold and Conger, 1997).

Although the Family Stress Model contends that the influence of economic hardship on children's adjustment is primarily mediated through the parent-child relationship, it is also

acknowledged that hardship may have a direct effect on children through their perceptions and awareness (Harold and Conger, 1997; Conger *et al.*, 1999; McLoyd *et al.*, 1994). Children in low-income families are likely to be the worst affected as they will more often witness the everyday problems caused by financial stress than children in middle- and high-income families (Ponnet, 2014). Research with children is clear that financial stress is not invisible to them. Qualitative studies highlight children's sensitivity to financial problems in their households and worries, not simply because economic stress affects their own material situations, but also because they worry about and want to help parents with the challenges they face (Ridge, 2002; Mahony *et al.*, 2017; Main, 2018). Furthermore, perceptions of financial stress may be especially acute in families with just one parent. In one multi-country study, children in single-parent families were more worried about money than their counterparts in intact families (Dinisman *et al.*, 2017).

Sibling relationships

Although delays to fertility and smaller family sizes are increasingly common, the majority of children in the UK share their living environments with one or more sibling. Research has shown that children's sibling relationships are an often overlooked but fundamental part of the family system that can have both short- and long-term consequences for well-being (Pickering and Sanders, 2017; Gass, Jenkins and Dunn, 2007). Sibling scholars have described the distinctiveness and emotional intensity of sibling relationships, which are 'notable for their emotional power and for the uninhibited expression of these emotions' (Dunn, 2002). Children often spend more time with siblings than they do with parents, which leads to a closeness and mutual understanding that allows for high levels of support, but also conflict when familiarity with the other leads to knowledge of what is most likely to hurt them (Dunn, 2002). In a study of children in middle childhood - older siblings who were aged

12 to 13 and younger siblings who were aged 10 – lower sibling relationship quality was associated with greater incidence of emotional and behavioural problems (Dunn *et al.*, 1994). However, there is considerable variation in the quality of children's sibling relationships. Various aspects of children's family contexts are thought to influence sibling relationship quality, including the quality of the parent-child relationship (Brody, 1998), exposure to interparental conflict (Iturralde, Margolin and Spies Shapiro, 2013), and differential parental treatment of siblings (Dunn, 2002), although the interrelationship between these factors and direction of causation is not clearly established.

Children's perspectives

An additional concern for this chapter is the extent to which measures of children's family relationships could be said to be 'child-centred'. This means drawing on children's own assessments wherever possible and focusing on individual children as the units of analysis. Research with children highlights that socioeconomic disadvantage becomes detrimental when it affects social relationships with peers and family (Ridge, 2002; Ridge, 2009; Mahony *et al.*, 2017). However, it is likely to be children's perceptions of their relationships that are important for their well-being (Merten and Henry, 2011; Dunn, 2002), rather than an external assessment of the quality of these.

> What matters for behavior and development is the environment as it is perceived rather than as it may exist in "objective" reality.
>
> (Bronfenbrenner, 1979, p. 4)

A related issue is that much previous research into children's relationships and well-being is based on adult assessments of these. For example, in one study of children's relationships, several of the indicators of relationship quality were parent-reported but presented as equivalent to the child-reported measures (Gibb *et al.*, 2016). Parents' perspectives offer

important insights into the quality of children's lives, but they are not interchangeable with children's perspectives. Indeed, there is accumulating evidence of poor correspondence between children's and parents' assessments of children's feelings and behaviours (Goodman, Lamping and Ploubidis, 2010; Patalay and Fitzsimons, 2018). However, parent-child relationship quality is reciprocal, meaning that both the child's and the parent's perspective on the dyadic relationship are important to consider. Parents and children are likely to differ in their assessments of relationship quality, and they are also likely to behave in ways that influence one another in a cyclical manner (Bronfenbrenner, 1979).

Research aims and hypotheses

Given the research literature outlined above, this chapter has one overarching research aim:

- To examine the extent to which the quality of children's family relationships – between parents, children and siblings – is associated with their SWB, and whether family relationships quality mediates or moderates the relationship between socioeconomic circumstances, family structure and SWB.

Underlying this main aim is a subsidiary aim relating to measurement:

- To compare measures of children's family relationships that are child-reported with measures that are adult-reported in terms of their association with children's SWB

The main, overarching research aim can be separated into specific hypotheses to be tested:

Family relationship quality and children's SWB

1. That children experiencing difficulties in their relationships with parents and siblings will have lower SWB than children without such problems

2. That child-reported measures of parent-child relationships will have stronger associations with SWB than parent-reported measures

Socioeconomic circumstances, family relationship quality and children's SWB

3. That economic disadvantage will be associated with higher incidence of family relationship problems, which, in turn, will be associated with lower SWB i.e. that the quality of children's family relationships will mediate the relationship between socioeconomic circumstances and SWB

4. That family relationship problems occurring within a context of economic disadvantage will have a stronger association with SWB (i.e. that socioeconomic circumstances will moderate the relationship between the quality of children's family relationships and SWB)

5. That in addition to indirect paths from socioeconomic circumstances to SWB via family relationship quality, there will also be direct paths from socioeconomic disadvantage to SWB

<u>Family structure, family relationship quality and children's SWB</u>

6. That the quality of children's family relationships will fully mediate the relationship between family structure and SWB

7. That family relationship problems in alternative family structures will have stronger associations with SWB (i.e. that family structure will moderate the relationship between the quality of children's family relationships and SWB)

The conceptual framework for this chapter, shown in Figure 23, shows the relationships that are hypothesised to exist between child, family and socioeconomic factors, children's family relationships and SWB, making explicit the causal assumptions that are held about these relationships. The mechanism that is the focus of this chapter is children's relationships with their closest family members - namely, their parents and siblings – as well as the inter-parental relationship. As outlined in earlier chapters, child characteristics such as age, sex and ethnicity are associated with SWB, thus, they are included in this analysis as control variables since they are also likely to be associated with different parent-child relationship typologies. Parental education, ethnicity and family structure are all known to influence the family's socioeconomic circumstances and are likely to have a bearing on parent-child relationship typologies. Following the Family Stress Model, background socioeconomic factors – such as household income – are believed to influence the amount of financial stress experienced by families, which in turn is thought to influence children's SWB, both directly and indirectly via the quality of the parent-child relationship. Although most applications of the Family Stress Model consider parental psychological difficulties as a causal mechanism, this is not a specific focus of the analysis in this chapter.

Figure 23: Conceptual framework showing hypothesized relationships between socioeconomic circumstances, family relationship quality and children's SWB
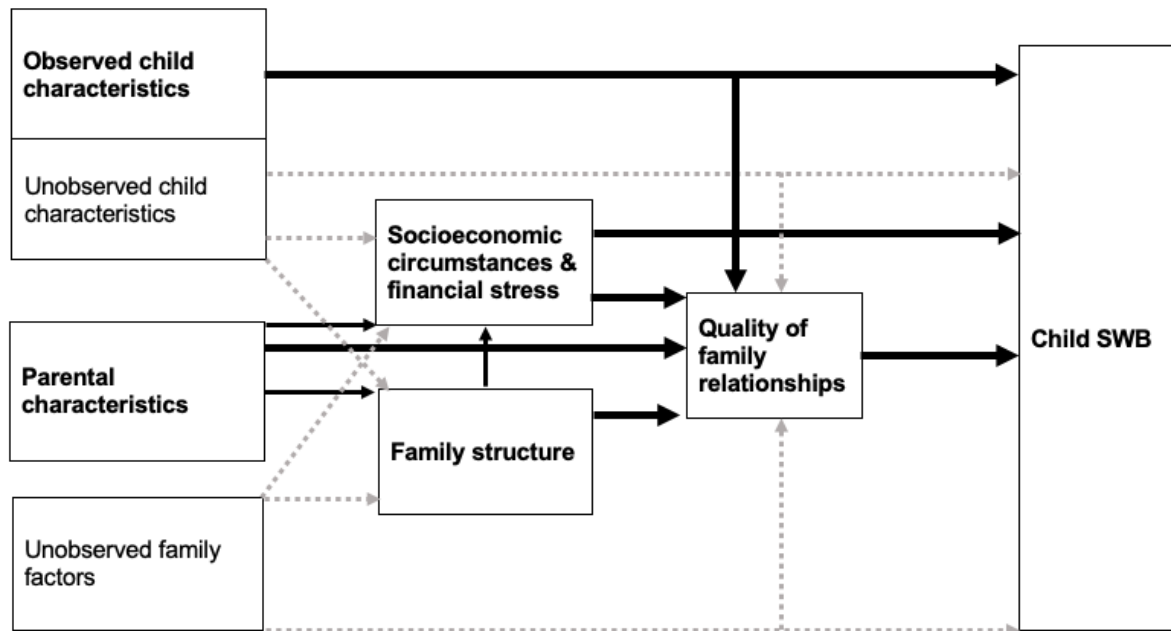
Data and methods

In waves 1, 3, 5, 7, 9 and 11 of the UKHLS, children were asked about their relationships with parents, siblings and step-parents, as well as their material circumstances and SWB, while parents were asked about different aspects of their relationships with their children. As the questions about family relationships - the focus of this chapter - were only asked in odd waves of the UKHLS, this analysis focuses on these waves.

Two of the statistical techniques used in this chapter – latent class analysis and structural equation modelling - allow for the inclusion of missing data. Thus, the main analytical sample comprises a pooled sample of all children participating in waves 1, 3, 5, 7, 9 and 11, which equates to 21,488 observations relating to 12,890 children. However, observations are only included in the latent class analyses if they contain *some* information about the family relationships in question, thus, when children or adults have not answered any of the questions, they are excluded from the analysis. As a result, the sample size varies across the

analyses in this chapter and is reported in the relevant sections, along with information on whether those excluded from the analysis have different characteristics to those included.

Analytic strategy

First, descriptive analysis was carried out for the main independent variables to explore their distributions and levels of missing data. Latent class analysis (which is described in more detail below) was then carried out with the child- and parent-reported indicators of family relationship quality to explore whether there are typologies of children's relationships with parents and siblings. A set of logistic and linear regressions were conducted to explore the extent to which children's family relationships are associated with SWB controlling for children's individual characteristics and socioeconomic circumstances. Finally, structural equation modelling (SEM) was used to carry out mediation and moderation analysis and explore the assumed causal pathways running from socioeconomic circumstances and family structure to SWB via relationship quality. Together these statistical techniques allow for the testing of the hypotheses set out above.

Latent variables

It would be possible to examine how different indicators of the parent-child relationship relate to children's SWB individually, treating each as an observed variable that has a different - albeit, likely similar - relationship with children's SWB. However, this approach does not take account of the ways in which the indicators are related and whether they tap into a broader concept of relationship quality that is important for SWB. Furthermore, treating each indicator as observed assumes that it measures a particular concept perfectly (McCutcheon and Mills, 1998). In reality, there are many reasons why indicators of

relationship quality might be subject to measurement error including, most notably, social desirability bias. The question asked of parents about 'spanking or slapping their child' is an obvious example. This is a parenting behaviour that is not widely condoned, thus, some parents may not want to admit to slapping their child, despite being given assurances about the confidentiality of their responses. However, it is likely that parents who smack their children also use other types of harsh discipline, thus, a particular type of parenting might be detected when multiple indicators are examined together. Lareau's (2011) ethnography of parenting and class in the US serves as an empirical example. Qualitatively different parenting strategies were observed in different households involved in the study and were differentiated on the basis of social class (Lareau, 2011).

Latent Class Analysis

LCA applies a similar technique as CFA to categorical latent variables. This is valuable when the latent variable of interest may be a typology, such as parenting (McCutcheon, 1987). Rather than analysing all of the combinations of parenting behaviours that are possible, prior research evidence suggests that particular combinations – or typologies – are likely to occur. Furthermore, the observed indicators of the parent-child relationship are measured at the categorical level and there is likely to be meaningful interpretation to discrete categories. For example, parents who never shout at or hit their children could be conceived of having a qualitatively different parenting style to those that use physical and verbal punishment as a regular strategy.

In terms of determining how many latent classes best fit the data, a combination of theory and statistical testing is advised. In this case, since there was an *a priori* number of categories theorised to exist – the four typologies of parenting described earlier – the first model

specified four latent classes. If the four-class model converged successfully, then it was compared to models with lower numbers of latent classes (i.e. 1, 2 and 3). Statistical tests such as Akaike's Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were then used to identify the best-fitting model, which is the model with the lowest AIC and BIC values.

Analysis was also carried out to compare how the latent class predicted probabilities for each individual compare to their expected class membership. This gives an indication of the level of uncertainty that there is about assigning a particular respondent to a particular class, and whether there may be overlap between different classes. In the subsequent regression analyses and structural equation modelling carried out towards the end of this chapter, the (continuous) predicted probabilities of children being in a particular latent class are used rather than their (categorical) expected class membership. The benefit of this approach is that uncertainty about class membership can be modelled. For example, a child might have a high predicted probability of being in one class and, thus, be assigned to this class, while also having a relatively high predicted probability of being in another class. Modelling predicted probabilities rather than expected class membership means that the uncertainty about which class each child is in is retained.

Structural Equation Modelling

Structural equation modelling (SEM), which is described in more detail in Chapter 2, was used for the analysis of family structure, socioeconomic disadvantage, children's relationships and SWB because it is well suited to exploring mediation and estimating the size of direct and indirect effects. It also allows for the simultaneous estimation of different pathways, and multiple endogenous variables. This technique also allows for the

consideration of measurement error as well as structural relationships within the same model (Schumacker, 2010).

Measures

Subjective well-being

Chapter 2 includes details of the six SWB measures that are asked of children in the UKHLS, descriptive statistics for these, and the conceptual reasons for focusing on two different measures of SWB:

- a binary measure of low SWB relating to how children feel about life as a whole (i.e. those scoring 3 or below on a scale running from 0 to 6)

- a four-domain measure of happiness with family, friends, school and appearance (on a scale running from 0 to 24)

In this chapter, the focus is mainly on the four-domain measure. A small proportion of children (2%) did not answer the SWB questions relating to the 4-domain model or the life as a whole question (1%), thus, the regression models exclude these observations.

Child characteristics

Like previous chapters, all multivariate analysis controls for the age, sex and ethnicity of the child as well as the wave of the survey and country of the UK of residence.

Family characteristics

As highlighted in Chapter 4, an important consideration in analysis of children's family relationships is how much support children have from adults within - or outside of - the household. For this reason, this chapter continues with the approach taken in Chapter 4 of distinguishing between single-parent families in which the parent is the sole adult in the household (excluding adult children) and those where there are other adults in the household (relatives or otherwise) who may be a source of practical and emotional support. There is also a distinction between step-parent structures that have been formalised and those that are not.

Socio-economic circumstances

Chapter 3 of this thesis considers a range of different measures of children's socioeconomic circumstances. However, this chapter focuses on just three sets of measures to capture key processes involved in the Family Stress Model:

- Household income (either as quintiles or a continuous measure in the structural equation models)
- Subjective financial situation (for both mother and father)
- The child-reported measures of neighbourhood quality and pocket money/savings

Household income was equivalised using an equivalisation factor of 1 for the first adult and a factor of 0.5 for all subsequent adults and children. This approach was found in Chapter 3 to have the clearest relationship with SWB. It was adjusted to take account of inflation using the CPI. A more detailed description of the processes of equivalisation and adjustment is described in Chapter 3.

Child-reported family relationships

In odd waves of the UKHLS, children are asked about various aspects of their relationships with parents. Two of these questions are asked specifically about children's relationships with their mother and father, while the other three relate more generally to family relationships. In preparation for the latent class analysis, all of these were recoded into binary variables (see Table 83). This helps to avoid estimation problems since the number of cells that would be produced in a contingency table for the original variables would be prohibitively high and result in empty cells. In each case, an attempt was made to split a normative and/or positive assessment of the parent-child relationship from a non-typical and/or negative assessment, while ensuring that there were enough cases in each category to ensure that the subsequent analysis is feasible. In a small number of cases (unweighted n=21), children did not answer any of the five questions about relationships with parents or family, thus, they are excluded from the latent class analysis for these questions.

There are also a set of questions about children's relationships with their siblings in odd waves of the UKHLS. These are often described as 'sibling bullying' variables but this analysis treats them as measures of relationship quality amongst siblings, albeit ones that are focused on the presence or absence of conflict. Again, these are dichotomised in preparation for the latent class analysis to distinguish between sibling behaviours that happen infrequently (never or not much) and those that happen more frequently (quite a lot or a lot).

Adult-reported family relationships

In parallel with the child-reported relationship variables, in odd waves of the UKHLS, mothers and fathers are asked how often they engage in different parenting behaviours with

children that they live with, specifically, how much they talk to, argue with, cuddle, praise, yell at and slap their children, and in waves 3, 5, 7, 9 and 11, the extent to which rules are enforced. Two of these questions are similar in wording to questions asked of children: frequency of talking with children about important matters and frequency of arguing with children. As for the child-reported indicators, each of these parent-reported relationship indicators was dichotomised. Again, the intention was to distinguish a positive or and/or normative assessment of the parent-child relationship from a negative and/or atypical assessment, while ensuring a sufficient sample size in each category.

It is important to highlight that the parent-reported questions are not asked about the specific child in question but of *any* children living in the household. There are numerous reasons why a parent may talk or argue often with one child but hardly ever with another. These kinds of subtleties need to be borne in mind when analysing these questions. Another issue to consider is the different family situations that children are living in. Whilst the vast majority (95.8%) of children live with their biological mother, only about two-thirds (67.9%) of children live with their biological father. Relatedly, a large proportion of children have missing data for the father-reported questions (ranging from 38.4% to 40.0%), while missing data for the mother-reported questions was minimal (ranging from 7.2% to 7.7%). Thus, although both the mother-child and father-child relationships are analysed alongside each other, these are not like-for-like comparisons.

In addition to questions about relationships with children, adults living with a partner are also asked a series of questions about the quality of their partner relationships. Of particular relevance to this chapter given the evidence discussed in the introduction about interparental conflict is a question about arguments with partners. Although this variable was not included

in the latent class analysis, it was dichotomised in a similar way to the other relationship variables, with a distinction between those who said that they argued with their partners frequently (specifically, 'more often than not', 'most of the time' or 'all of the time') and those who argued infrequently (specifically, 'occasionally', 'rarely' or 'never'). A single measure that captured responses from either parent was calculated in a similar way to other measures where two parents could respond (e.g. subjective financial difficulties etc) whereby the mother's response was used where possible and the father's response substituted if the mother's response was missing. Furthermore, in order to ensure that children with missing data for this question were not excluded from the analysis – most notably, those living in a single-parent family – the dichotomised variable included a category for those with no information about parental conflict.

Results

Children's perspectives on the parent-child relationship

Descriptive and bivariate analysis of the child-reported family relationship variables and children's SWB are shown in Table 81. All but a tiny proportion (1.2%) of children felt supported by their family, either in some (18.2%) or most things (80.6%). Similarly, the vast majority of children said that if they were upset or worried they would turn to someone in their family (90.8%), with just 2.5% saying they would turn to a relative not living with them and 6.7% saying that they would not turn to anyone in their family. Similarly, a large proportion (86.8%) of children said that they were never out past 9pm without their parents knowing their whereabouts.

Table 81: Descriptive and bivariate analysis of child-reported family relationship variables and children's SWB

Child-reported family relationship variables	% missing data	%	%	% with low SWB	Mean 4-domain SWB score
Talk to mother about things that matter	2.0			***	***
Hardly ever		16.7	16.7	25.3	18.0
Less than once a week		18.2		14.5	19.1
More than once a week		25.9	83.3	10.8	19.7
Most days		39.2		9.3	20.3
Talk to father about things that matter	7.7			***	***
Hardly ever		34.1	34.1	20.0	18.5
Less than once a week		23.4		11.6	19.5
More than once a week		22.2	65.9	7.8	20.2
Most days		20.4		7.0	20.9
Feel supported by family	1.1			***	***
Do not feel supported by family		1.2		55.4	14.2
In some things		18.2	19.4	32.0	17.0
In most things		80.6	80.6	8.5	20.2
Who would turn to if felt upset or worried	5.2			***	***
Mum or stepmum		69.7		10.8	19.9
Dad or stepdad		8.8		11.7	19.7
Brother or sister		11.1	90.8	14.8	19.0
Another relative living with you		1.2		14.9	19.1
Another relative not living with you		2.5		26.3	17.5
No-one within family		6.7	9.2	37.5	16.4
Argue with mother	2.7			***	***
Hardly ever		49.8		9.1	20.2
Less than once a week		24.1	73.9	13.6	19.3
More than once a week		16.3		18.1	18.6
Most days		9.8	26.1	26.2	18.1
Argue with father	8.2			***	***
Hardly ever		60.6		10.0	20.1
Less than once a week		20.8	81.4	13.3	19.4
More than once a week		11.6		17.6	18.6
Most days		7.1	18.6	26.2	18.1
Out past 9pm in past month without parents knowing whereabouts	0.7			***	***
Never		86.8	86.8	12.8	19.7
1-2 times		8.4		15.8	18.9
3-9 times		3.0	13.2	22.6	18.2
10 or more times		1.8		17.4	18.4

In relation to the questions asked specifically about mothers and fathers, it is interesting to

note the difference in the frequency distributions for talking to - or arguing with - mother and

father, particularly at the extremes. About twice as many children say that they 'hardly ever' talk to their father (34.1%) compared to their mother (16.7%) or talk 'most days' to their mother (39.2%) compared to their father (20.4%). For the question about parent-child arguments, a much higher proportion of children say that they hardly ever argue with their father (60.6%), compared to mothers (49.8%). The picture is one of greater levels of mother-child interactions than father-child interactions, as both positive and negative interactions with mothers are more frequent. However, it is important to highlight that children are asked about relationships with their mother and father regardless of whether they live with both biological parents, with a response option provided for children to indicate that they 'do not have a mother/father' if this is the case. Given that a substantial minority of children do not live with their biological father in their main home, frequency of talking or arguing with mother and father are not comparable without knowing the specific living situation of the child.

Table 82 gives the proportions for talking and arguing with father according to the family structure that children live in and also whether they live with their biological father or not. Although it is not possible to know whether children who do not live with their biological father are answering these questions in relation to a co-resident step-father or their non-resident biological father, the fact that only a small proportion said that they 'did not have a father' - and also that the survey contains specific questions about step-parents - suggests that most children are answering this question in relation to their biological father. Table 82 shows that when looking at children who live with both biological parents, the proportions hardly ever talking or arguing with father (27.2% and 57.1%) are more similar to those for the mother (16.7% and 49.8%), and equivalent figures for children not living with their biological father are much higher (52.2% and 70.6%).

Table 82: Child-reported relationship with father and family structure

Frequency of talking to father about things that matter	Hardly ever %	Less than once a week %	More than once a week %	Most days %
Doesn't live with biological father	52.2	20.8	15.1	11.9
Two biological parents	27.2	24.4	24.9	23.5
Step-parent formal	45.2	22.9	17.2	14.8
Step-parent informal	44.2	22.3	19.4	14.2
Single-parent alone (SPA)	53.3	19.9	15.0	11.7
Single-parent extended (SPE)	54.2	18.1	12.6	15.1
No biological parents	45.2	23.1	16.6	15.2
Frequency of arguing with father	Hardly ever %	Less than once a week %	More than once a week %	Most days %
Doesn't live with bio dad	70.6	15.1	8.2	6.1
Two biological parents	57.1	23.0	12.8	7.2
Step-parent formal	63.5	15.2	11.4	9.9
Step-parent informal	74.2	16.7	5.4	3.6
Single-parent alone (SPA)	71.6	15.9	7.3	5.2
Single-parent extended (SPE)	66.3	13.9	12.6	7.3
No biological parents	65.7	13.7	13.0	7.6

In terms of bivariate associations, Table 81 shows there were clear associations with children's SWB for all of the child-reported relationship variables, most strikingly in relation to low overall SWB. More than a half of children (55.4%) who did not feel supported by their family, more than a third of children (37.5%) who would not turn to anyone in their family if upset or worried, about a quarter of children who argued most days with their mother (26.29%) or father (26.2%), or hardly ever talked to their mothers (25.3%), and a fifth of children who hardly ever talked to their father (20.0%) had low SWB. Interestingly, the small proportion of children who had been out past 9pm 10 or more times without parents knowing their whereabouts were less likely to have low SWB (17.4%) than those who had done this 3 to 9 times (22.6%); however, both groups were more likely to have low SWB than children who never stayed out late (12.8%).

Although the five child-reported measures are thought to relate to different dimensions of the parent-child relationship theorised in the parenting literature - specifically, parental support

or responsiveness for four of the variables and parental control or supervision for the fifth –

these dimensions are not expected to be independent of each other. Table 83 shows the

overlap between parental supervision and the other four variables. Children assessing their

parent-child relationships as less supportive - specifically, those who hardly ever talk to their

mother and father, those who do not feel supported by family, and those who would not turn

to someone in their family – were almost twice as likely as those who have more supportive

relationships to have been out past 9pm without parents knowing their whereabouts.

Table 83: Child-reported measures of closeness and supervision

Child-reported relationship variables	Out past 9pm without parents knowing whereabouts	
	% Never	% At least once in past month
Talk to mother about things that matter		
Hardly ever	79.5	20.5
Less than once a week or more often	88.4	11.7
Talk to father about things that matter		
Hardly ever	83.0	17.0
Less than once a week or more often	89.3	10.7
Feel supported by family		
Do not feel supported / supported in some things	78.9	21.1
Supported by family in most things	88.7	11.3
Who would turn to if felt upset or worried		
A relative not living with you / no-one in your family	77.9	22.1
Someone in family that you live with	87.8	12.2
Argue with mother		
Less than once a week	88.3	11.7
More than once a week	83.1	16.9
Argue with father		
Less than once a week	89.2	10.8
More than once a week	85.1	14.9

All of these differences were statistically significant at the 99.9% confidence level.

Table 84 shows the overlap between the negative and positive aspects of parental support. As

would be expected, children who gave lower ratings for positive items of closeness in the

parent-child relationship – i.e. hardly ever talking to their mother or father, not feeling

supported by family and not turning to their family if they were upset or worried - gave higher ratings for the negative items about arguing with their mother or father. This was especially clear for arguments with mothers and the two measures of family support: children lacking family support were almost twice as likely to argue regularly with their mother as those who have family support. Interestingly, the differences were not so stark for arguments with fathers, or for talking and arguing with mothers, suggesting that it is possible to have a communicative and supportive relationship with a parent while also having frequent arguments. Together, Tables 83 and 84 provide initial evidence of different aspects of the parent-child relationship - support, conflict and supervision - appearing to 'hang together' in certain configurations. The latent class analysis will explore this in more detail.

Table 84: Positive and negative child-reported measures of closeness to family

Child-reported family relationship variables	Argue with mother	
	Less than once a week %	More than once a week %
Talk to mother about things that matter		
Hardly ever	66.7	33.3
Less than once a week or more often	75.4	24.6
Feel supported by family		
Do not feel supported / supported in some things	58.3	41.7
Supported by family in most things	77.7	22.3
Who would turn to if felt upset or worried		
A relative not living with you / no-one in your family	55.9	44.1
Someone in family that you live with	75.8	24.2
	Argue with father	
	Less than once a week %	More than once a week %
Talk to father about things that matter		
Hardly ever	79.4	20.6
Less than once a week or more often	82.4	17.6
Feel supported by family		
Do not feel supported / supported in some things	71.8	28.2
Supported by family in most things	83.6	16.4
Who would turn to if felt upset or worried		
A relative not living with you / no-one in your family	71.0	29.0
Someone in family that you live with	82.4	18.6

All of these differences were statistically significant at the 99.9% confidence level.

Socioeconomic circumstances and children's relationships with parents

To test whether the quality of children's family relationships mediates the relationship between socioeconomic disadvantage and children's SWB, it first needs to be established that children's socioeconomic circumstances are associated with measures of the parent-child relationship. The bivariate relationship between equivalised household income quintiles and the child-reported family relationship variables are explored in Table 85. There was a significant relationship between household income quintile and all of the child-reported family relationship variables. Furthermore, the socioeconomic gradient for these variables was generally monotonic, with each increase in household income quintile associated with an increase in the proportion of children who regularly talk to their mothers or fathers, feel supported by family and would turn to family members if upset or worried, and a decrease in the proportion of children who regularly argue with their mothers or fathers. Although the differences were relatively small, in every case children in the poorest quintile were more likely to lack support or supervision than children in the richest quintile.

Table 85: Cross-tabulation of child-reported measures of family relationships and household income quintiles

		Equivalised household income quintiles				
		% 1 (lowest)	% 2	% 3	% 4	% 5 (highest)
Talk to mother about things that matter (hardly ever)	***	18.8	17.5	15.7	15.1	13.7
Talk to father about things that matter (hardly ever)	***	38.5	37.6	32.3	29.3	26.3
Do not feel supported by family / feel supported only in some things	***	22.0	20.9	18.1	16.2	16.5
If upset or worried would turn to a relative not living with you / no-one in your family	*	10.4	9.8	8.7	8.0	7.9
Argue with mother (more than once a week)	***	30.2	27.6	22.9	18.6	16.6
Argue with father (more than once a week)	***	21.7	21.7	17.7	13.7	12.2
Out past 9pm without parents knowing whereabouts (at least once in past month)	***	15.3	13.6	13.7	10.2	10.2

It is interesting that there was a clear socioeconomic gradient for talking with fathers about things that matter but a less steep gradient for talking with mothers. This is perhaps because talking is viewed as a 'soft skill' and at odds with traditional notions of fatherhood and masculinity. Although the caring side of being a father - as distinct from the breadwinning role - is increasingly valued in contemporary, cultural constructions of fatherhood in the UK, it has been noted that the conduct of fatherhood is changing at a slower pace (Braun, Vincent and Ball, 2011). Furthermore, research has found that fathers in low-income or low-status occupations who are actively involved in childcare may be denigrated in ways that middle-class fathers are not (Gillies, 2009).

Latent Class Analysis

The next step in the analysis is to carry out latent class analysis of the child-reported measures of relationships with mothers and fathers. Three items – how much support children

receive from family, who they would turn to if upset or worried, and how often they are out late without their parents knowing their whereabouts – are common to both the mother and father analyses. Two items distinguish the child-mother relationship typology from the child-father relationship typology: children's accounts of the extent to which they talk and argue with their mothers and fathers.

As indicated in the introduction to the methods used in this chapter, latent class analysis (LCA) accounts for missing data, thus, all observations of children from waves 1, 3, 5, 7, 9 and 11 are included in these analyses unless they did not answer *any* of the five questions about family support, parental supervision or talking to mothers/fathers. As a result, for both the child-mother and child-father analyses, the analytical sample is 21,466 observations relating to 12,885 children. However, in subsequent analyses of the child-reported relationship with mothers and fathers in this chapter, children are excluded from the analysis if they did not answer at least one question about their mother or father specifically. Thus, the analytical sample for the child-mother analysis later reduces to 21,183 observations relating to 12,759 children, and the analytical sample for the child-father analysis reduces to 19,998 observations relating to 12,108 children.

Analysis of non-response for these two different analytical samples indicates that children were more likely to be missing from both samples if they were living in a step-parent, single-parent or non-biological parent family, which makes sense given that they are less likely to answer questions about parents if they are not co-resident with them. However, in other respects, these two samples had different characteristics. For the child-reported questions about mothers, children living in households without subjective financial difficulties and in a home that is owned were *more* likely to be missing from the sample, whereas for the child-

reported questions about fathers, the opposite was true, and additionally older (14 and 15-year-old) children were more likely to be missing. This suggests that the small number of children not answering questions about their mothers - presumably because they do not have contact with them or they are deceased - are more advantaged socioeconomically than those who do not answer questions about their fathers. Children missing from both samples had a much higher likelihood of low overall SWB and – in the case of the child-father sample - lower 4-domain scores.

Table 86: Inclusion/exclusion from analytical sample and SWB

	Low overall SWB	4-domain score
Mother-child sample	**	NS
Missing	17.9	19.6
Included	12.5	19.7
Father-child sample	***	***
Missing	20.4	18.8
Included	12.0	19.8

The first three child-reported indicators shown in Tables 88 and 91 - about talking with mother or father about things that matter, feeling supported by family, and turning to family if upset or worried - could be said to measure the dimension of 'responsiveness' or closeness in the parent-child relationship. There is only one indicator that clearly measures the dimension of 'demandingness' or parental supervision: the question about children being out past 9pm without parents knowing their whereabouts. However, although the fourth question about parent-child arguments has been used in other studies as a negatively phrased indicator of closeness (e.g. Chan and Koo, 2011), there may be a case for thinking of it as also tapping into the concept of supervision and discipline for this age group. It seems likely that arguments between parent and children aged 10 to 15 will arise, at least in part, because of a lack of parental success in imposing limits on children's behaviour. It may, therefore, help to discriminate between different typologies of parenting and distinguish parents who impose clear boundaries for behaviour from those who do not.

Latent Class Analysis: Child-reported relationship with mother

The results of the latent class analysis show that a 4-latent class model fitted the data well for the child-reported measures of the mother-child relationship and identified four typologies of parenting approximating the concepts of authoritative, authoritarian, permissive and neglectful styles that are theorised in the parenting literature. Table 87 compares model fit for different numbers of latent classes using the Akaike's Information Criterion (AIC) and the Bayesian Information Criterion (BIC) and demonstrates that the 4-latent-class model has the lowest AIC and BIC values and, thus, the best fit to the data. Consequently, the 4-latent-class model appears to be optimal in terms of its theoretical and statistical properties.

Table 87: Model fit for latent class models of child-reported relationship with mother

Model	N	Log likelihood	df	AIC	BIC
One class	21,467	-47321.28	5	94652.56	94692.43
Two classes	21,467	-45251.07	11	90524.13	90611.85
Three classes	21,467	-45128.62	17	90291.25	90426.81
Four classes	21,467	-45091.24	23	90228.47	90411.88

Figure 24, which presents the figures in Table 88 in chart form to enable comparisons, shows that latent classes 2 and 3 – which were the largest in relative size, representing 38.3% and 43.0 of the sample respectively - identified children who scored highest on the dimension of responsiveness. Children in these classes had a high probability of talking to their mothers about things that matter (87.4% and 97.3%), feeling supported by family (75.9% and 95.8%) and turning to family members if they needed support (94.4% and 99.1%). However, whilst children in latent class 3 had low probabilities of arguing with their mother (9.2%) or being out past 9pm without parents knowing their whereabouts (3.9%), children in class 2 had comparatively high probabilities for these behaviours (44.0% and 21.7% respectively). For

this reason, classes 2 and 3 were felt to approximate 'permissive' and 'authoritative' mother-child relationships.

In respect of arguments and lack of supervision, children in the 'authoritative' class were most like children in latent class 4, who also had low probabilities of these behaviours (0.0% and 13.6% respectively). What distinguished children in latent class 4 from those in the 'permissive' class were lower levels of talking and arguing with their mothers. For this reason, latent class 4 was felt to relate to an 'authoritarian' mother-child relationship, characterised by a high level of parental control, but lower levels of maternal warmth. Children in latent class 1 were like the 'permissive' class in having comparatively high probabilities of arguing with their mothers (57.6% and 44.0%) and being out late without parents knowing their whereabouts (29.3% and 21.7%). However, children in class 1 reported strikingly lower levels of warmth and support than the other three typologies, thus, this class is felt to represent a 'neglectful' parent-child relationship. The 'authoritarian' and 'neglectful' classes were the smallest classes, representing 10.1% and 8.6% of the sample respectively.

Figure 24: Predicted probabilities of child-reported relationship with mother (95% CIs)
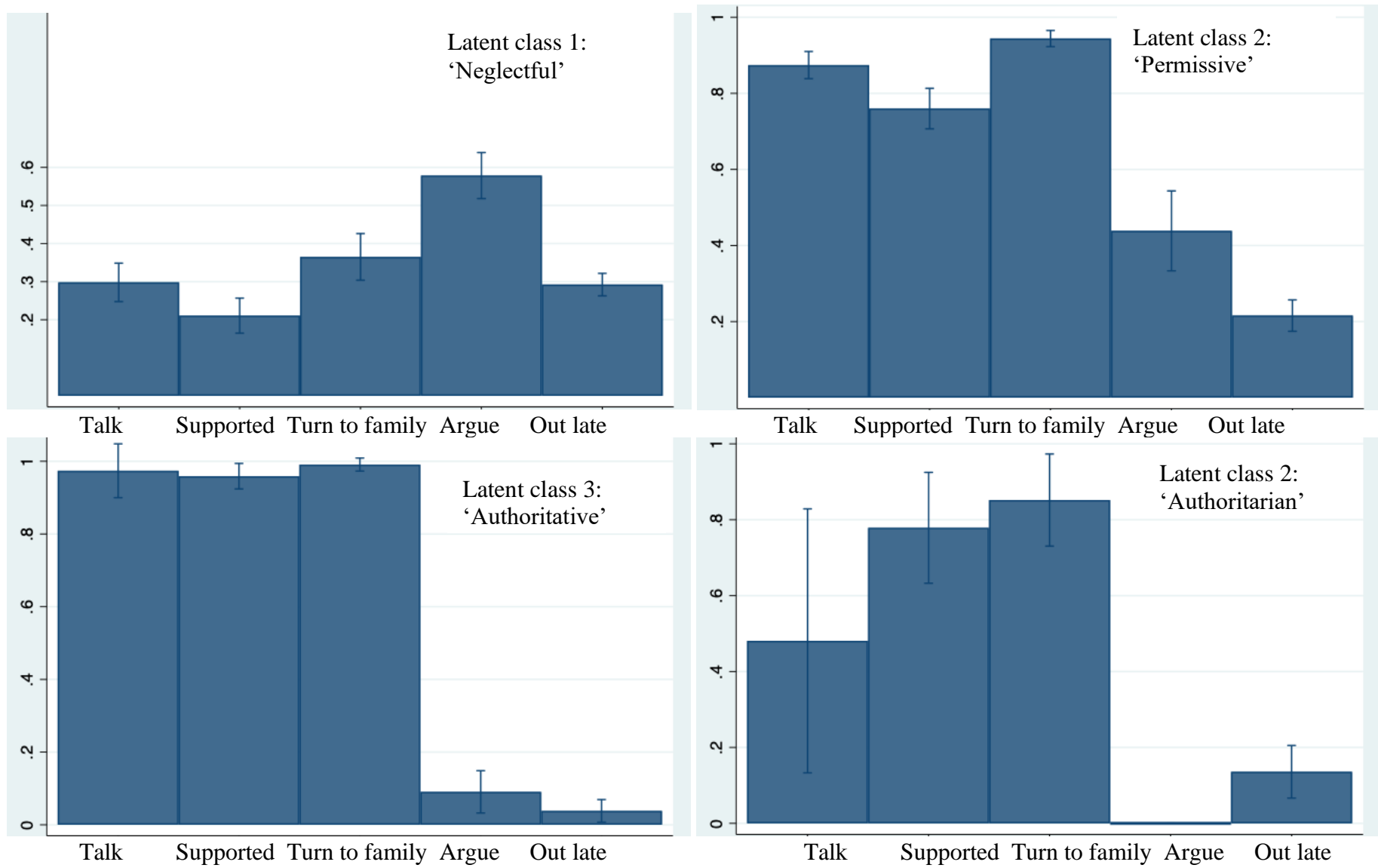
Table 88: Predicted probabilities of the child-reported relationship with mother

Class	1 'Neglectful'	2 'Permissive'	3 'Authoritative'	4 'Authoritarian'
Relative size	0.086	0.383	0.430	0.101
Talk with mother about things that matter	0.299	0.874	0.973	0.479
Feel supported by family	0.211	0.759	0.958	0.780
Would turn to family if needed support	0.365	0.944	0.991	0.851
Argue with mother	0.576	0.440	0.092	0.000
Out past 9pm without parents knowing whereabouts	0.293	0.217	0.039	0.136

Table 89 indicates that the 4-class model was relatively successful in categorising children in classes 1 (neglectful), 2 (permissive) and 3 (authoritative), but struggled to identify children in class 4 (authoritarian). Based on the conditional probabilities for each class, 26.9% of children in class 4 (authoritarian) might have been classified as being in class 2 (permissive). Other than this, the main 'grey area' was between classes 2 (permissive) and 3 (authoritative): 20.8% of children in class 2 might have been classified as being in class 3, while 22.1% of children in class 3 might have been classified as being in class 2. As explained in the methods section for this chapter, this potential overlap between classes is retained in the regression and structural equation model analyses that use latent class predicted probabilities rather than expected class membership.

Table 89: Classification matrix of class membership for child-reported relationship with mother

Predicted class	Class 1	2	3	4
1	**0.767**	0.157	0.003	0.073
2	0.046	**0.692**	0.208	0.055
3	0.001	0.221	**0.719**	0.058
4	0.101	0.269	0.114	**0.516**

Latent Class Analysis: Child-reported relationship with father

A similar approach can be taken to the child-reported measures of the father-child relationship. In line with the child-reported mother-child relationship, a 4-latent class model fitted the data adequately. Although Table 90 indicates that the 3-class model had a lower BIC than the 4-class model, a combination of theoretical reasons and a lower AIC for the 4-class model means that is the preferred model.

Table 90: Model fit for latent class models of child-reported relationship with father

Model	N	Log likelihood	df	AIC	BIC
One class	21,467	-47825.13	5	95660.25	95700.12
Two classes	21,467	-46234.49	11	92490.99	92578.70
Three classes	21,467	-46181.70	17	92397.40	92532.96
Four classes	21,467	-46154.3	23	92354.60	92538.01

Table 91 and Figure 25 show that latent class 4 identifies children who scored highest for the closeness or 'responsiveness' of the parent-child relationship, followed by latent class 1. Children in these two classes had the highest probability of talking to their fathers about things that matter (82.6% and 65.9%), feeling supported by family (95.4% and 77.7%) and turning to family members if they needed support (99.7% and 92.4%). However, whilst children in latent class 4 had low probabilities of arguing with their father (9.3%) or being out past 9pm without parents knowing their whereabouts (5.5%), children in class 1 had comparatively high probabilities for these behaviours (56.6% and 24.8% respectively). For this reason, classes 4 and 1 were felt to identify 'authoritative' and 'permissive' father-child relationships respectively. With the lowest levels of parental warmth, latent class 3 was felt to identify a 'neglectful' father-child relationship: in this class, children had low probabilities of talking with their fathers about things that matter (19.8%), feeling supported by family (16.3%), and turning to family if they needed support (46.8%), but comparatively high levels of arguments (38.2%) and being out late (28.0%). Although children in latent class 2 had

relatively high levels of family support, they had lower levels of talking with father (45.3%)

than children in the authoritative and permissive classes, no arguments (0.0%), and

comparatively low levels of being out late (17.5%). The combination of lower warmth and

high parental control means that this class is categorised as being authoritarian.

Table 91: Predicted probabilities of child-reported relationship with father

Class	1 'Permissive'	2 'Authoritarian'	3 Neglectful'	4 'Authoritative'
Relative size	0.178	0.239	0.091	0.491
Talk with father about things that matter	0.659	0.453	0.198	0.826
Feel supported by family	0.777	0.740	0.163	0.954
Would turn to family if needed support	0.924	0.866	0.468	0.997
Argue with father	0.566	0.000	0.382	0.093
Out past 9pm without parents knowing whereabouts	0.248	0.175	0.280	0.055

The typologies of child-reported relationships with mothers and fathers are very similar,

likely due, in large part, to three of the variables being common to both models. However,

there were some interesting differences, especially in respect of the permissive typology.

Firstly, in line with the descriptive statistics, children had notably lower levels of talking with

father across three of the four relationship typologies. Secondly, in respect of the permissive

typology, the predicted probability of talking regularly with mothers (87.4%) was notably

higher than the equivalent figure for fathers (65.9%), while the probability of regular

arguments with mothers (44.0%) was lower than the figure for fathers (56.6%). Furthermore,

the estimated proportion of children with a permissive mother-child relationship (38.3%) was

more than twice as high as the estimated proportion of children with a permissive father-child

typology (17.8%). In parallel, the estimated proportion of children with an authoritarian

relationship was more than twice as high for fathers (23.9%) compared to mothers (10.1%).

These differences will be borne in mind in the subsequent analysis.

Figure 25: Predicted probabilities of child-reported relationship with father (95% CIs)
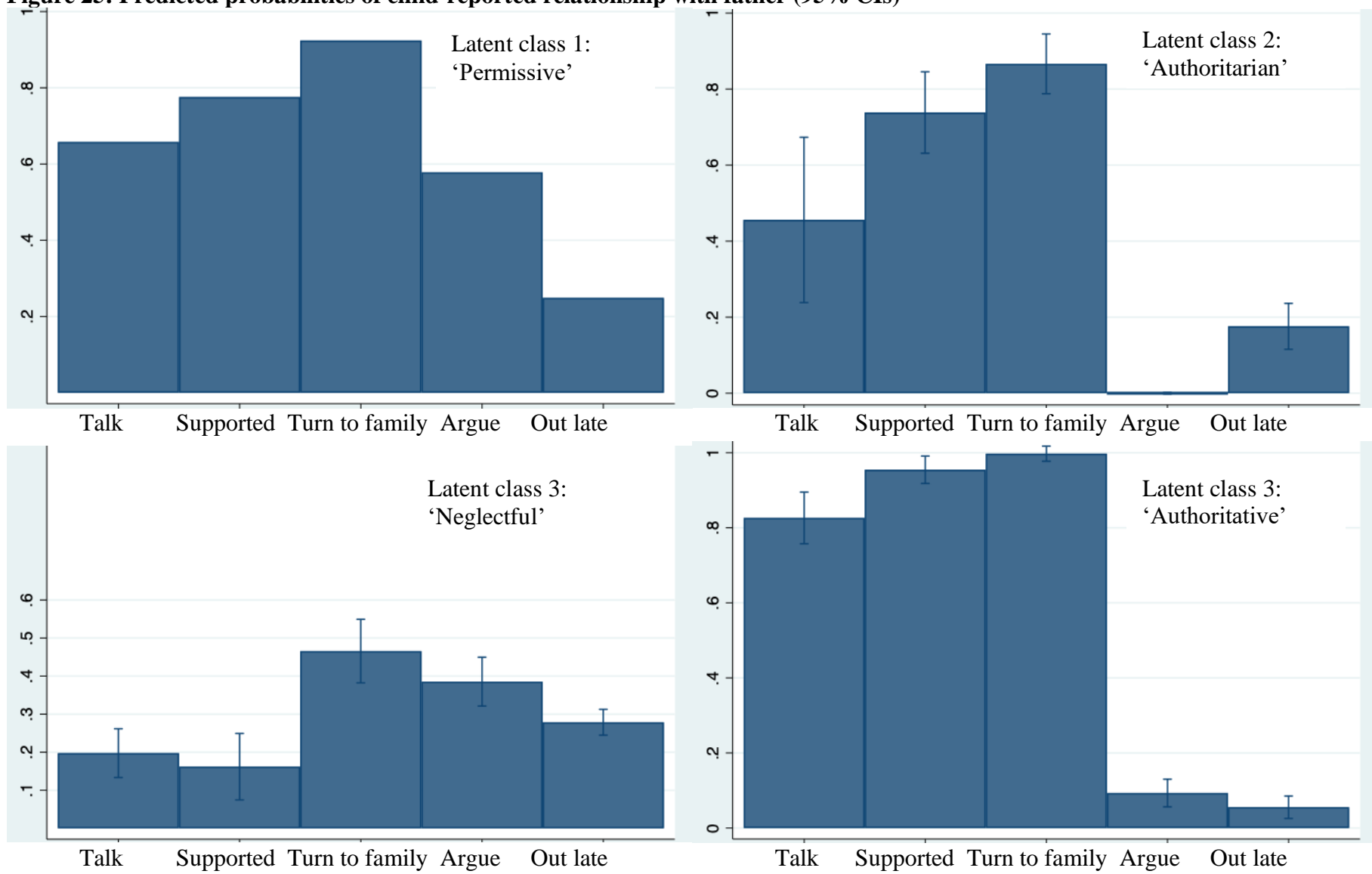
Table 92 indicates that the 4-class father-child model was relatively successful in categorising children in three of the classes but struggled to assign children to class 2 (authoritarian). In class 2, 16.2% of children might have been classified as class 4 (authoritative), 15.9% of children might have been classified as class 3 (neglectful) and 11.6% might have been classified as class 1 (permissive). The other main area of uncertainty was that almost a third (32.1%) of children categorised as being in class 1 (permissive) might have been classified as being in class 4 (authoritative).

Table 92: Classification matrix of class membership for child-reported relationship with father

Predicted class	Class 1	2	3	4
1	**0.634**	0.001	0.045	0.321
2	0.147	**0.532**	0.159	0.162
3	0.163	0.114	**0.716**	0.006
4	0.084	0.224	0.006	**0.687**

Factors associated with child-reported relationship with parents

Figure 26 shows the results of simple multinomial logistic regressions of age, sex and latent class membership for both the mother- and father-child relationships. There were interesting differences in the age of children in different classes. Younger children were more likely than older children to have an authoritative relationship, characterised by higher levels of parental monitoring and warmth, while older children were more likely than younger ones to have an authoritarian or neglectful relationship, with lower levels of parental warmth and supervision. This adds an additional layer of insight to Chan and Koo's (2011) analysis, which did not examine whether age predicted class membership. Children are known to be granted greater autonomy with age, especially as they make the transition from primary school to secondary school. Moreover, the single item measuring parental supervision here - how often children are out past 9pm without parents know their whereabouts - is likely to have rather different

explanations and meanings for a 10-year-old, for whom this level of autonomy might be considered neglectful, and a 15-year-old, for whom *not* experiencing this type of autonomy might be considered over-protective. This will be explored in greater detail in subsequent analysis.

Figure 26: Predicted probabilities of child-reported relationships with mother and father by age and sex

Child-reported relationship with mother by age and sex
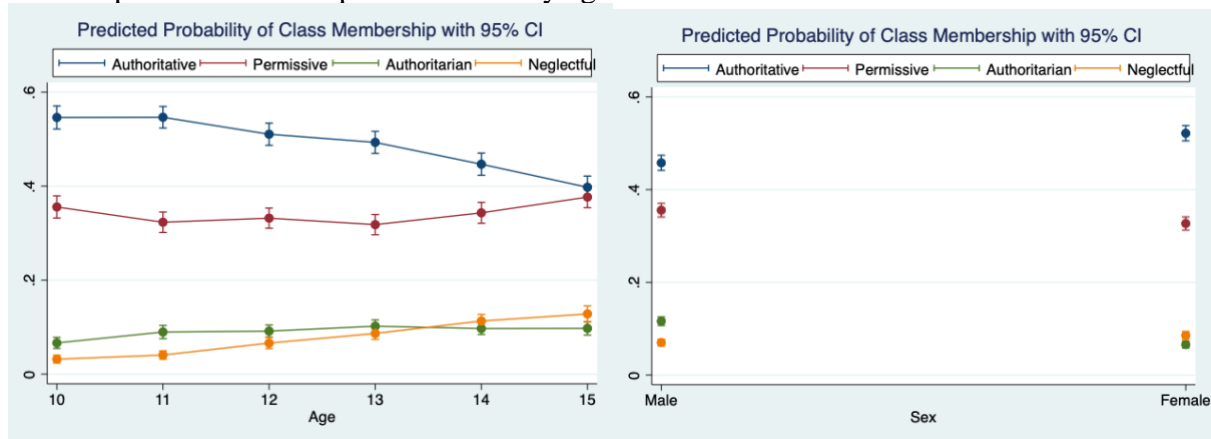
Child-reported father-child relationship by age and sex
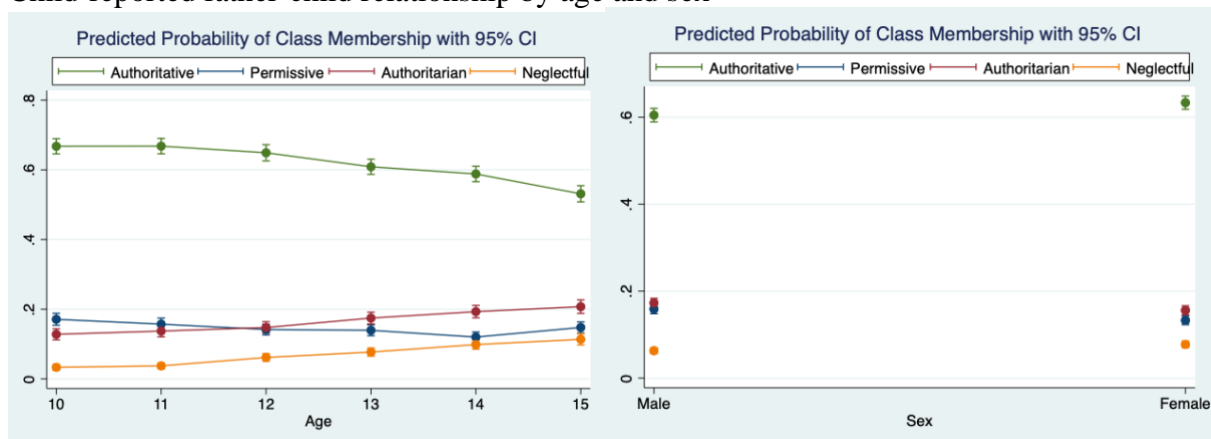
The sex of the child also predicted class membership, with girls more likely to have an authoritative relationship, typified by high levels of parental warmth and supervision, and boys more likely to have a permissive relationship, with high parental warmth but lower levels of monitoring. Furthermore, boys were more likely to experience an authoritarian mother-child relationship, typified by less maternal warmth alongside moderate levels of

supervision, and girls were slightly more likely to experience a neglectful father-child relationship. Together these findings indicate a pattern of lower parental monitoring of boys by both mothers and fathers, higher maternal warmth towards girls and evidence of lower levels of any kind of interaction for some fathers and daughters.

In addition, to explore other factors correlated with relationship typologies for the child-reported relationships with mothers and fathers, a series of linear regressions were carried out with the predicted posterior probabilities of class membership regressed onto children's characteristics, family structures and socioeconomic circumstances. Table 93 shows the results of these regressions for the child-reported relationship with mother. The age and sex patterns described above remained after controlling for a range of child, family and socioeconomic factors. In terms of ethnicity, children with a Mixed ethnic background had a lower likelihood of an authoritative - and higher likelihood of a neglectful - mother-child relationship. In contrast, children of Bangladeshi ethnicity were less likely to have a permissive maternal relationship. These ethnicity differences in the parent-child relationship typologies may help to explain the higher SWB of children of Bangladeshi ethnicity and the lower SWB of children of Mixed ethnicity.

Table 93: Linear regressions of child-mother relationship typologies and child, family & socioeconomic characteristics

Variable (reference category in brackets)	Predicted posterior probabilities			
	Authoritative latent class	Permissive latent class	Authoritarian latent class	Neglectful latent class
Age	-0.02***	0.00	0.00***	0.02***
Female	0.04***	-0.02***	-0.02***	0.01
Ethnicity (White)				
Mixed	-0.04**	0.00	0.01	0.03*
Indian	-0.01	-0.02	0.01	0.02
Pakistani	0.02	-0.01	0.00	-0.00
Bangladeshi	-0.00	-0.04**	0.02	0.03
Black Caribbean	-0.02	0.02	-0.01	0.02
Black African	0.01	-0.02	-0.00	0.00
Other	-0.00	-0.00	0.01	0.00
Family structure (two biological-parents)				
Step-parent formal	-0.06***	0.03**	0.00	0.02**
Step-parent informal	-0.10***	0.07***	0.00	0.03
Single-parent alone (SPA)	-0.05***	0.03***	-0.01	0.03***
Single-parent extended (SPE)	-0.11***	0.06**	0.01	0.04
Non-biological-parent	-0.12***	0.03	0.04**	0.05*
Complex sibship	-0.04**	0.02	0.00	0.02
Income quintiles (highest)				
1st (lowest) quintile	-0.03*	0.00	0.01*	0.01
2nd quintile	-0.02	-0.00	0.01	0.01
3rd quintile	-0.00	-0.00	-0.00	0.01
4th quintile	0.01	-0.01	0.00	-0.00
Subjective financial difficulties	-0.02	0.00	0.00	0.01
Parental education: degree	0.03***	-0.02**	-0.00	-0.01
Waves	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11
N (unweighted) cases	20997	20997	20997	20997
F	25.12***	6.86***	5.46***	12.08***
	(29, 2512)	(29, 2512)	(29, 2512)	(29, 2512)
R^2	0.05	0.02	0.01	0.03

* p<0.05 ** p<0.01 *** p<0.001

In relation to family structure, children with non-full siblings and in all family types other than a two biological-parent family had a lower likelihood of an authoritative mother-child relationship and, in parallel, a higher likelihood of a neglectful or permissive mother-child relationship typology typified by lower levels of supervision (although some of the coefficients did not reach statistical significance, likely due to the small sample sizes). These

findings support the hypothesis that family relationships quality may be an important mediator of associations between family structure and SWB. This will be explored further in the structural equation models.

Apart from parental education, which was associated with a higher likelihood of an authoritative - and lower likelihood of a permissive - relationship, and being in the lowest income quintile, which was associated with a lower likelihood of an authoritative relationship, none of the socioeconomic circumstances were significant correlates of the mother-child relationship. These findings provide tentative evidence that class differences in parenting are more strongly influenced by parental education than by financial factors, and offer some support for Lareau's thesis of 'concerted cultivation' but less convincing corroboration of the Family Stress Model. This will be explored in more detail in the structural equation models.

A final observation is that there were marked differences in explained variation in the different models. Children's characteristics, family structures and socioeconomic circumstances explained the most variation in the authoritative and neglectful models (R^2 = 0.05 and 0.03) and the least variation in the permissive and authoritarian models (R^2 = 0.02 and 0.01).

Table 94 shows that there were some similar findings for the child-reported relationship with fathers as well as notable differences, including that a much greater proportion of variation was explained in the model considering an authoritarian relationship with fathers (R^2 = 0.05) compared to mothers (R^2 = 0.01). In terms of family structure, whereas children in alternative family types were *more* likely to have a permissive mother-child relationship, with high

maternal warmth but low supervision, they were *less* likely to have a permissive father-child relationship and more likely to have an authoritarian typology, characterised by low paternal warmth. This makes intuitive sense given that a warm, supportive father-child relationship is likely to be harder to achieve in a separated family when children usually spend most of their time with their mother, even if they experienced shared parental care (Haux and Luthra, 2019).

Table 94: Linear regressions of child-father relationship typologies and child, family & socioeconomic characteristics

Variable (reference category in brackets)	Predicted posterior probabilities			
	Authoritative latent class	Permissive latent class	Authoritarian latent class	Neglectful latent class
Age	-0.02***	0.00	0.01***	0.02***
Female	0.01*	-0.02***	-0.00	0.01**
Ethnicity (White)				
Mixed	-0.03*	-0.02*	0.02*	0.03*
Indian	-0.02	-0.03**	0.03**	0.02
Pakistani	0.01	-0.03**	0.02*	0.00
Bangladeshi	-0.04	-0.06***	0.06***	0.03
Black Caribbean	-0.06*	-0.02	0.04*	0.03
Black African	-0.02	-0.03***	0.05**	0.01
Other	-0.01	-0.00	0.02	-0.00
Family structure (two biological-parents)				
Step-parent formal	-0.08***	-0.00	0.04***	0.03***
Step-parent informal	-0.09***	-0.05***	0.10***	0.04*
Single-parent alone (SPA)	-0.08***	-0.03***	0.08***	0.03***
Single-parent extended (SPE)	-0.11***	-0.00	0.08***	0.03
Non-biological-parent	-0.10***	0.01	0.07***	0.02
Complex sibship	-0.03**	0.01	0.01	0.01
Income quintiles (highest)				
1st (lowest) quintile	-0.04**	0.01	0.00	0.02*
2nd quintile	-0.03*	0.01	0.01	0.02*
3rd quintile	-0.01	0.00	0.00	0.01
4th quintile	0.00	-0.00	0.00	-0.00
Subjective financial difficulties	-0.02*	0.01	0.00	0.01*
Parental education: degree	0.02***	-0.02**	-0.00	-0.01
Waves	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11
N (unweighted) cases	20997	20997	20997	20997
F	29.81*** (29, 2512)	7.72**8 (29, 2512)	20.50*** (29, 2512)	13.30*** (29, 2512)
R^2	0.07	0.02	0.05	0.04

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

In relation to ethnicity, in addition to those with a Mixed ethnic background, children of Black Caribbean ethnicity had a higher likelihood of an authoritarian or neglectful father-child relationship, characterised by lower levels of paternal warmth and support, and a lower likelihood of an authoritative or permissive relationship. Children of Indian, Pakistani, Bangladeshi and Black African ethnicity also had a higher likelihood of an authoritarian relationship, typified by high levels of parental supervision and no arguments, and lower likelihood of a permissive relationship.

Furthermore, socioeconomic circumstances appeared to be slightly stronger correlates of the father-child relationship, in keeping with the Family Stress Model. Children in the two lowest income quintiles were less likely to have an authoritative father-child relationship and more likely to have a neglectful relationship. An authoritative father-child relationship was also less likely for children in households with subjective financial difficulties and lower parental education. These different patterns will be considered in subsequent analysis.

Table 95 summarises the relative size, characteristics and correlates of each typology identified by the Latent Class Analysis of the child-reported relationship with mothers and fathers.

Table 95: Relative size, characteristics and correlates of child-reported relationships with mothers and fathers

Relative size	Typology	Characterised by	Characteristics associated with being in this latent class	Characteristics associated with not being in this latent class
Child-reported relationship with mother				
43.0%	Authoritative	High warmth and supervision, few arguments	Younger age; being female; two biological-parent family; higher parental education	Mixed ethnicity; non-full siblings; all alternative family structures; lowest income quintile
38.3%	Permissive	High warmth, frequent arguments, low supervision	Being male; step-parent and single-parent family; lower parental education	Bangladeshi ethnicity
10.1%	Authoritarian	Moderate warmth and supervision, no arguments	Older age; being male; non-biological parent family; lowest income quintile	
8.6%	Neglectful	Low warmth, frequent arguments, low supervision	Older age; Mixed ethnicity; formal step-parent, SPA and non-biological parent family	
Child-reported relationship with father				
49.1%	Authoritative	High warmth and supervision, few arguments	Younger age; being female; two-biological parent family; higher parental education	Mixed and Black Caribbean ethnicity; all alternative family structures; complex sibship; lowest two income quintiles; subjective financial difficulties
17.8%	Permissive	Moderate warmth, frequent arguments, low supervision	Being male; lower parental education, two-biological parent family	Mixed, Indian, Pakistani, Bangladesh and Black African ethnicity
23.9%	Authoritarian	Low warmth, no arguments, some supervision	Older age, Mixed, Indian, Pakistani, Bangladeshi, Black Caribbean and Black African ethnicity; all alternative family structures	
9.1%	Neglectful	Low warmth, frequent arguments, low supervision	Older age; being female; Mixed ethnicity; step-parent and SPA family; lowest two income quintiles, subjective financial difficulties	

Parents' perspectives on the parent-child relationship

This chapter now moves onto consider the extent to which parental perspectives on the parent-child relationship tally with children's perspectives, and are related to children's socioeconomic circumstances, family structure and SWB. Descriptive and bivariate analysis of the mother-reported family relationship variables and children's SWB are shown in Table 96. As can be seen, few mothers reported never or seldom praising (1.3%) or cuddling (2.4%) their children or slapping them sometimes (3.9%) or very often (0.6%). In terms of bivariate relationships with SWB, four mother-reported variables were clearly related: children had lower 4-domain SWB scores and were more likely to have low SWB if their mother rarely talked to them about important matters, argued with or shouted at them regularly, or argued with their partner (probably the child's father or stepfather) regularly. However, although all except the physical punishment measure were related to 4-domain SWB scores, these differences were small and there was no clear relationship with low SWB.

Furthermore, the small group of children whose mothers reported never praising or cuddling them had a *lower* likelihood of low SWB and *higher* 4-domain SWB scores than children who were praised or cuddled very often. It is not clear why maternal behaviours such as never cuddling or praising children would be associated with higher SWB. One potential explanation is that this is a highly unusual set of children for whom unobserved child or family factors are confounding the relationship between maternal behaviours and SWB. Another possibility is that these differences reflect cultural differences in parenting that do not translate into differences in SWB. Indeed, analysis of the characteristics of this group indicates that children are much more likely to be of Bangladeshi or Black Caribbean ethnicity, and also likely to experience low levels of maternal physical affection. Latent class analysis of these variables will help to establish whether there are patterns of maternal

behaviours that are related to children's SWB, and whether ethnicity is associated with typologies of parenting in ways that can help to explain these findings.

Descriptive and bivariate analysis of the father-reported family relationship variables and children's SWB are shown in Table 97. Similar to mothers, few fathers rarely praised (2.9%) or cuddled (8.3%) their children, or slapped their children sometimes (3.6%) or very often (0.5%). However, as with the child-reported questions, there were lower levels of father-child interactions compared to mother-child interactions: fathers were markedly less likely than mothers to talk, praise or cuddle their children frequently, and less likely to shout at, strictly enforce rules or argue with their children. The same was not true of physical punishment, for which mothers and fathers reported similarly low levels. In terms of bivariate relationships with SWB, there were some significant associations. Similar to the maternal behaviours, children had lower 4-domain SWB scores and were more likely to have low SWB if their father rarely talked to them, argued with them regularly, did not strictly enforce rules and argued with their partner (probably the child's mother or stepmother) regularly. Like the maternal relationship, children whose fathers never praised or cuddled them had higher 4-domain SWB scores and a lower likelihood of low overall SWB than children who were praised or cuddled more often. Finally, the relationship between physical punishment and SWB was non-significant for both mothers and fathers.

Table 96: Descriptive and bivariate analysis of mother-reported family relationship variables and children's SWB

Mother-reported relationship variables	% missing data	%	%	% with low SWB	Mean 4-domain SWB score
Talk to child about important matters	7.4			**	***
Hardly ever		2.8		18.1	18.8
Less than once a week		8.4	37.4	14.3	19.2
More than once a week		26.2		14.3	19.3
Most days		62.6	62.6	12.4	19.8
Praise child	7.7			NS	***
Never		0.4		9.3	20.7
Seldom		0.9	17.3	11.3	18.9
Sometimes		16.0		15.1	19.1
Very often		82.7	82.7	12.9	19.7
Cuddle child	7.7			NS	***
Never		0.8		11.8	19.4
Seldom		1.6	16.9	15.6	18.4
Sometimes		13.5		15.0	19.0
Very often		84.1	84.1	12.9	19.7
Enforce rules (waves 3, 5, 7, 9 & 11)	7.2			NS	***
Strictly enforced		30.8	30.8	12.2	19.7
Not very strictly enforced		36.4	69.2	14.7	19.4
It varies		32.9		13.8	19.5
Argue with child	7.4			***	***
Hardly ever		25.4		9.5	20.1
Less than once a week		23.6	75.3	11.5	19.6
More than once a week		26.3		14.3	19.4
Most days		24.7	24.7	17.3	19.2
Slap or spank child	7.7			NS	NS
Never		80.6	80.6	13.0	19.6
Seldom		14.9		14.4	19.5
Sometimes		3.9	19.4	13.1	19.6
Very often		0.6		11.6	19.8
Shout or yell at child	7.7			*	***
Never		4.7		9.9	19.9
Seldom		19.2	78.1	12.5	19.6
Sometimes		54.2		13.1	19.6
Very often		21.9	21.9	14.9	19.3
Argue with partner	32.3			*	***
Never		7.5		12.2	19.9
Rarely		41.2	91.0	10.6	19.8
Occasionally		43.9		13.0	19.7
More often than not		4.7		13.7	19.7
Most of the time		1.9	9.0	19.4	19.2
All of the time		0.6		18.9	18.8

Table 97: Descriptive and bivariate analysis of father-reported family relationship variables and children's SWB

Father-reported relationship variables	% missing data	%	%	% with low SWB	Mean 4-domain SWB score
Talk to child about important matters	39.9			**	***
Hardly ever		10.3		14.0	19.2
Less than once a week		18.7	62.2	14.7	19.3
More than once a week		33.3		11.8	19.7
Most days		37.8	37.8	10.6	20.1
Praise child	40.0			**	***
Never		0.7		11.7	19.3
Seldom		2.2	33.9	17.7	19.3
Sometimes		31.1		13.8	19.4
Very often		66.1	66.1	11.2	19.9
Cuddle child	40.0			*	***
Never		2.5		12.1	19.4
Seldom		5.8	35.0	14.3	19.1
Sometimes		26.7		13.5	19.4
Very often		65.0	65.0	11.4	19.9
Enforce rules (waves 3, 5, 7, 9 & 11)	38.4			*	***
Strictly enforced		25.1	25.1	10.2	20.0
Not very strictly enforced		43.5	74.9	12.8	19.5
It varies		31.4		13.7	19.6
Argue with child	39.9			***	***
Hardly ever		30.0		9.2	20.1
Less than once a week		23.8	81.8	12.0	19.7
More than once a week		28.0		13.9	19.6
Most days		18.2	18.2	14.6	19.4
Slap or spank child	40.0			NS	NS
Never		81.3	81.3	12.0	19.7
Seldom		14.6		12.9	19.8
Sometimes		3.6	18.7	12.6	19.8
Very often		0.5		6.1	20.1
Shout or yell at child	40.0			*	***
Never		6.9		9.6	19.9
Seldom		24.4	83.7	10.9	19.8
Sometimes		52.3		12.3	19.7
Very often		16.3	16.3	14.4	19.4
Argue with partner	45.6			*	***
Never		7.5	92.8	12.2	19.9
Rarely		41.4		10.6	19.8
Occasionally		43.9		13.0	19.6
More often than not		4.7	7.2	13.7	19.7
Most of the time		1.9		19.4	19.2
All of the time		0.6		18.9	18.8

ᵃ Waves 3, 5, 7 & 9 only

Correspondence between children's and parents' perspectives

The next step is to explore the degree to which responses to similarly worded questions asked of children and parents are the same or different. It is already evident that, overall, a higher proportion of parents than children report frequent talking and arguing. Table 98 shows the correspondence between child-parent pairs, highlighting differences in perspective between children and their parents about the extent to which they talk and argue. About a third of child-parent pairs give the same response for arguments (35.4% of mother-child and 36.2% of father-child pairs) and talking to each other (39.5% of mother-child and 29.6% of father-child pairs). However, parents were more positive than children about how much they talk to each other (46.2% of mother-child and 49.8% of father-child pairs), while children were more positive than parents about how much they argue (50.6% of mother-child and 50.4% of father-child pairs). A less strict approach of assessing correspondence might be to say that a difference of one category between parent and child is a rough match (e.g. 'hardly ever' is broadly the same as 'less than once a week', 'less that once a week' is broadly the same as 'more than once a week', or 'more than once a week' is broadly the same as 'most days'). Taking this approach, there is much greater correspondence between child and adult perspectives. However, just under a quarter (22.7% of mother-child pairs in respect of talking) to a quarter (25.3% of father-child pairs in respect of talking) still disagree with each other in their responses.

Table 98: Cross-tabulation of child, mother and father reports of talking and arguing

	Mother-child talking	Father-child talking	Mother-child arguing	Father-child arguing
Parent more positive by 3 categories (%)	7.9	8.2	0.9	1.0
Parent more positive by 2 categories (%)	14.8	17.1	2.8	2.8
Parent more positive by 1 category (%)	23.5	24.5	10.3	9.6
Child and parent agree (%)	39.5	29.6	35.4	36.2
Child more positive by 1 category (%)	11.2	14.5	26.9	25.3
Child more positive by 2 categories (%)	2.6	4.7	15.6	17.9
Child more positive by 3 categories (%)	0.6	1.3	8.1	7.2
Unweighted N	19,655	12,685	19,520	12,653

Note: 'more positive' means more talking and fewer arguments

One potential explanation for this lack of correspondence is that the measures of parental perspectives – which are asked of parents about any or all of their children – do not accurately capture the relationship with the specific child interviewed. Dunn and colleagues (1990) have demonstrated that siblings are not always treated the same by parents, and that differential maternal behaviour is an important predictor of children's adjustment problems (Dunn, Stocker and Plomin, 1990). It is possible that parental responses about arguments and talking are inaccurate assessments of the relationship with the child in question, but accurate assessments of the relationship with one or more of the child's siblings. Another possibility is that children and parents perceive and interpret their interactions in different ways. Either way, divergent conclusions would be reached about relationship quality on the basis of children's and parents' reports, thus, it is important to examine which perspectives are most relevant to children's SWB.

Socioeconomic circumstances and parental relationships with children

Similar to the child-reported variables, bivariate associations between children's socioeconomic circumstances and the parent-reported measures of the parent-child relationship are examined. Table 99 demonstrates that there is a clear social gradient for the mother- and father-reported negative behaviours, with parents in higher income quintiles less likely to report arguing, slapping and shouting. There is also a clear social gradient for inter-parental conflict with about twice as many mothers (12.0%) and fathers (8.8%) in the lowest income quintile reporting frequent arguments compared to mothers (6.9%) and fathers (3.9%) in the highest income quintile. These findings provide evidence to support the Family Stress Model that children's relationships with parents - and interparental conflict – are plausible mediators of the association between socioeconomic circumstances and SWB.

By contrast, rule enforcement was negatively associated with household income, with higher income mothers more likely to say that they do not strictly enforce rules. Furthermore, there was no significant relationship between household income quintile and parents talking to their child, mothers praising their child and fathers cuddling their child. Indeed, although a non-significant association, talking infrequently was reported most often by mothers in the highest income quintile. This contrasts with equivalent analysis of the child-reported variables, which found a clear socioeconomic gradient for children talking to their parents, with children in the highest income quintile reporting the highest levels of talking with both mothers and fathers. This discrepancy between the child's and mother's perspectives on time spent talking may be explained by a lack of maternal time with children - since mothers in the top two quintiles were the most likely to be employed – or it may reflect maternal guilt about not spending enough time talking to children, which is likely to be felt most keenly by middle-class mothers. Despite shifts in expectations of 'involved fathering', it is still mothers who are assumed to take primary responsibility for meeting all of their children's physical

and emotional needs, even if they are in full-time employment (Braun, Vincent and Ball, 2011).

Table 99: Cross-tabulation of mother- and father-reported measures of family relationships and household income quintiles

Mother-reported parent-child relationship variables		Equivalised household income quintiles				
		% 1 (lowest)	% 2	% 3	% 4	% 5 (highest)
Talk to child about things that matter (< most days)	NS	36.8	37.7	36.0	37.6	40.4
Praise child (< very often)	NS	19.4	17.3	16.2	15.2	16.8
Cuddle child (< very often)	*	18.1	16.4	15.4	13.3	14.2
Enforce rules [a] (not very strictly or it varies)	**	28.0	30.3	32.2	31.6	36.8
Argue with child (more than once a week)	***	30.2	27.6	22.9	18.6	16.6
Slap or spank child (>never)	***	24.2	21.1	18.8	14.1	12.4
Shout or yell at child (>never)	***	24.8	24.3	19.2	18.6	19.8
Argue with partner (>occasionally)	**	12.0	9.9	8.1	7.5	6.9
Father-reported parent-child relationship variables		Equivalised household income quintiles				
		% 1 (lowest)	% 2	% 3	% 4	% 5 (highest)
Talk to child about things that matter (< most days)	NS	40.4	39.1	36.7	34.9	36.7
Praise child (< very often)	**	35.2	37.0	34.8	28.9	31.1
Cuddle child (< very often)	NS	34.6	35.8	36.4	34.1	33.1
Enforce rules [a] (not very strictly or it varies)	NS	25.8	23.5	23.1	26.4	29.1
Argue with child (more than once a week)	***	21.7	21.7	17.7	13.7	12.2
Slap or spank child (>never)	***	23.5	21.0	19.1	14.3	11.6
Shout or yell at child (>never)	**	19.2	17.7	16.9	13.2	12.2
Argue with partner (>occasionally)	*	8.8	8.3	7.1	6.1	3.9

[a] Waves 3, 5, 7 & 9 only

Latent Class Analysis

Similar to the child-reported questions, all responses to the parent-reported questions about parent-child relationship quality from waves 1, 3, 5, 7, 9 and 11 were included in the LCA unless parents did not answer *any* of the questions. As a result, for the mother-child analysis,

the analytical sample is 19,950 observations relating to 12,003 children, while for the father-child analysis, the analytical sample is 12,981 observations relating to 7,909 children.

Analysis of non-response for these two different analytical samples indicates that children were more likely to be missing from both samples if they were living in households with lower parental education, and in an informal step-parent, single-parent or non-biological parent family, which makes sense given that parents are less likely to be interviewed in the UKHLS if they are not co-resident with their child. However, for the mother-reported sample, children were more likely to be missing if they were older (i.e. aged 13, 14 or 15) and of Pakistani or Bangladeshi ethnicity, while for the father-reported sample, children were more likely to be missing if they were of Pakistani, Black African, Black Caribbean or Mixed ethnicity. As can be seen in Table 100 below, children missing from both samples had a higher likelihood of low overall SWB and lower 4-domain scores.

Table 100: Inclusion/exclusion from analytical sample and SWB

	Low overall SWB	4-domain score
Mother-child sample	**	**
Missing	15.2	19.4
Included	12.4	19.7
Father-child sample	***	***
Missing	14.2	19.5
Included	11.5	19.9

In terms of the dimensions of parenting to which the questions relate, the first three shown in Table 102 and Table 105 - about talking, cuddling and praising the child - could be said to measure the dimension of 'responsiveness' or closeness in the parent-child relationship. The next three items - about arguing with, yelling at and slapping the child - would seem to measure the dimension of 'harsh discipline'. Similar to the child's perspective of the parent-child relationship, there is only one indicator of parental supervision - about enforcing rules -

meaning that a four-typology model of parenting may be hard to discern. Chan and Koo (2011) came to a similar conclusion when analysing data on the parent-child relationship in the BHPS, in which they identified three latent classes. They observed that 'a larger sample and/or further indicator variables' might allow for the detection of a fourth latent class. However, their analysis was able to draw on three measures of parental monitoring, compared to the single item about rule enforcement included here.

Mother-reported relationship with child(ren)

Indeed, the results of the LCA reveal that a 3-latent class model fitted the data well for the mother-reported measures. Latent class 2, which appears to capture the concept of an authoritative parent-child relationship was the largest in relative size, representing 60.8% of the sample. Latent classes 1 and 3 represented 17.2% and 22.0% of the sample respectively.

Table 101: Model fit for latent class models of mother-reported relationship with child

Model	N	Log likelihood	df	AIC	BIC
One class	19950	-73573.09	7	147160.20	147215.50
Two classes	19950	-71569.74	15	143169.50	143288.00
Three classes	19950	-70078.01	23	140202.00	140383.70

If the measure of rule enforcement were used to distinguish stricter styles of parenting from more permissive ones, then Figure 27 suggests that class 3 (33.1%) would be considered authoritarian, while class 1 would be considered permissive (20.1%). However, these differences in rule enforcement were modest, thus, authoritarian and permissive typologies of parenting were distinguished on the basis of the measures of responsiveness. Classes 2 and 3 both identify relationships that were high in warmth: mothers in these classes had a similarly high probability of talking with their children about important matters (67.9% and 77.1%), cuddling (92.7% and 91.8%) and praising them (94.9% and 83.6%). In contrast, class 1 identifies relationships that were low in warmth, with predicted probabilities of only 31.5%

for talking with children, 36.1% for cuddling children and 28.7% for praising children. Thus, class 1 was felt to represent an authoritarian or neglectful mother-child relationship, which was low in warmth, and class 3 a permissive mother-child relationship. In terms of the measures of harsh discipline, mothers in latent class 2 had the lowest probabilities of arguing with (7.4%), yelling at (8.3%) or slapping their child (12.3%), while mothers in class 1 had moderately high probabilities for these behaviours (20.4%, 19.2% and 25.3% respectively) and mothers in class 3 had the highest probabilities (75.4%, 68.5% and 43.5% respectively).

Table 102: Predicted probabilities of the mother-reported relationship with child

Class	1 Authoritarian or neglectful	2 Authoritative	3 Permissive
Relative size	0.172	0.608	0.220
Talk with child	0.315	0.679	0.771
Cuddle child	0.361	0.927	0.918
Praise child	0.287	0.949	0.836
Argue with child	0.204	0.074	0.754
Yell at child	0.192	0.083	0.685
Slap child	0.253	0.123	0.435
Enforce rules	0.201	0.336	0.331

Figure 27: Predicted probabilities of mother-reported relationship with child (95% CIs)

Latent class 1: 'Authoritarian' or 'neglectful'   Latent class 2: 'Authoritative'

Latent class 3: 'Permissive'
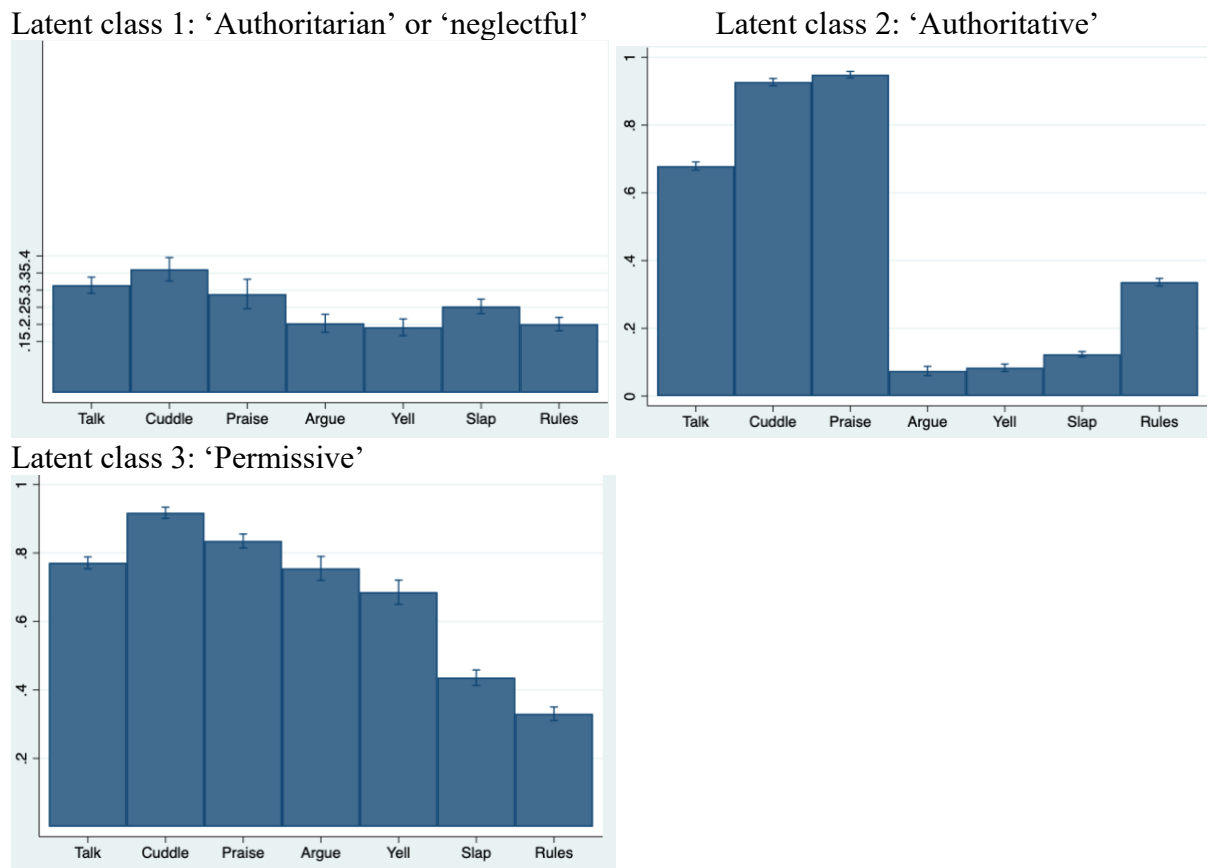
Table 103 indicates that the 3-class model was relatively successful in categorising children in classes 1, 2 and 3. The main area of overlap was between classes 1 (authoritarian/neglectful) and 2 (authoritative): 16.5% of children in class 1 might have been classified as class 2.

Table 103: Classification matrix of class membership for mother-reported relationship with child

Predicted class	Class 1	2	3
1	**0.781**	0.165	0.054
2	0.050	**0.862**	0.088
3	0.063	0.094	**0.843**

Father-reported relationship with child(ren)

A 3-latent class model also fitted the data well for the father-reported relationship, with a similar pattern of parenting behaviours as for the mother-reported variables. Latent class 2 appears to identify an authoritative father-child relationship and was the largest in relative size, representing 52.4% of the sample. Latent classes 1 and 3 represented 31.2% and 16.5% of the sample and appear to represent authoritarian/neglectful and permissive parenting typologies respectively.

Table 104: Model fit for latent class models of father-reported relationship with child

Model	N	Log likelihood	df	AIC	BIC
One class	12981	-49481.87	7	98977.74	99030.04
Two classes	12981	-47996.74	15	96023.49	96135.55
Three classes	12981	-46934.16	23	93914.31	94086.15

Similar to the mother-reported relationship, the differences in rule enforcement were modest, with the lowest predicted probability for latent class 1 (18.2%), followed by latent class 3 (23.2%) and the highest probability for latent class 2 (30.6%). Thus, although levels of responsiveness were notably lower amongst fathers than mothers, authoritarian/neglectful and permissive father-child relationships were identified on the basis of relationship warmth, just as for mothers. Fathers in classes 2 and 3 had the highest probabilities of talking with their children about important matters (50.1% and 50.3%), cuddling (87.6% and 71.6%) and praising them (89.7% and 61.3%). In contrast, fathers in class 1 had much lower predicted probabilities for these measures (talking: 14.3%, cuddling: 21.3% and praising: 27.0%). Thus, class 1 was felt to represent an authoritarian/neglectful father-child relationship, and class 3 a permissive father-child relationship.

Table 105: Predicted probabilities of the father-reported relationship with child

Class	1 Authoritarian / neglectful	2 Authoritative	3 Permissive
Relative size	0.312	0.524	0.165
Talk with child	0.143	0.501	0.503
Cuddle child	0.213	0.876	0.716
Praise child	0.270	0.897	0.613
Argue with child	0.094	0.060	0.722
Yell at child	0.072	0.057	0.691
Slap child	0.154	0.147	0.451
Enforce rules	0.182	0.306	0.232

Figure 28: Predicted probabilities of father-reported relationship with child (95% CIs)

Latent class 1: 'Authoritarian' or 'neglectful'   Latent class 2: 'Authoritative'

Latent class 3: 'Permissive'
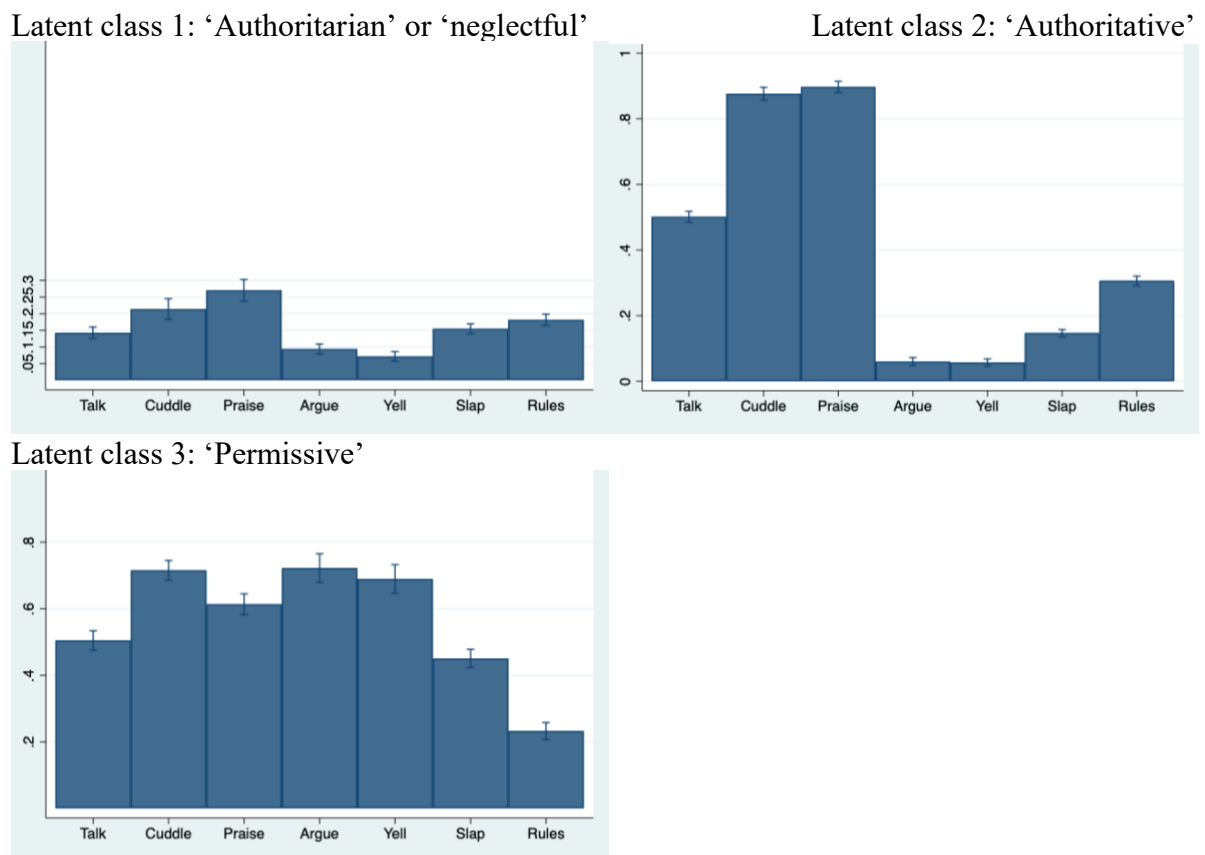
In relation to harsh discipline, the three latent classes identify similar patterns to mothers, but with slightly lower levels overall. Fathers in latent class 1 and 2 had similarly low

probabilities of arguing with (9.4% and 6.0%), yelling at (7.2% and 5.7%) or slapping their child (15.4% and 14.7%), while fathers in class 3 had high probabilities for these behaviours (72.2%, 69.1% and 45.1% respectively).

Table 106 indicates relatively high levels of success in categorising children in classes 1, 2 and 3. Similar to the mother-reported relationship, the main 'grey area' was between classes 1 (authoritarian/neglectful) and 2 (authoritative): 16.4% of children in class 1 might have been classified as class 2.

Table 106: Classification matrix of class membership for father-reported relationship with child

Predicted class	Class 1	2	3
1	**0.787**	0.164	0.048
2	0.069	**0.879**	0.051
3	0.072	0.112	**0.816**

Factors associated with parent-reported relationship typologies

As with the child-reported relationships, a final step in the analysis was to explore the factors predicting latent class membership through a series of linear regressions. Table 107 shows the results of these regressions for mother- and father-reported relationships with children. There were similar patterns for age, sex and socioeconomic factors, but like the child-reported measures there were different patterns of associations between ethnicity, family structure and the mother- and father-reported relationships. It is important to highlight again that the parent-reported questions relate to all children within the household and not to the particular child whose characteristics are shown, thus, it is debatable as to whether it is meaningful to examine the age and sex of the child as a predictor of class membership. Nonetheless, there were similar patterns for both the mother- and father-reported relationships in respect of age and sex, with older children and boys more likely to

experience an authoritarian/neglectful relationship, characterised by lower levels of warmth, younger children and girls more likely to experience an authoritative relationship, identified by higher levels of warmth, and younger children and boys more likely to experience a permissive relationship, with high levels of warmth but also high conflict.

Lower parental education, being in the lowest two income quintiles and subjective financial difficulties predicted a higher likelihood of a permissive relationship with both mother and father – typified by the highest levels of verbal conflict and physical punishment - and a lower likelihood of an authoritative relationship. This is in line with quantitative and ethnographic research showing higher levels of physical punishment amongst low-income families (Lareau, 2011; Hashima and Amato, 1994). Children in all non-White ethnic groups were more likely to experience an authoritarian mother-child relationship (although the association for Black African children was not significant), and less likely to experience an authoritative mother-child relationship (although only the associations for Mixed, Pakistani and Black Caribbean children were significant). A permissive mother-child relationship was less likely for Pakistani and Bangladeshi children. Bangladeshi children were also less likely to experience a permissive father-child relationship, as were children of Black Caribbean and Black African ethnicity.

There were only a few associations with family structure. Children in a SPA family were more likely to have an authoritarian relationship with their mother, while children in an informal step-parent family were more likely to have an authoritarian relationship with their father. Meanwhile, complex sibship was associated with a greater likelihood of a permissive mother-child relationship and a lower likelihood of an authoritarian father-child relationship.

Table 107: Linear regressions of mother- and father-reported relationship typologies and child, family & socioeconomic characteristics

	Mother-reported relationship with child [a]			Father-reported relationship with child [a]		
	Authoritarian / Neglectful	Authoritative	Permissive	Authoritarian / Neglectful	Authoritative	Permissive
Age	0.02***	-0.00*	-0.02***	0.04***	-0.02***	-0.01***
Female	-0.02**	0.03**	-0.01	-0.02	0.04**	-0.02*
Ethnicity (White)						
Mixed	0.06*	-0.07**	0.01	-0.05	0.05	0.00
Indian	0.06**	-0.06	-0.00	0.08*	-0.06	-0.02
Pakistani	0.13***	-0.08**	-0.04*	0.07*	-0.04	-0.02
Bangladeshi	0.15***	-0.07	-0.08**	0.08	-0.01	-0.08*
Black Caribbean	0.06*	-0.09*	0.03	0.03	0.06	-0.09**
Black African	0.02	-0.01	-0.02	-0.01	0.07	-0.06**
Other	0.10**	-0.07*	-0.03	0.05	0.00	-0.05**
Family structure (2 biological-parents)						
Step-parent formal	-0.03*	-0.00	0.03	0.02	-0.02	0.00
Step-parent informal	-0.01	-0.03	0.05	0.11*	0.01	-0.12*
Single-parent alone	0.03*	-0.03	-0.00	-0.06	0.04	0.02
Single-parent extended	0.03	-0.05	0.02	-0.03	-0.06	0.09
Other family type	-0.04	-0.02	0.06	-0.04	0.03	0.01
Complex sibship	-0.01	-0.04*	0.05**	-0.06*	0.02	0.04
Income quintiles (highest)						
1st (lowest) quintile	-0.01	-0.05**	0.06***	-0.02	-0.04	0.06***
2nd quintile	-0.01	-0.04*	0.05***	0.00	-0.06*	0.06***
3rd quintile	-0.01	-0.01	0.02	0.01	-0.04	0.04*
4th quintile	-0.02	0.01	0.00	-0.00	-0.00	0.00
Subjective financial difficulties	0.02	-0.07***	0.05***	-0.02	-0.03	0.05**
Parental degree	-0.01	0.05***	-0.04***	-0.03*	0.06***	-0.03*
N (unweighted) cases	19699	19699	19699	12903	12903	12903
F	13.24*** (29, 2380)	9.16*** (29, 2380)	17.23*** (29, 2380)	10.54*** (29, 1547)	5.82*** (29, 1547)	8.04*** (29, 1547)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Waves 1, 3, 5, 7, 9 & 11 [a] Predicted posterior probabilities of each relationship typology

Table 108 below summarises the relative size and characteristics of each typology identified

by the Latent Class Analysis of the parent-reported relationships with children.

Table 108: Relative size and characteristics of parent-reported relationships with children

Relative size	Typology	Characterised by	Characteristics associated with being in this latent class	Characteristics associated with not being in this latent class
Mother-reported relationship with child(ren)				
17.2%	Authoritarian or neglectful	Low levels of warmth, some arguments & harsh discipline, rules enforced sometimes	Older age; being male; Mixed, Indian, Pakistani, Bangladeshi, Black Caribbean ethnicity; SPA family	
60.8%	Authoritative	High levels of warmth, low levels of arguments & harsh discipline, rules enforced sometimes	Younger age; being female; higher parental education	Pakistani and Black Caribbean ethnicity; SPA family; lowest two income quintiles; subjective financial difficulties
22.0%	Permissive	High levels of warmth, high levels of arguments & harsh discipline, rules enforced sometimes	Younger age; non-full siblings; lowest two income quintiles; subjective financial difficulties; lower parental education	Bangladeshi and Black Caribbean ethnicity
Father-reported relationship with child(ren)				
19.6%	Authoritarian or neglectful	Very low levels of warmth, few arguments, little use of harsh discipline, rules enforced sometimes	Older age; Indian ethnicity; informal step-parent family; lower parental education	Non-full siblings
17.7%	Authoritative	High levels of warmth, very low levels of arguments & harsh discipline, rules enforced sometimes	Younger age; being female; Mixed ethnicity; higher parental education	Second lowest quintile
62.6%	Permissive	Moderate levels of warmth, high levels of arguments & harsh discipline, rules enforced sometimes	Younger age; being male; lowest three income quintiles; subjective financial difficulties; lower parental education	Bangladeshi and Black African ethnicity

Children's relationships with siblings

The analysis now moves on to explore the extent to which children's sibling relationships mirror relationships with parents in terms of associated predictors and outcomes. There were four questions about physical aspects of sibling relationships - whether children hit their siblings or take their belongings and *vice versa* - and four questions about verbal aspects of sibling relationships – whether children tease their siblings or call them nasty names and *vice versa*. Descriptive and bivariate analysis of these questions and children's SWB are shown in Table 109 below. The proportion of observations that is missing for these questions[19] is closely related to the proportion of children who do not have siblings, which indicates that there are very low levels of item non-response from children with siblings.

The majority of children said that they had not been on either the giving or receiving end of the sibling behaviours. However, Table 109 also shows that there were clear associations with children's SWB for all of the measures. The rate of low SWB was about twice as high amongst children reporting that these sibling behaviours happened 'a lot' (ranging from 20.2% for teasing siblings to 24.5% for being teased by siblings) compared to those saying that these behaviours 'never' happened (ranging from 8.6% for being called nasty names by siblings to 11.0% for teasing or taking belongings away from siblings). Regular involvement in these behaviours was also associated with lower 4-domain SWB scores.

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[19] The discrepancy between the proportion of children with no siblings relating to waves 1, 3, 5, 7, 9 & 11 (14.0%) and the proportion missing for the question about being hit by siblings (13.6%) relates to the fact that the former is calculated on the basis of adult-reported data about household composition, while the latter is a filtered question that is preceded by a question asked of children: Do you have brothers or sisters living at home? Thus, the figures are not exactly the same.

Table 109: Descriptive and bivariate analysis of child-reported relationship with sibling(s) and children's SWB

Child-reported sibling relationship variables	% missing data	%	%	% with low SWB	Mean 4-domain SWB score
Hit by sibling(s)	13.6			***	***
Never		37.3	⎤72.7	9.5	20.0
Not much (1-3 times in the last 6 months)		35.4	⎦	12.1	19.7
Quite a lot (>4 times in the last 6 months)		13.7	⎤27.3	18.5	18.9
A lot (a few times every week)		13.6	⎦	21.1	18.6
Belongings taken by sibling(s)	14.4			***	***
Never		52.6	⎤82.9	9.9	20.1
Not much (1-3 times in the last 6 months)		30.3	⎦	14.2	19.4
Quite a lot (>4 times in the last 6 months)		10.6	⎤17.1	20.9	18.4
A lot (a few times every week)		6.5	⎦	23.6	18.2
Called nasty names by sibling(s)	14.2			***	***
Never		42.9	⎤73.6	8.6	20.3
Not much (1-3 times in the last 6 months)		30.6	⎦	12.1	19.6
Quite a lot (>4 times in the last 6 months)		13.3	⎤26.4	21.2	18.5
A lot (a few times every week)		13.1	⎦	23.5	18.0
Teased by sibling(s)	14.1			***	***
Never		45.7	⎤75.9	9.1	20.3
Not much (1-3 times in the last 6 months)		30.2	⎦	12.7	19.5
Quite a lot (>4 times in the last 6 months)		12.8	⎤24.1	20.0	18.5
A lot (a few times every week)		11.3	⎦	24.5	17.9
Hit sibling(s)	14.1			***	***
Never		42.7	⎤80.1	10.4	19.9
Not much (1-3 times in the last 6 months)		38.4	⎦	13.5	19.5
Quite a lot (>4 times in the last 6 months)		11.7	⎤19.9	18.5	18.9
A lot (a few times every week)		7.2	⎦	20.8	18.7
Taken belongings from sibling(s)	14.8			***	***
Never		63.4	⎤91.2	11.0	19.9
Not much (1-3 times in the last 6 months)		27.7	⎦	15.8	19.1
Quite a lot (>4 times in the last 6 months)		6.0	⎤8.8	20.5	18.3
A lot (a few times every week)		2.8	⎦	23.8	18.3
Called sibling(s) nasty names	14.7			***	***
Never		47.2	⎤80.9	9.3	20.2
Not much (1-3 times in the last 6 months)		33.6	⎦	14.4	19.4
Quite a lot (>4 times in the last 6 months)		12.1	⎤19.1	20.4	18.4
A lot (a few times every week)		7.0	⎦	22.4	18.2
Teased sibling(s)	14.5			***	***
Never		48.5	⎤81.5	11.0	20.2
Not much (1-3 times in the last 6 months)		33.0	⎦	13.4	19.3
Quite a lot (>4 times in the last 6 months)		11.3	⎤18.5	18.7	18.5
A lot (a few times every week)		7.3	⎦	20.2	18.2

Socioeconomic circumstances and children's sibling relationships

The bivariate relationships between household income quintiles and child-reported sibling relationships are explored in Table 110 below. Children in higher income quintiles were less likely to be hit, called nasty names or have belongings taken by siblings, as well as to call siblings nasty names and hit them, although for some variables there was little differentiation between the fourth and highest quintiles and, overall, the socioeconomic gradients were not pronounced. It is interesting that the physical aspects of sibling conflict had a clearer socioeconomic gradient than verbal behaviours such as teasing, which was just as prevalent – or even more prevalent – amongst children in the highest income quintile as in the lowest two quintiles. This pattern is consistent with bullying studies, which have found higher rates of physical bullying amongst children with low family affluence after controlling for a range of variables, but no socioeconomic gradient for verbal or relational bullying (Wang, Iannotti and Nansel, 2009; Pople, 2022).

Table 110: Cross-tabulation of child-reported measures of sibling relationships and household income quintiles

Sibling behaviour experienced 'quite a lot' or 'a lot'		Equivalised household income quintiles				
		% 1 (lowest)	% 2	% 3	% 4	% 5 (highest)
Hit by sibling(s) lot	***	30.5	28.7	25.3	23.1	25.1
Belongings taken by sibling(s)	***	20.3	17.7	15.4	14.6	14.0
Called nasty names by sibling(s)	*	28.5	27.7	24.9	23.8	24.8
Teased by sibling(s)	NS	24.0	24.5	23.0	24.1	25.3
Hit sibling(s)	**	21.1	19.9	17.7	16.3	17.1
Taken belongings from sibling(s)	NS	10.1	9.3	8.0	7.7	8.1
Called sibling(s) nasty names	**	21.2	20.6	17.3	16.3	17.7
Teased sibling(s)	NS	19.2	18.6	17.2	18.0	19.8

Latent Class Analysis

As outlined in the methods section, LCA is able to take account of item non-response as long as there is *some* information on the variables of interest. Consequently, with respect to

children's sibling relationships, all observations of 'only' children and a small number of observations of children who have siblings but did not answer any of the questions are excluded from the LCA. This resulted in an analytical sample of 18,835 observations relating to 11,506 children.

Analysis of non-response for the sibling sample indicates that children were more likely to be missing from this sample if they were living in an informal step-parent, single-parent or non-biological parent family, and if they were older (i.e. aged 14 or 15). However, in other respects, this sample had different characteristics to other samples in this chapter: children were *less* likely to be missing if they were in lower income quintiles and of Indian, Pakistani, Bangladeshi or Black African ethnicity, which is likely due to children in these ethnic groups being less likely to be 'only' children. As can be seen in Table 111, children missing from this sample had a slightly higher likelihood of low overall SWB and lower 4-domain scores.

Table 111: Inclusion/exclusion from analytical sample and SWB

	Low overall SWB	4-domain score
Sibling sample	*	***
Missing	13.8	19.5
Included	12.4	19.7

For the relationship with siblings, a 4-latent- class model fitted the data well and identified four typologies of sibling relationships that are reminiscent of distinctions made in the bullying literature between children who are involved - or 'uninvolved' - in conflict, as well as between physical and verbal or relational types of conflict. In addition to its theoretical plausibility, Table 112 also shows that the four-class model has better statistical properties than the one- and two-class models in terms of lower AIC and BIC values, and also that the three-class model did not converge.

Table 112: Model fit for latent class models of child-reported relationship with siblings

Model	N	Log likelihood	df	AIC	BIC
One class	18,835	-70971.99	8	141960.00	142022.7
Two classes	18,835	-56618.78	17	113271.60	113404.9
Three classes	(Did not converge)				
Four classes	18,835	-54110.44	35	108290.90	108565.40

Most children were in the 'harmonious' category, representing 60.4% of the sample and characterised by low levels of sibling conflict. The next two largest latent classes were 2 and 3, relating to 10.5% and 20.4% of the sample respectively. Latent class 2 can be differentiated from class 3 by its high levels of physical conflict - carried out both by the respondent and their sibling(s) - while latent class 3 was characterised by comparatively high levels of verbal conflict and low levels of physical fighting. The smallest category, involving 8.8% of the sample, was latent class 4, which was described as 'high conflict' as all indicators of sibling conflict were reported.

Table 113: Predicted probabilities of child-reported relationship with siblings

Class	1 'Harmonious'	2 'Physical'	3 'Verbal'	4 'High-conflict'
Relative size	0.604	0.105	0.204	0.088
Hit by sibling(s)	0.055	0.785	0.333	0.916
Belongings taken by sibling(s)	0.060	0.210	0.299	0.536
Called nasty names by sibling(s)	0.015	0.337	0.607	0.979
Teased by sibling(s)	0.013	0.240	0.583	0.914
Hits sibling(s)	0.007	1.000	0.000	0.888
Takes belongings from sibling(s)	0.022	0.133	0.129	0.399
Calls sibling(s) nasty names	0.002	0.327	0.341	0.909
Teases sibling(s)	0.003	0.261	0.370	0.869

Figure 29: Predicted probabilities of child-reported relationship with siblings (95% CIs)

Latent class 1: 'Harmonious'
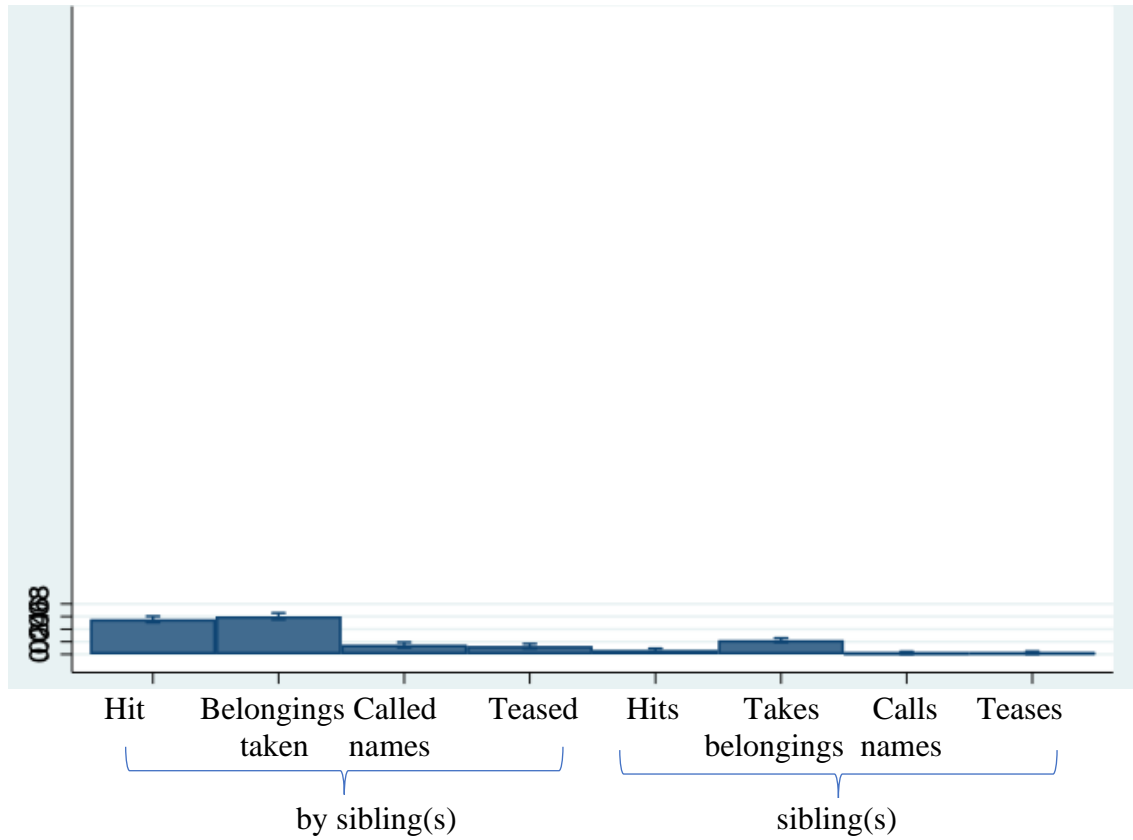
Latent class 2: 'Physical conflict'
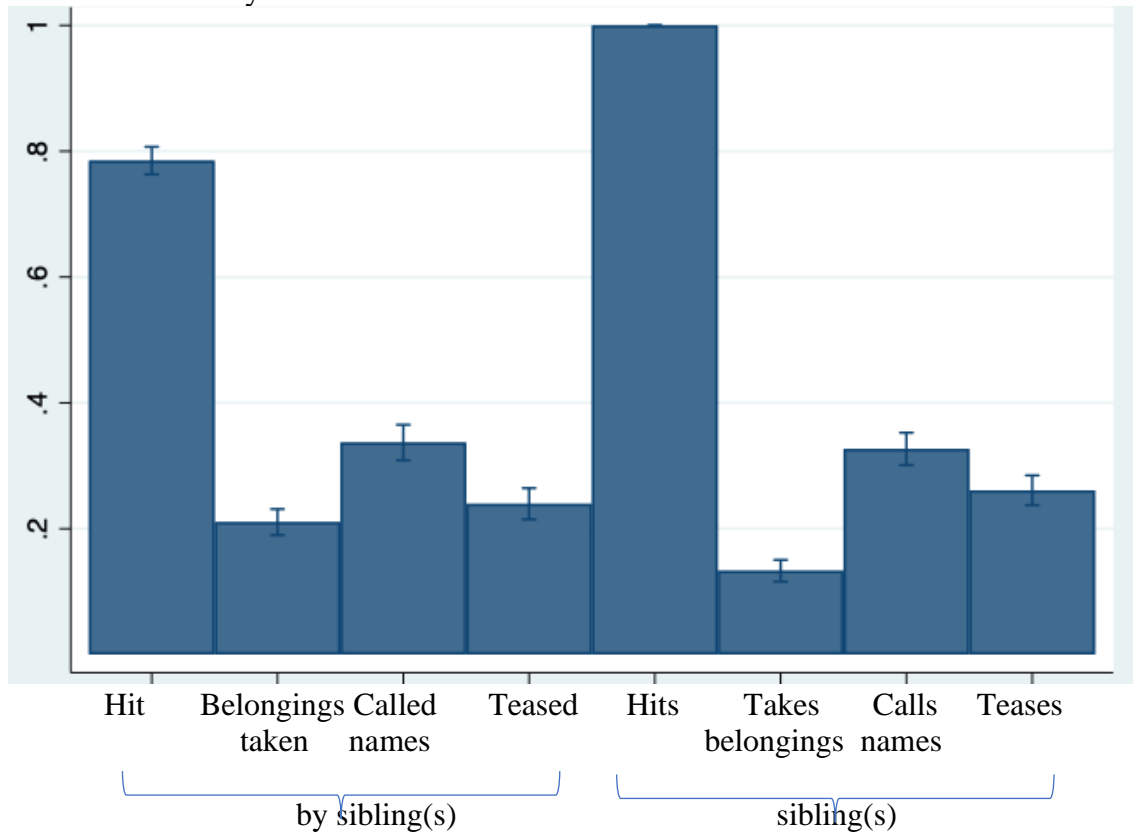
Latent class 3: 'Verbal conflict'
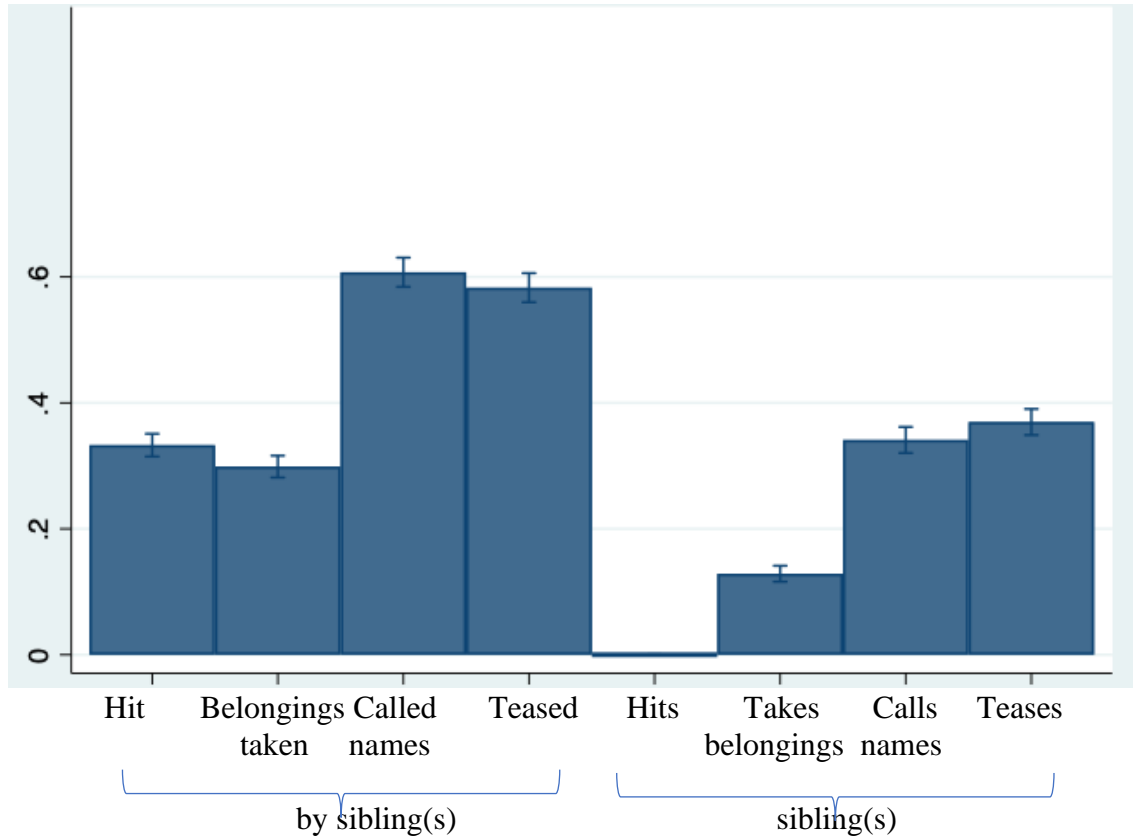
Latent class 4: 'Physical and verbal conflict'
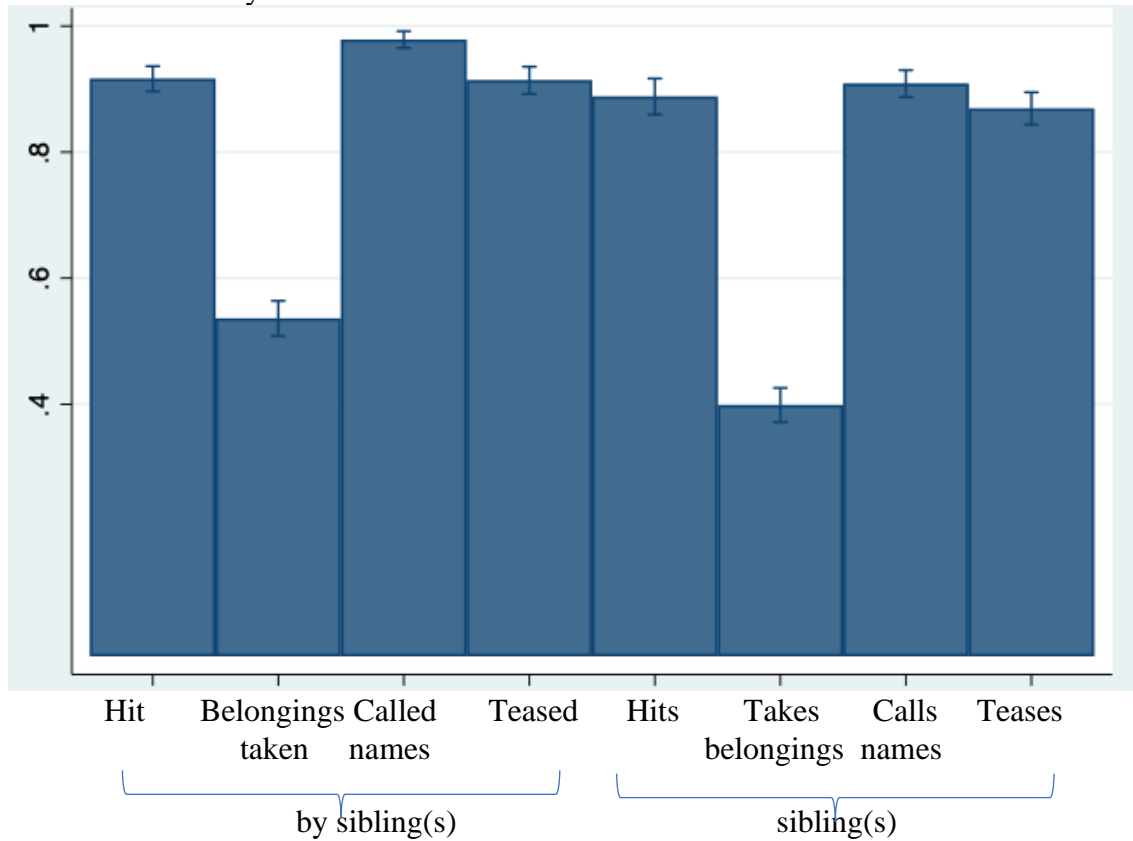
Table 114 indicates that the 4-class model had a high degree of certainty about categorising children in all four classes, with a 'success' rate ranging from 87.3% for class 3 (verbal conflict) to 96.9% for class 1 (harmonious). Based on the conditional probabilities for each class, the main areas of uncertainty related to the 9.4% of children in class 3 (verbal conflict) who might have been classified as being in class 1 (harmonious), and the 8.5% of children in class 4 (high conflict) who might have been classified as being in class 2 (physical conflict).

Table 114: Classification matrix of class membership for child-reported sibling relationships

Predicted class	Class 1	2	3	4
1	**0.969**	0.001	0.030	0.000
2	0.040	**0.910**	0.004	0.046
3	0.094	0.003	**0.873**	0.030
4	0.000	0.085	0.025	**0.890**

Factors associated with child-reported sibling relationships

Figure 30 shows a clear relationship between sibling relationship typologies and age. Younger children were slightly more likely to be involved in physical conflict, while older children were slightly more likely to be involved in verbal conflict or be in the harmonious class, with low levels of physical and verbal conflict. This finding is in keeping with the bullying literature, which highlights a reduction in victimisation as children get older, particularly for physical forms of bullying (Whitney and Smith, 1993; Smith *et al.*, 1999; Wolke *et al.*, 2001). There were also sex differences in latent class membership for the relationship with sibling(s), with girls slightly more likely to be in the verbal conflict category and boys slightly more likely to be in the physical conflict category. Again, these findings reflect the bullying literature, which finds physical bullying to be more common amongst boys than girls (Whitney and Smith, 1993; Smith *et al.*, 1999; Wolke *et al.*, 2001).

Figure 30: Predicted probabilities of sibling relationship typologies by age and sex
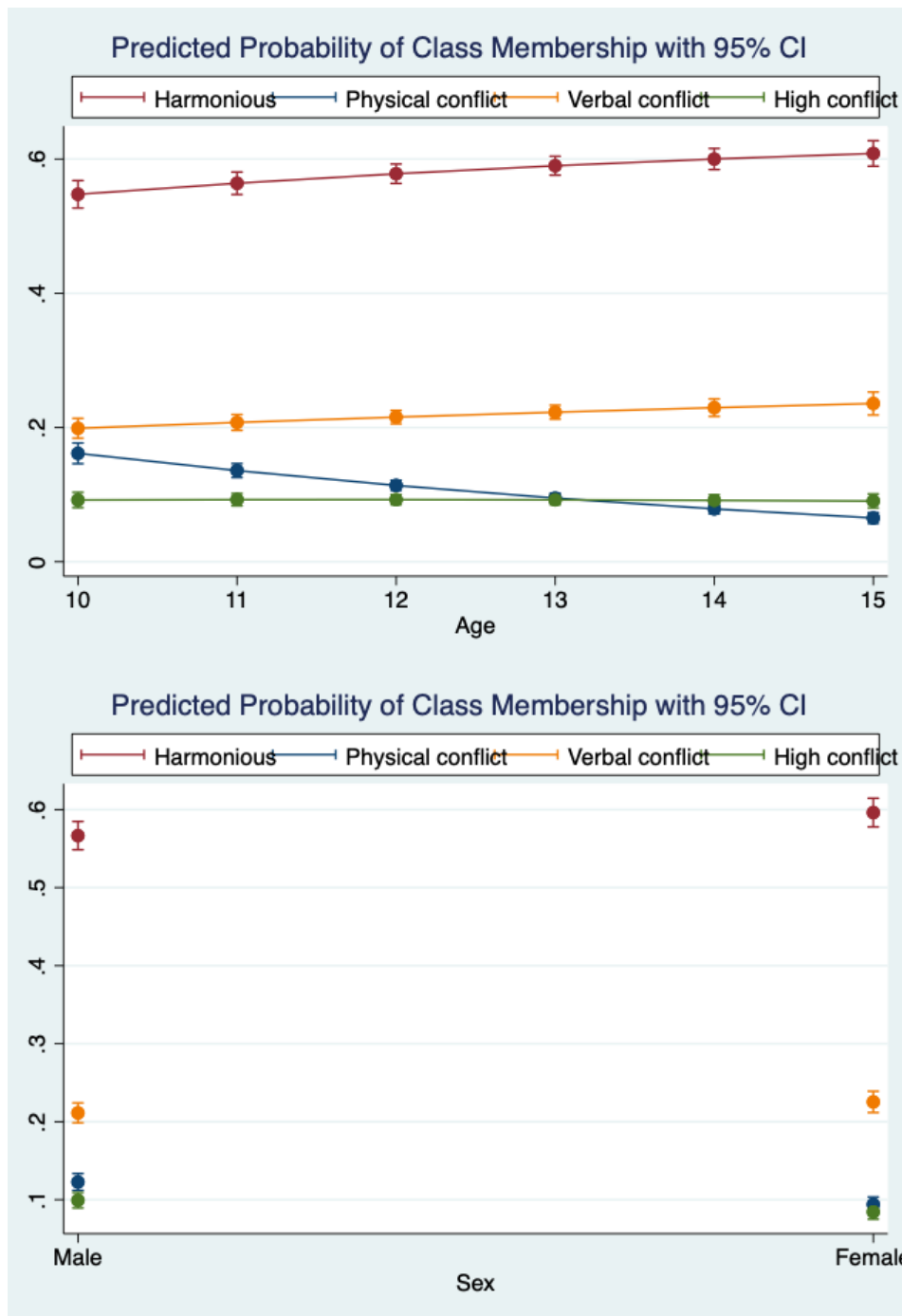
Table 115 shows the regressions of the predicted posterior probabilities of different sibling relationship typologies onto the child, family and socioeconomic factors. As the sex and age differences in physical and verbal conflict were in opposite directions, there were no significant differences for the high conflict category. There were similar patterns for children

in five ethnic groups: children of Indian, Pakistani, Bangladeshi, Black Caribbean and Black African ethnicities were more likely than White children to have harmonious relationships with their siblings and less likely to have sibling relationships characterised by physical, verbal or both types of conflict.

Family structure was a less consistent correlate of relationships with siblings than of the parent-child relationship. Notably, however, children in SPA families were less likely to have harmonious sibling relationships and more likely to be involved in high conflict, while children in SPE families were more likely to have harmonious relationships and less likely to be involved in physical or verbal conflict, although these findings were non-significant. This provides support for the additional adult hypothesis, which argues that if a single parent has an additional layer of support from other adults in the household, this may help them to manage the behaviour of their children (Hashima and Amato, 1994; Stolba and Amato, 1993). Table 115 also provides evidence of children in lower income households being more likely to be involved in physical conflict, which echoes findings from psychopathology emphasising the link between disadvantaged socioeconomic circumstances and externalising behaviours (Ford, Goodman and Meltzer, 2004).

Intriguingly, higher levels of parental education were associated with less harmonious sibling relationships and higher levels of verbal conflict. This might be explained by Lareau's hypothesis of 'concerted cultivation' amongst middle-class children, who are encouraged to use language as their main method of settling disputes, but with the – perhaps unintended – result of high levels of 'negotiation, bargaining and whining in everyday life' (Lareau, 2011, p. 107).

Table 115: Linear regressions of child-sibling relationship typologies and child, family & socioeconomic characteristics

Variable (reference category in brackets)	Predicted posterior probabilities			
	Harmonious latent class	Physical conflict latent class	Verbal conflict latent class	High conflict latent class
Child's characteristics				
Age	0.02***	-0.02***	0.00	-0.00
Female	0.02	-0.02***	0.02*	-0.01
Ethnicity (White)				
Mixed	0.00	-0.00	-0.00	0.00
Indian	0.10***	-0.03*	-0.03	-0.04***
Pakistani	0.06*	-0.02	-0.01	-0.02
Bangladeshi	0.15***	-0.04*	-0.06*	-0.06***
Black Caribbean	0.11*	-0.01	-0.04	-0.06***
Black African	0.08*	-0.03	-0.03	-0.03
Other	0.06	-0.03	0.00	-0.03*
Family characteristics				
Family structure (2 biological-parents)				
Step-parent family	0.00	-0.00	0.00	0.00
Step-parent family	0.01	-0.03	0.02	0.00
Single-parent alone (SPA)	-0.04*	0.00	0.02	0.02*
Single-parent extended (SPE)	0.08	-0.04	-0.04	-0.00
Non-biological-parent family	0.02	-0.01	0.03	-0.03
Complex sibship	0.00	-0.00	0.00	0.00
Socioeconomic circumstances				
Income quintiles (highest)				
1st (lowest) quintile	-0.03	0.03*	-0.01	0.01
2nd quintile	-0.03	0.02*	0.00	-0.00
3rd quintile	-0.00	0.01	-0.00	-0.01
4th quintile	-0.00	0.01	0.00	-0.01
Subjective financial difficulties	-0.00	-0.01	0.01	0.00
Parental education: degree	-0.03*	0.01	0.02**	0.00
Latent class (Authoritative)				
Neglectful	-0.43***	0.08***	0.17***	0.17***
Permissive	-0.40***	0.11***	0.13***	0.16***
Authoritarian	-0.08*	0.03	0.07*	-0.02
Waves	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11	1, 3, 5, 7, 9, 11
N (unweighted) cases	18418	18418	18418	18418
F	23.40***	7.86***	4.71***	9.42***
	(32, 2210)	(32, 2210)	(32, 2210)	(32, 2210)
R^2	0.07	0.02	0.02	0.04

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Finally, there were clear associations between the child-mother relationship typologies and

sibling relationships, with all of the non-authoritative typologies - but particularly neglectful

and permissive ones - predicting a lower likelihood of harmony and a higher likelihood of

conflict in sibling relationships. This highlights the importance of considering the whole

family system when trying to understand influences on children's quality of life as there may

be spill-over effects from one relationship to another (Pike, Coldwell and Dunn, 2005).

Table 116 below summarises the relative size, characteristics and correlates of each sibling

relationship typology identified by the Latent Class Analysis.

Table 116: Relative size, characteristics and correlates of child-reported relationships with siblings

Relative size	Typology	Characterised by	Characteristics associated with being in this latent class	Characteristics associated with not being in this latent class
Child-reported relationship with sibling(s)				
60.4%	Harmonious	Little or no conflict of any type	Older age; all non-White ethnic groups (except Mixed); lower parental education; authoritative child-mother relationship	SPA family; neglectful, permissive or authoritarian child-mother relationship
10.5%	Physical conflict	High levels of hitting / being hit by siblings, moderate levels of other sibling conflict	Younger age; being male; lowest two income quintiles; neglectful and permissive child-mother relationship	Indian and Bangladeshi ethnicity; SPE family
20.4%	Verbal conflict	High levels of name-calling and teasing, no hitting but moderate levels of other sibling conflict	Being female; higher parental education; neglectful, permissive or authoritarian child-mother relationship	Bangladeshi ethnicity
8.8%	High-conflict	Moderate to high levels of all sibling conflict	SPA family; neglectful and permissive child-mother relationship	Non-biological-parent family; Indian, Bangladeshi and Black Caribbean ethnicity

Children's family relationships and SWB

The next step in the analysis was to explore how different typologies of family relationships are associated with children's SWB. First of all, the predicted probabilities of class membership for the child-reported relationship with mothers and fathers were added to logistic regressions of low SWB and linear regressions of 4-domain SWB alongside the measure of interparental conflict and the child, family and socioeconomic variables. The analytical sample here is smaller than for the LCA since children are not included if they did not answer at least one question about their mother and one question about their father. Otherwise, their latent class predicted probabilities would be based on their scores for the variables which are not specific to each parent. The sample size is held constant across the four models shown in Table 117 so that the results are directly comparable.

In terms of the parent-child relationship typologies, Table 117 shows that children with an authoritarian, permissive or neglectful parent-child relationship had a much higher likelihood of low overall SWB and lower 4-domain SWB scores than children with an authoritative relationship. This was especially striking for children with a neglectful relationship, who had 25 to 28 times higher odds of low overall SWB and 4-domain scores that were about 6 points lower on average than children in the authoritative class. Children experiencing an authoritarian parent-child relationship had 6 to 7 times higher odds of low overall SWB and 4-domain scores that were more than 2.5 points lower, while children with a permissive parent-child relationship had 3 to 5 times higher odds and 4-domain scores that were about 1.5 to 2 points lower than children in the authoritative class. Children whose parents reported conflict with their partners were also more likely to have low overall SWB, but interparental conflict was not associated with 4-domain SWB.

Table 117: Child-reported relationships with mother and father and SWB

Variable (reference category in brackets)	Odds ratios for low overall SWB		Regression coefficients for 4-domain SWB scores	
	Child-mother	Child-father	Child-mother	Child-father
Female	1.41***	1.37***	-0.46***	-0.42***
Age	1.03	1.02	-0.40***	-0.39***
Ethnicity (White)				
Mixed	0.83	0.86	0.34	0.30
Indian	0.78	0.78	0.76***	0.76***
Pakistani	0.86	0.83	0.68***	0.71***
Bangladeshi	0.67	0.65	1.04***	1.10***
Black Caribbean	0.70	0.63	-0.01	0.14
Black African	0.59*	0.56**	0.81***	0.89***
Other	0.72	0.72	0.51*	0.52*
Family structure (2 biological parents)				
Step-parent formal	1.33*	1.26	-0.57***	-0.49**
Step-parent informal	1.37	1.36	-0.25	-0.27
Single-parent alone	1.29	1.32	-0.26	-0.26
Single-parent extended	0.97	1.03	-0.19	-0.24
No biological parents	1.63*	1.83**	-0.48	-0.61*
Complex sibship	1.19	1.22	0.06	0.03
Income quintiles (highest)				
1st (lowest) quintile	1.34*	1.30	0.12	0.17
2nd quintile	1.40*	1.36*	-0.13	-0.08
3rd quintile	1.27	1.25	-0.04	-0.01
4th quintile	1.11	1.11	0.04	0.04
Subjective financial difficulties	1.33**	1.31**	-0.30**	-0.28*
Parental degree	1.08	1.07	-0.08	-0.08
Parental conflict	1.40**	1.39**	-0.21	-0.19
Relationship typology (Authoritative)				
Permissive	3.68***	5.10***	-1.52***	-2.09***
Authoritarian	6.12***	7.00***	-2.68***	-2.81***
Neglectful	25.83***	28.29***	-6.03***	-6.42***
_cons			26.99***	26.65***
N (unweighted) cases	20532	20532	20532	20532
F	25.43*** (34, 2490)	25.93*** (34, 2490)	71.35*** (34, 2490)	77.72*** (34, 2490)
R^2			0.22	0.23

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Models also control for country and wave of the survey.

Once the parent-child typologies and interparental conflict were included, children's characteristics were less clearly related to low overall SWB. This was especially clear for age and ethnicity and contrasts with earlier analyses that did not consider family relationship

quality. The exception was that Black African children had a lower likelihood of low SWB. It is possible that changes in the parent-child relationship as children get older are part of the explanation for the non-significant association with age here compared to the higher likelihood of low SWB for older children in the analyses in earlier chapters. Furthermore, ethnic differences in parenting styles may help to explain the non-significant associations between ethnicity and low SWB here. There was a different picture for 4-domain SWB, however, with younger children and those of Indian, Pakistani, Bangladeshi and Black African ethnicity having significantly higher 4-domain SWB scores. However, the findings of Chapter 2 with respect to subgroup differences in the measurement of 4-domain SWB should be borne in mind here. It is not possible to disentangle substantive differences in 4-domain SWB amongst children of different ages, sexes and ethnicities from those relating to measurement. It seems likely that the differences in the findings for low overall SWB and the 4-domain measure are being driven by the higher satisfaction with appearance of children in these groups, and the different salience of the appearance domain to them.

For family structure, there was a clear picture of alternative family forms becoming less important predictors of SWB once family relationships are considered. Children in a formal step-parent family had significantly lower 4-domain SWB in the mother- and father-models, and a higher likelihood of low overall SWB in the mother-child model, while children living with neither biological parent had a higher likelihood of low overall SWB and lower 4-domain SWB in the father-child model. However, there were no other differences by family structure or complex sibship, in contrast to earlier findings. Given that the parameter estimates for SWB are larger for the father-child relationship typologies than those for the mother-child relationship - and the estimates for living in a formal step-parent family are smaller - it seems likely that children's relationship with their non-resident fathers are crucial

to consider, and may explain the lower SWB of children in formal step-parent families over and above their family structures.

Furthermore, children in households with lower incomes and those whose parents reported financial difficulties were more likely to have low SWB in both models, and those with financial difficulties had lower 4-domain SWB as well. The finding of household income being a less clear correlate of 4-domain SWB scores than low SWB is likely because the SWB indicators included in the 4-domain measure – specifically, satisfaction with appearance, family and friends – are less clearly related to household income than satisfaction with life as a whole. Parental education was also not associated with SWB in either the logistic or the linear regressions. Together, these findings provide support for the hypothesis of family relationships and socioeconomic circumstances mediating the relationship between family structure and SWB.

Table 118 replicates this analysis with the parent-reported relationship typologies. For the models shown, the sample size is not held constant because the observations that contain data about father-reported relationship typologies exclude all children living in single-parent families and the association between family structure and SWB is of interest. However, in Table 119, the sample size is held constant across both the child-reported and parent-reported models so that different perspectives on the parent-child relationship can be directly compared.

Table 118 shows that all of the non-authoritative parent-child relationship typologies were associated with a high likelihood of low overall SWB and lower 4-domain SWB scores, and parental conflict was associated with SWB in three out of the four models. Similar to the

child-reported models, ethnicity was not associated with low overall SWB once the measures of relationship quality were included (except for Black African in the mother-child model), but Indian, Pakistani and Bangladeshi children had higher 4-domain SWB scores. Parent-reported family relationships did not appear to mediate the association between family structure and SWB so clearly as the child-reported relationships as several of the family structure estimates – notably, those for formal step-parent families – remained significant. However, for socioeconomic circumstances, there were the same patterns as in the child-reported models with lower income related to low overall SWB and subjective financial difficulties related to SWB in all models.

Table 118: Mother- and father-reported relationships with child and SWB

Variable (reference category in brackets)	Odds ratios for low overall SWB		Regression coefficients for 4-domain SWB scores	
	Mother-child	Father-child	Mother-child	Father-child
Female	1.34***	1.43***	-0.42***	-0.50***
Age	1.12***	1.11***	-0.51***	-0.49***
Ethnicity (White)				
Mixed	0.92	1.16	0.19	0.01
Indian	0.81	0.92	0.77***	0.76**
Pakistani	0.83	0.76	0.74***	0.94***
Bangladeshi	0.67	0.95	1.07***	0.78*
Black Caribbean	0.64	1.18	0.05	-0.90
Black African	0.59**	0.68	0.83***	0.32
Other	0.63	0.78	0.58*	0.31
Family structure (2 biological parents)				
Step-parent formal	1.48**	1.32	-0.78***	-0.64**
Step-parent informal	1.65*	1.77	-0.64	-0.26
Single-parent alone	1.35	1.94*	-0.42	-0.38
Single-parent extended	1.35	0.57	-0.64	0.13
No biological parents	1.57	1.66	-0.55	-0.64
Complex sibship	1.23	1.42*	-0.08	-0.21
Income quintiles (highest)				
1st (lowest) quintile	1.37*	1.34	0.08	0.06
2nd quintile	1.44**	1.21	-0.15	-0.08
3rd quintile	1.26	1.18	-0.03	-0.06
4th quintile	1.11	1.05	0.05	0.05
Subjective financial difficulties	1.33**	1.48**	-0.33*	-0.44**
Parental degree	1.05	0.97	-0.04	0.10
Parental conflict	1.49***	1.53***	-0.36*	-0.29
Relationship typology (Authoritative)				
Authoritarian / neglectful	1.39**	1.42**	-0.85***	-0.66***
Permissive	1.67***	1.59**	-0.75***	-0.86***
_cons			27.01***	26.67***
N (unweighted) cases	19279	12636	19279	12636
F	7.23***	4.90***	33.36	20.71
	(33, 2358)	(33, 1531)	(33, 2358)	(33, 1531)
R^2			0.10	0.09

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Models also control for country and wave of the survey.

A comparison of the parent-reported and child-reported models where the sample size is held constant is shown below. Although each model contains the same correlates, just the family relationship typologies and model statistics are shown. Comparison of the parameter

estimates for children's relationships with their parents in Table 119 makes it abundantly

clear that children's perspectives on relationship quality are much stronger correlates of SWB

than parental perspectives. Furthermore, the total amount of variation in 4-domain SWB

explained by the child-reported models ($R^2 = 0.20$ for child-mother and 0.23 for child-father)

was more than twice the amount explained by the parent-reported relationship models ($R^2 =$

0.09 for both mother- and father-child).

Table 119: Child- and parent-reported relationships and SWB

Variable (reference category in brackets)	Odds ratios for low overall SWB		Regression coefficients for 4-domain SWB scores	
	Child-mother	Child-father	Child-mother	Child-father
Relationship typology (Authoritative)				
Permissive	4.65***	7.30***	-1.46***	-2.30***
Authoritarian	6.73***	9.00***	-2.86***	-3.02***
Neglectful	24.53***	28.91***	-5.85***	-6.12***
_cons			26.98***	26.65***
N (unweighted) cases	11650	11650	11650	11650
F	12.23***	13.05***	38.71***	41.70***
	(31, 1395)	(31, 1395)	(31, 1395)	(31, 1395)
R^2			0.21	0.23
	Odds ratios for low overall SWB		Regression coefficients for 4-domain SWB scores	
Variable (reference category in brackets)	Mother-child	Father-child	Mother-child	Father-child
Relationship typology (Authoritative)				
Authoritarian / neglectful	1.23	1.47**	-0.80***	-0.63***
Permissive	1.31	1.48*	-0.56**	-0.80***
_cons			26.64***	26.67***
N (unweighted) cases	11650	11650	11650	11650
F	4.38***	4.60***	20.74***	20.37***
	(30, 1395)	(30, 1395)	(30, 1395)	(30, 1395)
R^2			0.09	0.09

Finally, the associations between the sibling relationship typologies and SWB are considered.

Children with high conflict relationship with siblings were more than three times as likely to

have low SWB - and scored more than two points lower on the 4-domain measure of SWB –

than children with harmonious sibling relationships. Interestingly, sibling relationships characterised by high levels of verbal conflict - which included teasing and name-calling – had stronger associations with both measures of SWB than sibling relationships characterised by high levels of physical conflict. Interparental conflict was also associated with SWB in both models.

Similar to the child-reported relationships with parents, inclusion of the sibling relationship typologies attenuated the ethnicity estimates to such an extent that there was no association between ethnicity and low overall SWB, and only Pakistani, Bangladeshi and Black African ethnicities were associated with 4-domain scores. The family structure estimates were also attenuated, although living in a formal step-parent family remained associated with both measures of SWB and complex sibship retained its association with low overall SWB.

Table 120: Child-reported relationships with siblings and SWB

Variable (reference category in brackets)	Odds ratios for low overall SWB	Regression coefficients for 4-domain SWB
Female	1.33***	-0.46***
Age	1.12***	-0.51***
Ethnicity (White)		
Mixed	1.11	0.00
Indian	1.06	0.39
Pakistani	0.90	0.62**
Bangladeshi	0.84	0.56*
Black Caribbean	0.92	-0.33
Black African	0.67	0.66**
Other	0.77	0.43
Family structure (two biological-parents		
Step-parent formal	1.47**	-0.77***
Step-parent informal	1.51	-0.55
Single-parent alone	1.29	-0.34
Single-parent extended	1.45	-0.85
No biological parents	1.52	-0.62
Complex sibship	1.30*	-0.12
Income quintiles (highest)		
1st (lowest) quintile	1.34	0.13
2nd quintile	1.38*	-0.06
3rd quintile	1.30	-0.07
4th quintile	1.12	0.06
Subjective financial difficulties	1.32**	-0.37**
Parental degree	0.99	0.07
Parental conflict	1.61***	-0.41**
Relationship typology (Harmonious)		
Physical conflict	2.36***	-1.20***
Verbal conflict	2.77***	-1.85***
Both types of conflict	3.22***	-2.27***
_cons		27.43***
N (unweighted) cases	18080	18080
F	12.21***	43.10***
	(34, 2192)	(34, 2192)
R^2		0.15

* $p<0.05$ ** $p<0.01$ *** $p<0.001$. Models also control for country and wave of the survey.

Structural Equation Modelling

To further explore whether family relationships mediate the relationship between children's

family structures, socioeconomic circumstances and SWB, the variables of interest and a set

of control variables were included in a series of structural equation models. Tables 121, 122,

123, 124 and 125 present the standardised coefficients for the five different family relationship models: the child-reported (1) mother-child and (2) father-child relationship, the mother-reported and (4) father-reported relationship with child, and (5) the child-reported relationship with siblings. In contrast to the regressions, in which all of the independent variables predicted a single outcome, these models are able to consider how the child and family characteristics and socioeconomic variables relate to each other, as well as to SWB.

Table 121: Structural equation model of child-reported relationship with mother

	Equivalised income	Subjective financial situation	Permissive	Authoritarian	Neglectful	SWB
Female			-0.04***	-0.09***	0.02	-0.06***
Age			0.00	0.05***	0.14***	-0.22***
Ethnicity (White)						
Mixed	0.00		0.00	0.01	0.03*	0.00
Indian	-0.03***		-0.02	0.01	0.01	0.02*
Pakistani	-0.09***		-0.01	0.01	0.00	0.02*
Bangladeshi	-0.05***		-0.02**	0.01	0.01	0.03***
Black Caribbean	-0.00		0.00	0.00	0.01	-0.01
Black African	-0.04***		-0.01	0.00	0.00	0.03**
Other	-0.03		0.00	0.01	0.00	0.01
Family structure (2 biological-parents)						
Step-parent formal	-0.04***		0.05***	0.01	0.04***	-0.05**
Step-parent informal	-0.01		0.03***	0.00	0.02	0.01
Single-parent alone	-0.17***		0.05***	-0.01	0.06***	-0.07***
Single-parent extended	-0.02**		0.03**	0.01	0.02	-0.02
No biological parents	-0.01		0.02*	0.04**	0.03**	-0.03**
Equivalised income		-0.33***				
Subjective financial difficulties			0.01	0.02	0.04***	-0.03*
Parental degree	0.27***		-0.04**	-0.02	-0.02*	
Latent class (Authoritative)						
Permissive						-0.22***
Authoritarian						-0.07***
Neglectful						-0.49***

Standardised coefficients. *p<0.05; **p<0.01; ***p<0.001. SRMR: 0.027; CD: 0.264

Table 122: Structural equation model of child-reported relationship with father

	Equivalised income	Subjective financial situation	Permissive	Authoritarian	Neglectful	SWB
Female			-0.06***	0.00	0.03**	-0.05***
Age			0.01	0.06***	0.14***	-0.22***
Ethnicity (White)						
Mixed	0.00		-0.02*	0.02*	0.03*	0.00
Indian	-0.03***		-0.03**	0.02*	0.01	0.02**
Pakistani	-0.09***		-0.02**	0.02	0.00	0.02*
Bangladeshi	-0.05***		-0.03***	0.03***	0.01	0.03***
Black Caribbean	-0.00		-0.01	0.02*	0.02	-0.01
Black African	-0.04***		-0.03***	0.04**	0.01	0.03**
Other	-0.03**		-0.01	0.01	0.00	0.01
Family structure (2 biological-parents)						
Step-parent formal	-0.04***		0.01	0.07***	0.06***	-0.04**
Step-parent informal	-0.01		-0.03***	0.06***	0.02**	-0.01
Single-parent alone	-0.17***		-0.05***	0.19***	0.06***	-0.07***
Single-parent extended	-0.02**		0.00	0.05***	0.02	-0.02*
No biological parents	-0.01		0.01	0.05***	0.02	-0.04***
Equivalised income		-0.33***				
Subjective financial difficulties			0.03*	0.00	0.05***	-0.02
Parental degree	0.27***		-0.05***	-0.02	-0.02*	
Latent class (Authoritative)						
Permissive						-0.18***
Authoritarian						-0.12***
Neglectful						-0.50***

Standardised coefficients. *p<0.05; **p<0.01; ***p<0.001. SRMR: 0.028; CD: 0.288

Table 123: Structural equation model of mother-reported relationship with child

	Equivalised income	Subjective financial situation	Permissive	Authoritarian	SWB
Female			-0.01	-0.04**	-0.06***
Age			-0.10***	0.14***	-0.29***
Ethnicity (White)					
Mixed	0.01		0.00	0.04*	0.00
Indian	-0.03***		0.00	0.03*	0.03**
Pakistani	-0.09***		-0.02	0.07***	0.03**
Bangladeshi	-0.05***		-0.02**	0.05***	0.03**
Black Caribbean	-0.01		0.01	0.02*	0.01
Black African	-0.05***		0.00	0.01	0.03**
Other	-0.03**		-0.01	0.04**	0.02
Family structure (2 biological-parents)					
Step-parent formal	-0.05***		0.06**	-0.03**	-0.08***
Step-parent informal	-0.01		0.02	-0.01	-0.02
Single-parent alone	-0.17***		0.01	0.04*	-0.11***
Single-parent extended	-0.02**		0.01	0.01	-0.04*
No biological parents	0.00		0.02	-0.01	-0.02*
Equivalised income		-0.33***			
Subjective financial difficulties			0.08***	0.03	-0.05**
Parental degree	0.27***		-0.08***	-0.02	
Latent class (Authoritative)					
Permissive					-0.09***
Authoritarian					-0.09***

Standardised coefficients. *p<0.05; **p<0.01; ***p<0.001. SRMR: 0.022; CD: 0.280

Table 124: Structural equation model of father-reported relationship with child

	Equivalised income	Subjective financial situation	Permissive	Authoritarian	SWB
Female			-0.03*	-0.02	-0.08***
Age			-0.09***	0.18***	-0.29***
Ethnicity (White)					
Mixed	0.00		-0.01	-0.02	0.00
Indian	-0.04***		-0.01	0.04*	0.04*
Pakistani	-0.10***		-0.01	0.03*	0.04**
Bangladeshi	-0.05***		-0.03**	0.02	0.02
Black Caribbean	0.00		-0.02**	0.01	-0.03
Black African	-0.04***		-0.02***	0.00	0.01
Other	-0.04***		-0.02*	0.02	0.01
Family structure (2 biological-parents)					
Step-parent formal	-0.05***		0.04*	-0.01	-0.08***
Step-parent informal	0.00		-0.02*	0.01*	0.00
Single-parent alone	-0.04***		0.02	-0.03	-0.03
Single-parent extended	0.00		0.01	0.00	0.00
No biological parents	0.00		0.01	-0.01	-0.02
Equivalised income		-0.32***			
Subjective financial difficulties			0.09***	-0.03*	-0.05*
Parental degree	0.29***		-0.07***	-0.05*	
Latent class (Authoritative)					
Permissive					-0.10***
Authoritarian					-0.09***

Standardised coefficients. *p<0.05; **p<0.01; ***p<0.001. SRMR: 0.023; CD: 0.256

Table 125: Structural equation model of child-reported sibling relationship

	Equivalised income	Subjective financial situation	Physical	Verbal	High conflict	SWB
Female			-0.04***	0.02*	-0.02*	-0.07***
Age			-0.11***	0.03*	0.00	-0.30***
Ethnicity (White)						
Mixed	0.00		0.00	0.01	0.00	-0.01
Indian	-0.04***		-0.02*	-0.01	-0.02***	0.01
Pakistani	-0.09***		-0.01	-0.01	-0.01	0.03*
Bangladeshi	-0.05***		-0.01*	-0.02*	-0.02***	0.01
Black Caribbean	-0.01		0.00	-0.01	-0.02**	-0.02
Black African	-0.04***		-0.01	-0.01	-0.01	0.03*
Other	-0.04***		-0.01	0.00	-0.01*	0.02
Family structure (2 biological-parents)						
Step-parent formal	-0.05***		0.00	0.01	0.01	-0.08***
Step-parent informal	-0.02		-0.01	0.01	0.01	-0.02
Single-parent alone	-0.17***		0.01	0.03*	0.05***	-0.09***
Single-parent extended	-0.02**		-0.01	0.00	0.01	-0.05*
No biological parents	0.00		0.00	0.01	-0.01	-0.04**
Equivalised income		-0.33***				
Subjective financial difficulties			0.01	0.00	0.01	-0.05**
Parental degree	0.27***		0.00	0.03*	-0.01	
Latent class (Harmonious)						
Physical						-0.12***
Verbal						-0.23***
High conflict						-0.23***

Standardised coefficients. *p<0.05; **p<0.01; ***p<0.001. SRMR: 0.022; CD: 0.265

Unsurprisingly, given the literature on the earnings returns to education (Bhutoria, 2016), there was a clear association between greater parental education and higher household income in all models (β = 0.27 to 0.29). Furthermore, as would be expected given the evidence of income inequality across ethnic groups in the UK (Fisher and Nandi, 2015), children in some ethnic groups - specifically, Bangladeshi, Pakistani, Indian and Black African groups - had lower household incomes than White children. In terms of family structure, SPA families had markedly lower household incomes, followed by formal step-parent families and SPE families, which reflects the bivariate associations shown in Chapter 4.

In line with the Family Stress Model, lower household income was clear associated with subjective financial difficulties in all models (β = -0.32 to -0.33). In turn, there was evidence of financial stress predicting some – but not all – of the parent-child relationship typologies: subjective financial difficulties were associated with a neglectful relationship in both of the child-reported models, and a permissive relationship in both of the parent-reported models and for the child-reported relationship with father. Parental education was generally protective, with children with a parent holding a degree having a lower likelihood of a permissive or neglectful relationship in all four parent-child models, although for sibling relationships, greater parental education was associated with verbal conflict, as found in earlier analysis.

The relationship between family structure and the relationship typologies varied according to the relationship under consideration in line with the findings of the earlier regressions. For the child-reported typologies, living in an alternative family structure was associated with a neglectful relationship with either parent, as well as an authoritarian relationship with fathers

and a permissive relationship with mothers (although not all the coefficients were significant). Furthermore, in these models, relationship typologies appear to be functioning as mediators: once relationship quality was taken into account, children in informal step-parent and SPE families were no more likely than children in two-biological parent families to have lower SWB. However, for the parent-reported variables, the patterns were less clear. For the relationships with siblings, living in a SPA family was associated with a greater likelihood of both types of conflict, while this was not the case for SPE households, or indeed any of the other family structures, which supports the additional adult hypothesis that extra layers of support within the family may be beneficial for children's behaviour.

In terms of SWB, an authoritative parent-child relationship appeared to be optimal in all of the models. For the child-reported relationship with both mothers and fathers, a neglectful relationship had the largest negative association with SWB compared to the authoritative category (β = -0.49 for mothers and -0.50 for fathers), followed by a permissive relationship (β = -0.22 for mothers and -0.18 for fathers) and an authoritarian relationship (β = -0.07 for mothers and -0.12 for fathers). In the parent-reported models, authoritarian and permissive parent-child relationships had similarly sized negative associations with SWB (β = -0.09 for mothers and -0.09 and -0.10 for fathers). There were also comparably sized associations between sibling relationships and SWB: interestingly, verbal conflict (β = -0.23) and both types of conflict (β = -0.23) had the largest associations, almost twice the size of the coefficient for physical conflict (β = -0.12). Given that parental education is found to be associated with higher verbal conflict, while in turn, verbal conflict is associated with lower SWB, it is possible that this finding can help to explain the association between higher parental education and lower SWB found in earlier analyses.

Mediation can be explored further by decomposing the total associations shown in the tables above into direct and indirect associations. Moreover, this type of analysis allows variables such as parental education and household income, which are not hypothesized to be directly related to SWB, to have indirect associations via other variables included in the models. Indeed, Figure 31 shows that parental education and income have indirect positive associations with SWB via financial difficulties and parent-child relationship quality.
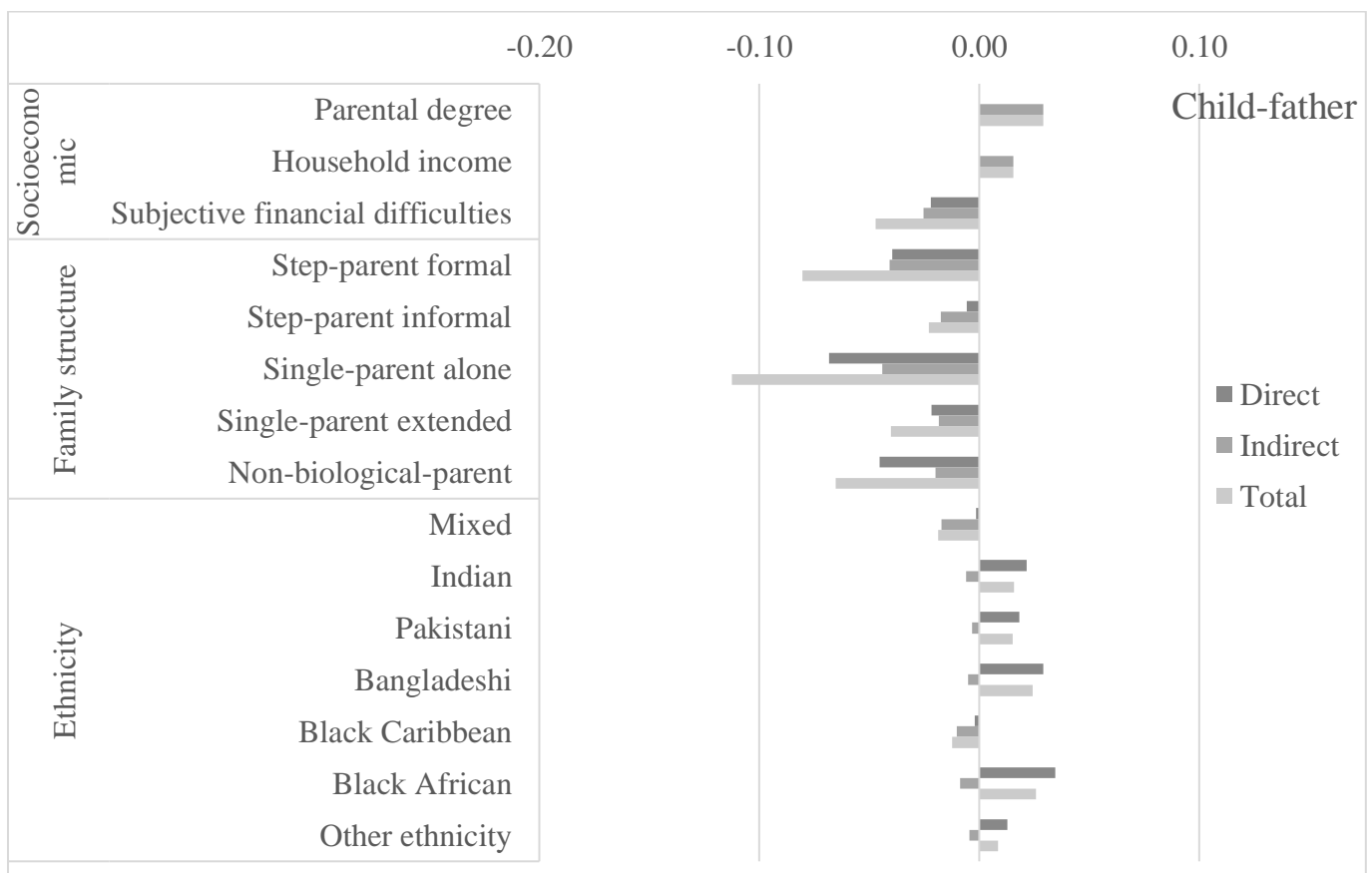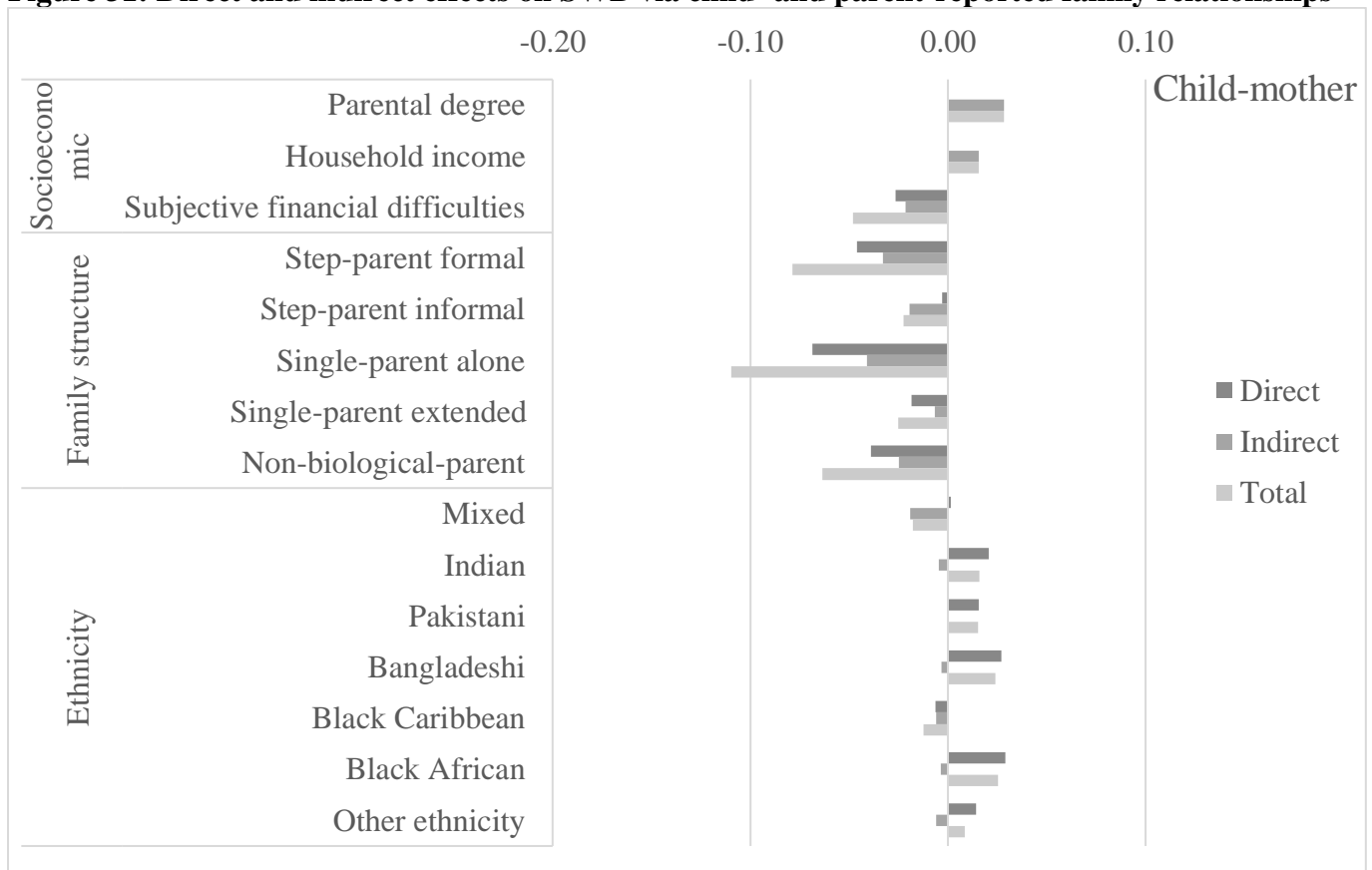
The indirect and direct associations shown in Figure 31 provide evidence of children's relationships with parents mediating the relationship between socioeconomic circumstances and SWB. Furthermore, subjective financial difficulties had both indirect and direct negative associations with SWB. This indicates that, as hypothesized, financial stress within the household is directly related to children's SWB – presumably because children are aware of and troubled by the financial stress that their families are under – as well as an indirectly through the 'spillover effects' hypothesized by the Family Stress Model whereby financial stress puts strain on parental relationships with children.

Figure 31 also provide evidence of relationship quality mediating the relationship between family structure and SWB. Although in most cases, living in a single-parent, step-parent or non-biological-parent family retained a direct negative association with children's SWB, there were also indirect associations via socioeconomic factors and family relationship typologies, which, in these structures, were less likely to be authoritative. Notably, relationship quality appears to be a more important mediator of the relationship between family structure and SWB in the child-reported models. Whereas there were substantial indirect associations with SWB via relationship quality for the child-reported relationship

with mothers and fathers, for the parent-reported and sibling models, the associations between different family structures and SWB were almost entirely direct.

There were also some interesting patterns of direct and indirect associations between ethnicity and SWB, which, in some cases, ran in opposite directions. For Bangladeshi, Indian, Pakistani, Black African and other (including Chinese and Arab) children, ethnicity had a large, positive direct association with SWB, which was attenuated by a small, negative indirect association via the child-parent relationship, which was less likely to be authoritative. In contrast, for Mixed and Black Caribbean children, ethnicity had a negative total association on SWB: for children in both these ethnic groups, a small, negative direct association of ethnicity was added to a larger, negative indirect association via relationship with parents. Furthermore, in relation to siblings, for children in all non-White ethnic groups except Mixed, the indirect associations via sibling relationships were positive, thus, for Indian, Pakistani, Bangladeshi and Black African children, these indirect associations augmented the positive direct associations with SWB. These findings indicate that when considering ethnic differences in children's SWB, it is important to take account of pathways via relationship quality, which in some cases appear to have a suppressor effect.

Figure 31: Direct and indirect effects on SWB via child- and parent-reported family relationships

Child-mother

Socioeconomic: Parental degree, Household income, Subjective financial difficulties

Family structure: Step-parent formal, Step-parent informal, Single-parent alone, Single-parent extended, Non-biological-parent

Ethnicity: Mixed, Indian, Pakistani, Bangladeshi, Black Caribbean, Black African, Other ethnicity

Legend: Direct, Indirect, Total

Child-father

Socioeconomic: Parental degree, Household income, Subjective financial difficulties

Family structure: Step-parent formal, Step-parent informal, Single-parent alone, Single-parent extended, Non-biological-parent

Ethnicity: Mixed, Indian, Pakistani, Bangladeshi, Black Caribbean, Black African, Other ethnicity

Legend: Direct, Indirect, Total

To explore whether different relationships in the model are particularly salient for children of different sexes or ages, the two structural equation models relating to child-reported relationships with mothers and fathers were run separately for boys and girls, and older children (aged 13 to 15) compared to younger children (aged 10 to 12). As can be seen in Tables 126 and 127, there was a stronger association between the parent-child relationships - especially the neglectful typology - and SWB for girls. This finding is consistent with other research highlighting that a close, supportive mother-child relationship is protective against depressive symptoms for girls (Merten and Henry, 2011), and suggests that a close father-child relationship may also be protective. There was also a stronger association between subjective financial difficulties and SWB for boys than girls, which is unexpected given other evidence suggesting that it is girls rather than boys for whom a socioeconomic gradient in SWB appears in adolescence (Patalay and Fitzsimons, 2018). However, Tables 126 and 127 also show that household income appears to be more strongly associated with subjective

financial difficulties for girls (although non-significant), which suggests that income may

exert its influence earlier in the path model.

Table 126: Associations between subjective financial difficulties, family structure and SWB and child-reported relationship with mother by sex and age of the child

		Male	Female		Younger	Older
Association with SWB						
Subj fin	***	-0.07	0.00	NS	-0.03	-0.03
Permissive	NS	-0.22	-0.21	**	-0.21	-0.24
Authoritarian	*	-0.06	-0.08	NS	-0.08	-0.07
Neglectful	**	-0.43	-0.53	NS	-0.45	-0.52
Association with subjective financial difficulties						
Equivalised income	NS	-0.16	-0.35	NS	-0.15	-0.34
Association with neglectful mother-child relationship						
Subj fin	NS	0.05	0.03	NS	0.04	0.04
Step-parent formal	NS	0.05	0.04	*	0.03	0.06
Step-parent informal	NS	0.01	0.02	NS	0.03	0.01
Single parent alone	†	0.05	0.08	*	0.05	0.08
Single parent extended	NS	0.03	0.02	NS	0.01	0.04
Non-biological-parent	**	0.00	0.06	NS	0.04	0.03
Association with authoritarian mother-child relationship						
Subj fin	†	0.03	0.00	NS	0.01	0.03
Step-parent formal	NS	0.01	0.02	NS	0.01	0.02
Step-parent informal	NS	0.01	-0.00	NS	0.01	0.00
Single parent alone	NS	-0.02	-0.00	NS	-0.01	-0.01
Single parent extended	NS	0.00	0.01	†	0.00	0.02
Non-biological-parent	NS	0.03	0.05	NS	0.05	0.03
Association with permissive mother-child relationship						
Subj fin	NS	0.01	0.01	NS	0.01	0.01
Step-parent formal	NS	0.05	0.04	NS	0.06	0.04
Step-parent informal	NS	0.03	0.04	NS	0.03	0.04
Single parent alone	NS	0.06	0.05	NS	0.06	0.05
Single parent extended	NS	0.04	0.02	*	0.05	0.01
Non-biological-parent	NS	0.03	0.01	NS	0.01	0.03

Standardised coefficients. †$p<0.1$; *$p<0.05$; **$p<0.01$; ***$p<0.001$.

Table 127: Associations between subjective financial difficulties, family structure and SWB and child-reported relationship with father by sex and age of the child

		Male	Female		Younger	Older
Association with SWB						
Subj fin	***	-0.06	0.01	NS	-0.02	-0.03
Permissive	NS	-0.19	-0.17	NS	-0.19	-0.19
Authoritarian	NS	-0.11	-0.13	NS	-0.13	-0.13
Neglectful	*	-0.45	-0.53	NS	-0.46	-0.53
Association with subjective financial difficulties						
Equivalised income	NS	-0.16	-0.33	NS	-0.15	-0.34
Association with neglectful father-child relationship						
Subj fin	NS	0.05	0.04	*	0.03	0.06
Step-parent formal	NS	0.06	0.06	**	0.04	0.08
Step-parent informal	†	0.01	0.04	NS	0.03	0.02
Single parent alone	†	0.04	0.08	NS	0.06	0.07
Single parent extended	NS	0.03	0.01	NS	0.00	0.03
Non-biological-parent	**	-0.01	0.04	NS	0.02	0.02
Association with authoritarian father-child relationship						
Subj fin	†	0.01	-0.00	NS	-0.01	0.02
Step-parent formal	NS	0.06	0.08	NS	0.07	0.07
Step-parent informal	NS	0.06	0.07	NS	0.07	0.06
Single parent alone	NS	0.18	0.19	NS	0.21	0.17
Single parent extended	NS	0.05	0.05	NS	0.05	0.05
Non-biological-parent	*	0.03	0.07	NS	0.05	0.05
Association with permissive father-child relationship						
Subj fin	NS	0.03	0.03	NS	0.02	0.03
Step-parent formal	NS	0.01	0.01	NS	0.02	0.00
Step-parent informal	NS	-0.03	-0.03	NS	-0.02	-0.03
Single parent alone	NS	-0.05	-0.05	NS	-0.06	-0.04
Single parent extended	NS	0.00	0.00	*	0.02	-0.02
Non-biological-parent	NS	0.02	0.00	NS	0.01	0.01

Standardised coefficients. †$p<0.1$; *$p<0.05$; **$p<0.01$; ***$p<0.001$.

In relation to family structure, Tables 126 and 127 show that the association between living in a SPA family or a non-biological parent family and the likelihood of having a neglectful parent-child relationship was stronger for girls than boys. This suggests that parent-child relationship quality may mediate the relationship between family structure and SWB more strongly for girls than boys.

Turning to age differences, interestingly, a neglectful mother-child relationship had a more negative association with SWB for older than younger children, which highlights the continuing importance to children of a supportive maternal relationship as they enter adolescence and become more autonomous (Raws, 2022). In parallel, family structure – specifically, being in a formal step-parent or single-parent family – was more strongly associated with a neglectful parent-child relationship for older compared to younger children. Conversely, being in a SPE family was associated with a greater likelihood of a permissive parent-child relationship for younger than older children. Although surprising that younger rather than older children experience greater permissiveness, this finding is consistent with research that finds children in middle childhood in SPE families to have especially challenging behaviour, which may relate to extended family members (usually grandparents) being perceived as 'interfering' rather than supportive to children at that age (Stolba and Amato, 1993). There also appeared to be age differences (non-significant) in the association between income and subjective financial difficulties, with a stronger relationship for older than younger children, which may reflect the increasing material needs of adolescents as they enter their teenage years.

Similar analysis of the sibling relationships shown in Table 128 indicates that there do not appear to be any differences in the associations between sibling conflict and SWB for girls compared to boys, or for older children compared to younger children. However, once sibling relationships were taken into account, being in a SPA family had a stronger association with SWB for older than younger children.

Table 128: Associations between family structure, sibling relationship typology and SWB by sex and age of the child

Association with SWB		Male	Female		Younger	Older
Physical conflict	NS	-0.13	-0.11	NS	-0.12	-0.10
Verbal conflict	NS	-0.24	-0.23	NS	-0.24	-0.24
High conflict	NS	-0.20	-0.21	NS	-0.22	-0.20
Step-parent formal	NS	-0.09	-0.07	NS	-0.08	-0.09
Step-parent informal	NS	-0.03	-0.02	NS	-0.03	-0.02
Single parent alone	NS	-0.09	-0.09	†	-0.08	-0.11
Single parent extended	NS	-0.07	-0.02	NS	-0.04	-0.06
Non-biological-parent	NS	-0.03	-0.04	NS	-0.05	-0.04

Standardised coefficients. †p<0.1; *p<0.05; **p<0.01; ***p<0.001.

To address the hypothesis that measures of child-reported measures of children's economic circumstances that take the child as the unit of analysis and are 'child-centred' will have a stronger relationship to children's SWB than 'adult-centred' measures, the model for the child-reported mother-child relationship was run again with the addition of the child-reported variables of whether children have pocket money/savings, whether they feel unsafe in their local areas after dark, and whether they worry about crime. As this analysis relates to just waves 5, 7, and 9 of the UKHLS - when these child-reported questions were asked - it has a different sample size to the analysis presented in Table 121 (N=9,276). Table 129 shows that household income was related to both adult-reported subjective financial difficulties and the child-reported measure of pocket money/savings and feeling unsafe in the local area but not worry about crime, which reflects the bivariate associations shown earlier. In turn, two of the child-reported measures predicted child-mother relationship quality: children without pocket money/savings and children who worry about crime were more likely to have a neglectful or permissive relationship with their mother, while the latter group of children were also less likely to have an authoritarian relationship.

Table 129: Structural equation model of child-reported relationship with mother, socioeconomic and neighbourhood variables

	Equivalised income	Subjective financial difficulties	No pocket money or savings	Feel unsafe in local area	Worry about crime	Permissive	Authoritarian	Neglectful	SWB
Female						-0.05**	-0.10***	0.02	-0.05**
Age						0.00	0.06***	0.13***	-0.26***
Mixed	0.01					0.00	0.01	0.02	0.02
Indian	-0.03*					-0.03**	0.03*	0.00	0.03*
Pakistani	-0.08***					-0.01	0.00	-0.01	0.04***
Bangladeshi	-0.05***					-0.03***	0.01	-0.01	0.03***
Black Caribbean	-0.01					-0.00	-0.01	0.01	-0.01
Black African	-0.05***					-0.01	-0.01	-0.01	0.03
Other	-0.04***					-0.00	0.02	0.01	0.03*
Step-parent formal	-0.03*		0.06**	-0.00	0.01	0.03	0.03	0.05**	-0.04*
Step-parent informal	-0.02*		0.02	-0.01	-0.02	0.05**	0.01	0.01	0.00
Single-parent alone	-0.16***		0.04*	0.01	-0.02	0.02	-0.01	0.08***	-0.07**
Single-parent extended	-0.02		0.00	0.04***	-0.00	0.02	0.02*	0.02	-0.02
No biological parents	0.00		0.01	-0.01	-0.02	0.02	0.03	0.05*	-0.04*
Parental degree	0.26***					-0.05**	-0.02	-0.00	
Equivalised income		-0.31***	-0.06***	-0.08***	-0.02				
Subj. financial difficulties						0.00	0.02	0.05**	0.00
No pocket money / savings						0.04*	0.02	0.10***	-0.07***
Feel unsafe in local area						0.00	-0.02	-0.00	-0.10***
Worry about crime						0.10***	-0.05**	0.05**	-0.17***
Permissive									-0.20***
Authoritarian									-0.08***
Neglectful									-0.46***

Standardised coefficients. *p<0.05; **p<0.01; ***p<0.001. SRMR: 0.035; CD: 0.296, N=9,276

Once the mother-child relationship was controlled, all three child-reported measures retained a direct effect on SWB (β =-0.07 for pocket money/savings, -0.10 for feeling unsafe and -0.17 for worry about crime), however, there was no association with subjective financial difficulties. This finding that child-reported measures of socioeconomic disadvantage have a direct association with SWB as well as indirect associations via the mother-child relationship is in line with qualitative research showing that children's awareness of - and worry about - economic hardship and parental financial stress affects their quality of life, not just because it places strain on their relationships with parents (Mahony *et al.*, 2017).

For the moderation analysis, this model was run again using the group option to test the hypothesis that parent-child relationship problems will have a stronger association to SWB for children experiencing socioeconomic disadvantage than for children in more affluent circumstances (H3). The association between an authoritarian mother-child relationship and SWB appeared to be less strong (β = -0.07) for children who do not have savings / pocket money than for those who do (β = -0.09). Conversely, the association between a neglectful mother-child relationship and SWB appeared to be slightly stronger (β = -0.50) for children who do not have savings / pocket money compared to those who do (β = -0.44). However, Wald tests indicated that neither of these differences were significant.

Finally, to explore interactions between children's different family relationships, the group option was used to test the hypothesis that the association between sibling relationship quality and SWB will vary according to the type of parent-child relationship that children have (H3). Table 130 below shows the associations between sibling relationships and SWB according to the child-mother and child-father relationship typology.

The association between high levels of both verbal and physical conflict and SWB was higher for children with a neglectful relationship (β =-0.19 for mother-child, β =-0.24 for father-child) compared to an authoritative relationship (β =-0.15 for mother-child, β =-0.13 for father-child). This suggests that when sibling conflict involves high levels of both types of conflict, a lack of parental support may mean a 'double whammy' of difficult family relationships for children. In addition, in the father-child relationship, the association between verbal conflict and SWB was greater for children with a neglectful ($\beta = -0.27$) compared to an authoritative typology ($\beta = -0.19$).

On the other hand, for the mother-child relationship, the association between verbal conflict and SWB was *lower* for those with a neglectful ($\beta = -0.17$) compared to an authoritarian typology ($\beta = -0.23$). Furthermore, the association between physical conflict and SWB was also lower for children with a neglectful relationship (β =-0.07 for mother-child, β =-0.08 for father-child) compared to an authoritarian relationship (β =-0.15 for mother-child, β =-0.11 for father-child). This suggests that physical conflict between siblings may be normative in the context of low levels of parental supervision, and the same may be true of verbal conflict with respect to maternal supervision. Research has shown that conflict with siblings can be constructive as it presents children with the opportunity to develop their conflict-resolution skills and regulate their emotions; however, it can also be destructive (Pickering and Sanders, 2017). Further research would attempt to elucidate which aspects of the family environment can help to explain differences in how children's relationships with their fathers, mothers and siblings relate to their SWB, including whether sibling rivalry arises from differential treatment or a lack of parental support.

Table 130: Associations between sibling relationships and SWB by child-reported relationship with mothers and fathers

	Child-reported relationship with mother			
	Neglectful	Authoritarian	Permissive	Authoritative
Physical conflict	-0.07	-0.15	-0.08	-0.08
Verbal conflict	-0.17	-0.23	-0.19	-0.20
Both types of conflict	-0.19	-0.15	-0.16	-0.15
	Child-reported relationship with father			
	Neglectful	Authoritarian	Permissive	Authoritative
Physical conflict	-0.08	-0.11	-0.07	-0.09
Verbal conflict	-0.27	-0.19	-0.25	-0.19
Both types of conflict	-0.24	-0.13	-0.22	-0.13

Standardised coefficients. †$p<0.1$; *$p<0.05$; **$p<0.01$; ***$p<0.001$.

Discussion

Research with children points to the fundamental importance of relationships with family for children's quality of life (Rees and Pople, 2006). However, it is not always clear whether and how socioeconomic disadvantage affects children's relationships, or if relationship quality has a differential impact on children's SWB in different socioeconomic circumstances. Although family relationship problems are present across the income distribution, there is evidence of higher rates of problems amongst households experiencing financial stress (Gibb *et al.*, 2016). Qualitative research offers insights into children's perspectives of living in low-income households and the ways in which financial stress can affect their social relationships. This includes a keen awareness amongst children of stress experienced by family members arising from financial problems, and pain caused by not being able to have - or do - the same things as their peers (Mahony *et al.*, 2017; Ridge, 2002).

This emphasis within qualitative research on the importance of children's own perceptions of and responses to financial stress contrasts with the causal mechanisms hypothesised by the Family Stress Model, which focuses on parents as the primary actors (and respondents). Although in much research it is acknowledged that children and parents may have different perspectives on their relationship, rarely are these modelled. In this analysis, both children's and parents' perspectives on the quality of their relationships were considered. Analysis of similarly worded questions asked of both parents and children highlights considerable divergence in responses about how much they talk and argue, with children reporting less talking but fewer arguments than their parents.

The majority of children and parents make positive assessments of relationship quality, but this varies according to the aspect of relationships being considered. While all but a tiny proportion of children felt supported by their family, about a quarter had been frequently called nasty names, teased or hit by their siblings, and more than a third said that they hardly ever talked to their father. At the bivariate level, all of the child-reported measures of family and sibling relationships were related to the two measures of SWB (the 4-domain SWB and the likelihood of having low overall SWB).

Descriptive analysis of the parent-reported measures of family relationships identified a number of non-normative parenting behaviours. For example, very small proportions of mothers and fathers said that they rarely praised or cuddled their children, or very often slapped them. Frequent shouting at - or arguing with - children was relatively more common, with about a quarter of mothers and a fifth of fathers reporting these behaviours. In comparison, approximately equal proportions of parents said that they were strict, not very

strict or varied in enforcing rules, suggesting that none of these approaches could be considered normative.

At the bivariate level, some of the child- and parent-reported measures of relationship quality were associated with household income quintile, with children in lower income quintiles generally reporting worse relationship quality. There was a clear social gradient for all of the child-reported measures of parental support and supervision, as well as for physical conflict and name-calling amongst siblings, and the negative parent-reported measures of arguing, slapping and shouting at children. Although these relationships were not always monotonic across the quintiles, children and parents in the lowest quintile gave lower ratings of relationship quality than those in the highest quintile. These findings are similar to Cooper (2020) who found differences in parenting across the income spectrum and that 'poor' parenting is not specific to the lowest income households. For numerous behaviours, as income increases, so too does 'ideal' parent-child and sibling relationships. However, for some of the child-reported measures of family relationships – notably, children teasing or being teased by siblings - and several of the positive parent-reported measures of relationships with their children, the association with household income quintile was not statistically significant. Moreover, rule enforcement was an interesting exception to the general pattern: contrary to expectations, mothers and fathers in the highest income quintiles were the least likely to enforce rules strictly. Nonetheless, as a whole, there was indicative evidence of children's relationships mediating the relationship between socioeconomic circumstances and SWB.

Latent class analysis of the child-reported measures of children's relationships with their mothers and fathers identified four latent classes that approximated the four typologies

identified in the parenting literature. The two largest classes were authoritative and permissive, characterised by high levels of parental warmth and family support, while the two smaller classes were authoritarian and neglectful, characterised by lower levels of warmth. Furthermore, the permissive and neglectful classes had lower levels of parental monitoring and more frequent arguments. Younger children, girls, children in two biological-parent families and those with higher levels of parental education were more likely to experience an authoritative relationship with both mothers and fathers, characterised by high levels of parental warmth and supervision. In contrast, boys and children in step- or single-parent families were more likely to experience a permissive relationship, characterised by greater levels of autonomy, while older children were more likely to experience an authoritarian or neglectful relationship, with lower levels of warmth.

Parallel analysis of the parent-reported variables produced similar patterns for both the mother-child and father-child relationships. The largest of the three latent classes was an 'authoritative' class, identified by high levels of warmth and low levels of harsh discipline, followed by a 'permissive' class, with comparatively high levels of parental warmth accompanied by high levels of harsh discipline and lower parental supervision, and an 'authoritarian/neglectful' class, which was notable for its low levels of parental warmth. Again, age and sex of the child predicted parenting typologies in similar ways to the child-reported relationships, which is surprising given that the parent-reported questions relate to all children in the household rather than the particular child in question. However, other predictors of the parent-reported relationships were distinctive. For example, whilst none of the socioeconomic factors other than parental education predicted child-reported relationships, income and subjective financial difficulties were associated with the parent-reported typologies.

Latent class analysis was also carried out with a series of questions about sibling conflict and generated typologies that are resonant of bullying research in which children can be differentiated on the basis of involvement - or lack of involvement - in conflict, and whether that conflict is physical or verbal in nature. In line with the bullying literature (Whitney and Smith, 1993; Smith *et al.*, 1999; Wolke *et al.*, 2001), younger children and boys were more likely to be involved in physical conflict with their siblings, while girls were more likely to be involved in verbal conflict, and older children were more likely to report harmonious relationships.

A series of regressions examined associations between different typologies of parent-child relationships and SWB, controlling for children's characteristics and socioeconomic circumstances. Notably, children had 25 to 28 times higher odds of low SWB– and scored about 6 points lower on the 4-domain measure - if they had a neglectful mother- or father-child relationship. These are large differences and indicate that a lack of warmth in the parent-child relationship has an important association with SWB. Children also had substantially lower SWB if they had an authoritarian or permissive relationship with their mother or father. The parent-reported relationship typologies had less strong associations with SWB, but they were all statistically significant. For sibling relationships, children had two to three times higher odds of lower SWB - and scored one to two points lower on the 4-domain measure – if they were involved in conflict with their siblings, and interestingly, verbal conflict had a stronger association with SWB than physical conflict. These regressions provide strong evidence to support the hypothesis that children experiencing difficulties in their family relationships have lower SWB than children without such problems.

To explore whether financial stress has an indirect on children's SWB via reductions in parent-child relationship quality, as hypothesised by the Family Stress Model, structural equation modelling was used to carry out mediation analysis. For the child-reported models, greater subjective financial difficulties were associated with a higher likelihood of having a neglectful mother- or father-child relationship and a permissive father-child relationship, both of which had notably strong associations with SWB. In all models including the parent-reported ones, higher parental education predicted a lower likelihood of a permissive relationship, which was associated with lower SWB, while in the parent-reported models, greater subjective financial difficulties predicted a higher likelihood of a permissive parent-child relationship. There is evidence, then, to support the hypothesis that economic disadvantage causes or exacerbates family relationship problems, which, in turn, lead to lower SWB. For child-reported relationships that are low in warmth, this appears to be driven by financial stress, as hypothesised by the Family Stress Model. However, differences in levels of permissiveness, which is also associated with SWB, appeared to be driven more by parental education than by economic circumstances, indicating that the causal mechanisms hypothesised by the Family Stress Model are less relevant to this typology of parent-child relationship.

The structural equation models were also run separately for boys and girls, and older children (aged 13 to 15) compared to younger children (aged 10 to 12). There was a stronger association between the parent-child relationships and SWB for girls, especially in respect of the neglectful typology, and for older children in respect of the permissive typology. Furthermore, the association between living in a SPA family or a non-biological parent family and a neglectful parent-child relationship typology was stronger for girls than boys.

This suggests that parent-child relationship quality may mediate the relationship between family structure and SWB more strongly for girls than boys.

The theoretical framework relating to the Family Stress Model could equally be applied to children's relationships with siblings if financial stress has spill-over effects onto multiple aspects of family functioning. However, when structural equation modelling was used to explore sibling relationships in the same way as for parent-child relationships, no consistent relationship with socioeconomic variables was found. Moreover, an unexpected finding emerged of higher levels of verbal conflict amongst children in households with greater parental education. This finding fits with the leniency in rule enforcement found amongst parents in higher income quintiles and may be explained by Lareau's hypothesis of 'concerted cultivation' amongst middle-class children, in which automatic deference to adults is not expected and verbal negotiation is actively encouraged (Lareau, 2011). Thus, there is less convincing evidence to support the mediation hypothesis of economic disadvantage leading to problems in children's relationships with their siblings. However, sibling conflict appears to have knock-on effects for SWB, as children experiencing all three typologies of conflict had lower SWB in the structural equation models.

The measure of household income described thus far provides important information about children's socioeconomic circumstances. However, as shown in Chapter 3, adult-reported, household-centred measures are not well suited to capturing the resource-sharing that takes place within households and children's perspectives on this. For this reason, this chapter also considers three of the child-reported measures of socioeconomic and neighbourhood factors. A structural equation model containing these measures showed that the child-reported measure of worry about crime had a stronger association with the mother-child relationship

than any of the adult-reported measures, while the measure of pocket money and savings was associated with a neglectful relationship. All three child-reported measures also retained direct associations with SWB. Thus, there is evidence to support the hypothesis that in addition to indirect paths via family relationship quality, socioeconomic disadvantage is directly associated with SWB, and that measures of socioeconomic circumstances that are child-reported and take the child as the unit of analysis have stronger association with SWB than adult-centred ones.

Moderation analysis indicated that although the family relationship variables appeared to have a stronger effect on the SWB of children in families that are disadvantaged, most of these differences were not statistically significant. Thus, there is insufficient evidence to support the hypothesis that family relationship problems occurring within a context of economic disadvantage are especially difficult for children to cope with. However, interestingly, there were some interactions between sibling and parent-child relationships. Specifically, the effect of high levels of both type of conflict with siblings was greater for children with a neglectful - compared to an authoritative or authoritarian relationship - with either their mother or their father. It appears that children find it more difficult to cope with high conflict with their siblings if they lack a supportive relationship with their parents, perhaps because this absence of parental support reflects low levels of positive, verbal interactions that would act as positive examples to follow.

A final thought relates to the terminology used in this chapter to describe children's relationships with their parents. Although the language of 'parenting' has a rich tradition of research, and is a valuable lens through which to think about qualitative differences in children's family relationships, the findings in this chapter support other studies highlighting

the significant shortcomings of research designs and language that neglect to account for the reciprocal nature of these critical relationships in children's lives. Just as Chapter 3 and other studies (Main, 2018; Mahony *et al.*, 2017; Ridge, 2009) have shown that children are not passive recipients of material resources - but active participants who employ different strategies in response to their situations and perceive their circumstances in different ways – the same is true of their relationships. Thus, they may have divergent perspectives on the quality of their dyadic relationships from those on the other side, and both sides need to be considered in order to deepen understanding of whether and how these relationships shape children's quality of life.

Chapter 6: Concluding chapter

Key findings and contributions

This thesis seeks to understand how different constellations of socioeconomic circumstances and family contexts combine to explain differences in children's quality of life, as measured through self-reported measures of SWB. It is situated within a small but growing cohort of studies focused on the individual, family, neighbourhood and socioeconomic correlates of children's SWB. These factors have been studied extensively in relation to other children's outcomes such as emotional and behavioural difficulties or educational attainment. Theoretical frameworks and empirical findings from the study of children's mental health and other outcomes are useful - and transmissible - to the study of children's SWB. Indeed, this thesis draws heavily on these to provide a knowledge base and theoretical framework with which to think about explanations for differences in children's SWB. However, increasingly research has recognised that different dimensions of children's mental health – and different aspects of SWB - have different predictors, and there are reasons to highlight the value of children's SWB research as a distinctive – but related – field of study.

In addition to augmenting the research base in relation to a comparatively neglected field of study, a central motivation for this thesis is to foreground children's accounts in research that seeks to understand their well-being. A long tradition of philosophical thought has emphasised the significance of SWB as the 'highest good and ultimate motivation for human action' (Diener, 1984). However, whilst there has been a proliferation of research in recent decades on what well-being means to adults, what aspects of life are most salient, and what the construct, causes and consequences of adult SWB are, the same is not true of children's SWB. Indeed, much research on child well-being excludes children's perspectives from its ambit. Indisputably, multiple perspectives on different aspects of children's lives are essential

for building a rounded picture of the quality of children's lives. However, the central proposition of this thesis is that children's thoughts, feelings and opinions need to be at the centre of this.

Figure 32 shows the overall conceptual model and the main paths explored in different chapters. This is referred to in the discussion of the key findings and contributions arising from this thesis.

Figure 32: Overall conceptual framework showing hypothesized relationships between children's socioeconomic & family circumstances, family relationships and SWB
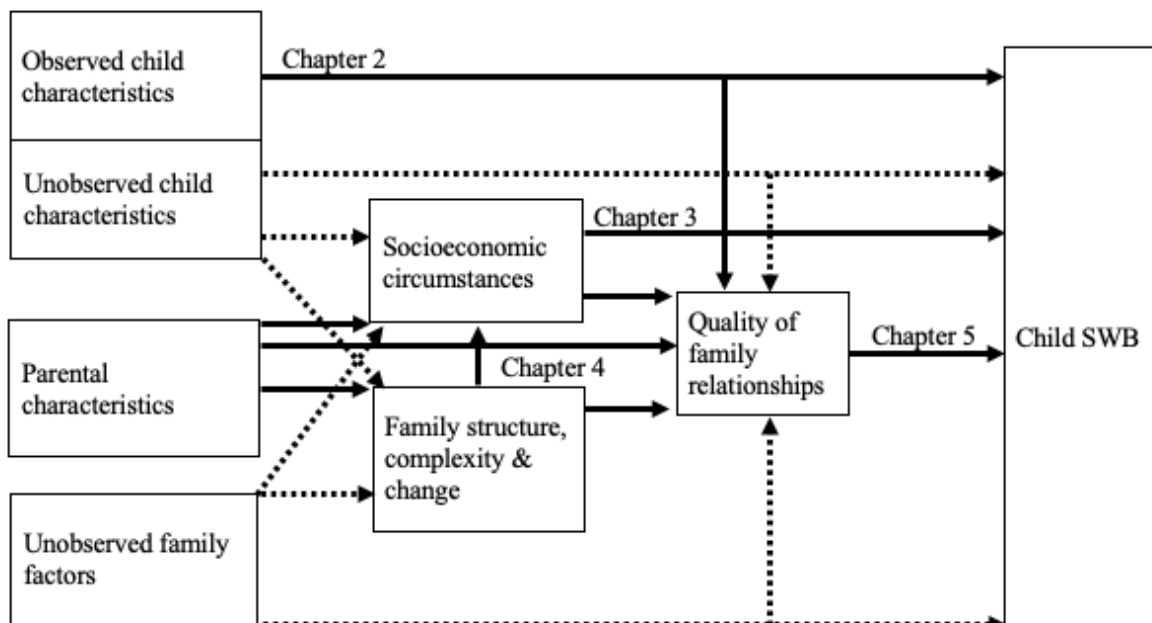
A considerable strength of the analysis in this thesis is that it is based on data from a large-scale household study that is designed to be representative of the UK population, thus, the findings are generalisable to the whole population of children living in the UK. Furthermore, the stratified design of the UKHLS and two ethnic minority boost samples mean that the sample size is large and diverse enough to consider sub-group differences such as how SWB varies between children in different ethnic groups, which is not possible in studies with smaller sample sizes or different designs. This means it is possible to discern differences in SWB, socioeconomic

circumstances and family relationship quality experienced by Black African and Black Caribbean children, for example, when much research on children combines these categories of ethnicity.

The UKHLS study design also means that it is possible to observe children longitudinally, which can help with causal inference by using the temporal ordering of events to draw conclusions about plausible causes of children's SWB. Furthermore, the fixed and random effects models in Chapters 3 and 4 are able to take account not just of the time ordering of events but also the time-invariant, person-specific factors that are unobserved such as children's genetic inheritance, stable personality traits, and unmeasured aspects of their family, school or neighbourhood contexts that do not change over time.

Limitations

As the discussions at the end of each empirical chapter – and the summaries in the rest of this chapter - outline the various shortcomings of the analysis presented in this thesis, this section is limited to a few overarching comments about the nature of these limitations. Following on from the discussion of the various strengths of this analysis, it is important to highlight that despite there being repeated observations of children on which to make inferences about the causal ordering of events, as this thesis is entirely based on observational data, none of the analysis demonstrates causality.

As described in Chapter 4 in relation to research on family structure, there are two distinctive methodological traditions in research with children: smaller-scale, in-depth - often qualitative - studies that are able to capture the rich detail of social changes and processes, and larger-scale, representative – usually quantitative - studies that are generalisable to the whole population of children and can take into account the diversity of circumstances in which

children live. Rarely is it possible to combine the depth of insight gained from the former approach with the generalisability of the latter. Despite the fact that the analysis in this thesis is informed by both quantitative and qualitative literatures from a range of different academic disciplines, this thesis is no different in this regard as it is entirely based on secondary analysis of survey data.

Thus, although a specific concern of this thesis is to focus on child-centred measurement – of well-being, family relationships and socioeconomic circumstances – it is important to highlight that there are very few measures in the UKHLS to draw upon. Thus, it was not possible to fully explore children's views and experiences of their socioeconomic contexts, the emotional and financial role that grandparents and other extended family members play in children's lives, whether siblings have differential access to material resources and emotional support within the household, and what aspects of family relationships are most influential for children who do not live with two biological parents. As a result, some of the findings in this thesis may underplay – or indeed overplay – the importance of these themes for children's SWB. Future research will develop these themes further, as described in more detail in the following sections.

New understanding of the measurement of children's SWB

Much research on children's SWB in the UK is atheoretical about SWB measurement, thus, this study provides a novel contribution to the literature in this regard. The analysis presented in the Chapter 2 demonstrates that combining domains and life as a whole into a composite measure of SWB lacks conceptual clarity. It mixes two theoretical frameworks for understanding SWB - bottom-up and top-down approaches - and gives equal weighting to overall and domain measures. Moreover, the six-item measure typically used does not have

good psychometric properties for the whole population, or for subgroups. As a result, differences by sex, ethnicity and age reported in the literature – as well as interactions between these and other predictors - may not be true differences but reflect the way in which measurement differs for these subgroups. The analysis threw a spotlight on the appearance domain, which appeared to have different salience to children with different characteristics.

These issues will not be resolved by using the 4-domain measure used in this thesis, but there is likely to be less confounding with measurement error using this approach, and conceptually this approach is more defensible. Composite scores have the effect of concealing - or amplifying - differences between subgroups of children, who may have divergent interpretations - or prioritise different domains - of SWB. Thus, this thesis considers different measures of SWB and reflects upon the differences when interpreting results. Future research on children's SWB should develop these measurement issues to explore whether additional domains of SWB that are salient to children of different ages, sexes and ethnicities would improve the conceptual and statistical properties of a multi-domain measure. This would likely involve the inclusion of domains relating to children's material environments – including the home, money and possessions, neighbourhood – as well as their health, and multi-item measures of overall SWB.

Child-centred poverty measurement: true differences in perspective versus measurement error

Chapter 3 was concerned with making sense of divergent findings from qualitative and quantitative research as to the nature of the relationship between children's socioeconomic circumstances and their SWB. Whilst qualitative research with children indicates that socioeconomic disadvantage can have a profound effect on children's social relationships and

quality of life, the few UK studies to explore this quantitatively have found only modest relationships between children's socioeconomic circumstances and SWB (Powdthavee and Vernoit, 2013; Knies, 2017; Rees and Bradshaw, 2018; Patalay and Fitzsimons, 2016; Patalay and Fitzsimons, 2018). A key proposition of Chapter 3 is that part of the explanation for this relates to the way that children's socioeconomic circumstances are measured, which often does not take account of what children think and feel about their material circumstances and how resources are shared within and between households. Various socioeconomic measures in the UKHLS were assessed in terms of their ability to capture the specific circumstances of individual children and children's own perspectives of what is needed for social participation and an acceptable standard of living.

In cross-sectional analysis, all of the measures of socioeconomic disadvantage except income poverty and overcrowded housing were associated with low satisfaction with life as a whole once a range of controls for children's individual and family characteristics were included. However, only some of these associations held for the 4-domain measure of SWB because some of the constituent domains – notably, appearance, family and friends – had less of a social gradient than the overall measure. Nonetheless, direct measures of children's living standards, such as material deprivation, housing tenure and inadequate heating, and measures that capture children's awareness and perspectives on their material situations, such as parental subjective financial difficulties and the child-reported measures, were associated with both the 4-domain measure and measure of life as a whole. In longitudinal analysis focused on changes in children's socioeconomic circumstances over time, the only variables to predict SWB were the child-reported measures of access to pocket money or savings and neighbourhood quality and safety.

There are potential challenges to these findings about the importance of child-reported measures for SWB, including on the basis that they are bound to be strongly associated given that there is shared method variance, and unobserved characteristics of individual children may explain both their perceptions of their material circumstances and self-reported quality of life. However, the longitudinal method used to assess changes over time in children's circumstances and SWB allows for time-invariant unobserved characteristics of children to be disregarded. Thus, if children's personalities and outlooks on life are colouring judgements of both socioeconomic factors and their well-being – which is likely to be the case given research findings of personality effects on adult SWB – then to the extent that child-specific factors remain the same over time, they can be discounted.

Furthermore, the literature on adult SWB points to the importance of conceptualising subjective judgements as 'closer in the causal chain to SWB' than objective conditions, and operating as mediators (Diener, 1984). In this sense, contextual factors such as parental employment and household income can be thought of as inputs that influence families' living standards, which, in turn, contribute to adults' and children's perceptions of financial circumstances, with knock-on effects for children's SWB. Indeed, when subjective measures are modelled as intervening variables between household income and children's SWB, as they are in Chapter 5, there is evidence of both child- and adult- perceptions of material circumstances acting as mediators along this pathway. Although children - like adults - are constrained by the structures in which they are situated, they also have agency, make choices and engage in strategies in response to the constraints of their social circumstances (Ridge, 2002; Mahony *et al.*, 2017; Main, 2018). Many of these choices and strategies are not observable, however, the subjective measures are likely to 'mop them up' as they give an indication of the extent to which contextual disadvantage has been addressed through the

expression of parental or child agency and/or results in perceived financial difficulties and lower SWB. There is a congruence here with needs- and capability-based models that conceive of the satisfaction of material and physiological needs as antecedent - and lower in the hierarchy - to individual agency in the achievement of well-being (Maslow, 1987; Sen, 1992).

Thus, this analysis highlights the value to research on children's SWB of child-reported variables about their material contexts. Differences in the associations between child- and adult-reported measures of socioeconomic circumstances and children's SWB are likely due to both 'true' and measurement variation. True differences relate to the extent to which there are genuine disparities in deprivation felt by children and adults living in the same households, while measurement differences relate to the extent to which different measures capture an accurate picture of resource allocation.

However, there are very few child-reported variables about material circumstances in the UKHLS. For example, the child deprivation scale in the UKHLS, despite its apparent child-centredness, is asked of adults rather than children and does not differentiate between different children within a household. There will inevitably be disparities in the material items and activities that siblings of different ages have - and want to have - access to, and it is not feasible for an adult to give a single, accurate answer to reflect what all children within the household have and want. The review of relevant qualitative studies on child poverty outlined in Chapter 3 highlighted the importance to children of their social relationships and access to the types of material items that would allow them to 'fit in'. However, many of these items - such as the 'right kind of clothes to fit in', trainers, technological items and day trips with family (Main, 2013) - are not asked about in the UKHLS. An additional insight

from qualitative research is that children may have access to material possessions, but in practice those items could be broken or have limited functionality (Mahony *et al.*, 2017). As indices of material deprivation require regular updating to ensure that they reflect socially perceived necessities that are current, the wording of future questions would benefit from taking this into account.

Future research should also take on board the extent to which anti-consumerist and environmental concerns are changing the way that deprivation is understood and experienced by children. Buying second-hand clothes and reducing consumption is increasingly a marker of environmental consciousness, and these trends appear to be concentrated amongst more privileged households. Thus, 'not having' may increasingly be an indicator of both affluence and deprivation. It is only possible to explore whether items are lacked for reasons of principle or unaffordability if survey participants are given these options. Thus, there is a case for posing all questions about material items - including about children's access to a mobile phone and spending money - in a format that allows for the voluntariness of 'deprivation' to be scrutinised.

To return to the conceptual framework presented in Figure 31, the findings from Chapters 3 and 5 indicate that adults' and children's perspectives on their material circumstances – specifically, financial stress within the household and children's views of their neighbourhoods and access to spending money – are mediators of the relationship between socioeconomic contexts and children's SWB. The discussion above also points to the value of conceiving of socioeconomic contexts as background factors that contribute to children's living standards by virtue of intra- and inter-household processes of resource-sharing amongst family members. However, these processes are less well illustrated by the variables

available within the UKHLS. Since adults are not asked about individual children's access to material items, and children are asked very few questions about their material circumstances, it is difficult to establish whether there is equitable sharing of resources within and across households to the detriment or benefit of children. Furthermore, there is very little information on whether children have access to additional resources from outside of their main homes, including from non-resident parents and extended family members. Thus, these processes remain to be explored in more detail in future research. Such research would require datasets containing more detailed, child-reported or child-specific socioeconomic variables that throw a spotlight on children's living standards and access to resources within and across households.

Complex family structures and differences in children's SWB

Most research on family structure simplifies the categorisations of families that children live in. This relates to the dominance of particular family structures during particular time periods, and a primary concern of research to investigate the emergence of new trends and challenges to the status quo. Thus, a proliferation of research accompanied demographic shifts in the latter half of the twentieth century away from the hegemony of the 'standard family form' to document the effect on children of living in alternative family forms, such as in reconstituted families and single-parent households. These families have always existed to a greater or lesser extent, but their increasing prominence - and societal shifts in how they are viewed - led to a desire to investigate how and why children fare differently in them. However, research has tended to focus on one aspect of family functioning – and often, one theoretical approach to understanding the causal mechanisms involved (Brooks-Gunn, 1994) – thus, children's family structures are often overly simplified in order to test a particular hypothesis.

When the focus is on the material resources available to children in different family structures, studies are, understandably, concerned with the number of earners in the household and whether the total resources of the household are sufficient to meet children's needs. In a similar vein, studies concerned with the amount of time that parents spend with their children – in structured or unstructured ways – are focused on the number of parents or additional adults that are co-resident with children. Research investigating role ambiguity highlights the identity of the co-resident adult - such as whether they have biological ties to the child in question – and sometimes the quality of the relationship with that person. Consequently, some approaches prioritise the quantity of parents or additional adults that are co-resident [time], others focus on the amount of resources that are available to the household [investment], the type of adults or children that are co-resident [role ambiguity], or the quality of children's relationships with their family members [why are there sibling differences in relationship quality]. Rarely are all of these factors considered at once, as this analysis has done.

As expected, Chapter 4 demonstrated that socioeconomic factors partially mediated the relationship between family structure and children's SWB. Indeed, in cross-sectional and between-family analyses, once socioeconomic circumstances were controlled, children living in a SPE family did not have lower SWB than children in intact families. However, in within-family analyses, which focused on differences over time and between siblings in the same family, children in single-parent families had lower SWB than those living with two biological parents regardless of whether there were additional adults in the household or not. This suggests that SPE families may be more advantaged than SPA families in ways that are not observed.

Drawing on role ambiguity theory, it was hypothesised that children in formalised step-parent structures would have higher SWB than those in informal step-families, and the cross-sectional and multi-level models supported this conclusion. Complex sibship was not expected to be related to SWB, except in the presence of relationship problems, and the between- and within-family analyses found no differences in SWB for children with non-full compared to full siblings. Furthermore, there was support for the hypothesis that complex sibship matters only when children have difficult family relationships: children with a very poor relationship with their step-parent had lower SWB if they had non-full siblings, but if they had a very good relationship, they had higher SWB than children without non-full siblings.

In light of qualitative research highlighting the valuable role that extended family members - particularly grandparents - take on as providers of emotional and financial resources for children in low-income families, Chapter 4 also examined whether kinship ties predict children's SWB. In a model taking account of both between- and within- family differences, children in families in which grandparents help with childcare had higher SWB than those where childcare was not provided. However, the finding was not replicated in the family fixed effects model, thus, it is not clear whether grandparental childcare merely reflects unobserved aspects of children's family environments. Therefore, although there is indicative evidence of the benefits to children of greater grandparental involvement in their lives, this finding needs to be corroborated further by research that specifically captures the quality of children's relationships with their grandparents.

Overall, the findings from Chapter 4 indicate that more nuanced measures of family structure that acknowledge variation in the formality of step-parent structures, and the additional layer of support provided to some families by grandparents, offer insights into the processes that link family structures to SWB. However, the scope of this analysis is necessarily limited by the questions contained within the UKHLS about kinship ties and relationship quality. The weak association between children's SWB and the help that families receive from children's grandparents is likely due to the measures of grandparental involvement being distant from children's direct experiences. Future research needs to examine in more detail the emotional and material resources that children have access to within and across households, and the quality of relationships that children have with all of the relevant adults in their lives, including extended family members and, especially, grandparents.

Returning to the conceptual framework proposed in Figure 31, the findings from Chapter 4 indicate that the nature of children's relationships with family members other than co-resident, biological parents are important to take account of in research on children's SWB. Differences in children's socioeconomic circumstances associated with particular family structures, the formality of step-parental relationships, and the involvement of extended family members in children's lives all play a role in explaining differences in children's SWB, including in analysis that is able to discount the confounding effects of unobserved, time-invariant aspects of families. Thus, the processes depicted in the diagram are relatively well supported by the evidence presented in this thesis. However, changes to children's circumstances brought about by a family structure change such as house and school moves, and the provision of emotional and financial support within and across households, especially where these relate to non-parental relationships, are not explored in detail in the UKHLS.

Thus, future research that explores these themes in more depth will add to the weight of evidence supporting this model.

Typologies of parent-child relationship from different perspectives and SWB

There are numerous subtleties to be borne in mind when considering the association between socioeconomic disadvantage and children's family relationships. In analysis of the aspects of family life that children and parents are asked about within the UKHLS, a number of relationship problems - such as the child-reported measures of family support and parental supervision, physical and verbal conflict amongst siblings, and parent-reported measures of conflict and physical punishment - have clear social gradients that span the income distribution, with higher rates of problems amongst households experiencing financial stress and lower rates amongst more affluent households. However, other aspects of children's relationships with their parents and siblings are not related to income, or are related in unexpected ways, such as less strict rule enforcement and higher verbal conflict amongst children in more affluent households. An explanation for the latter may be found in the theory of 'natural growth' amongst low-income families in contrast to the 'concerted cultivation' of middle-class children (Lareau, 2011). Lareau concluded that the freedom given to children in low-income families to manage their own time led to a more relaxed pace of life, and relationships with siblings that were more companionable and less often resulted in 'noisy conflicts resolved by adult intervention' in comparison to middle-class families (Lareau, 2011, p. 57).

Nonetheless, the findings of this chapter support the processes depicted in the conceptual framework presented in Figure 31. The analysis provided evidence of various aspects of

children's family circumstances contributing to the family's experience of financial stress, with ethnicity, parental education and family structure having indirect effects on subjective financial difficulties via household income. In turn, children's experiences of socioeconomic disadvantage were found to have indirect effects on SWB via the quality of the parent-child relationship, but also directly via child-reported measures of disadvantage.

Furthermore, once measures of support, closeness and conflict are clustered in typologies of parent-child and sibling relationships, a clear theme emerges of socioeconomic disadvantage and financial stress being associated with lower relationship quality and, in turn, with children's SWB. Differences in children's SWB relating to divergent parent-child and sibling-child relationship typologies indicate that high levels of support and low levels of conflict are optimal. There was less clear evidence for the importance of parental supervision, with parent-child relationship typologies being distinguished more clearly on the basis of support and conflict, than in relation to supervision. However, there were very few measures of rule enforcement and supervision contained within the UKHLS, thus future research could focus on how these aspects of relationship typologies relate to SWB. This is in line with expectations and supports research (e.g. Chan and Koo, 2011) that emphasises the supportive aspects of family relationship typologies, while presenting a challenge to other studies that give equal weight to parental supervision and warmth. Neglectful relationships characterised by high levels of conflict and low warmth appeared to be most detrimental for children's quality of life: children had 25 to 28 times higher odds of low SWB and scored about 6 points lower on the 4-domain measure if they had a neglectful mother- or father-child relationship. These are large differences that throw a spotlight on the fundamental importance of the quality of children's relationships with parents and siblings for SWB.

In relation to sibling relationships, age, sex and socioeconomic circumstances were associated with the level and type of conflict that children reported having with their siblings, with higher levels of verbal conflict amongst girls and children in more affluent households, higher levels of physical conflict amongst younger children and boys, and older children more likely to report harmonious relationships. Thus, like bullying involvement, which is also known to have a clear association with children's SWB, conflict with siblings does not help to explain the lower SWB of girls and older children. However, although this analysis sheds light on the ways in which conflict with siblings is associated with SWB, it says very little about other aspects of children's relationships with their brothers and sisters, including the overall quality of these relationships and whether they are supportive, warm and communicative.

Policy implications

The arguments elaborated in Chapters 1 and 2, which provide the thread that runs through the rest of the thesis, set out the first conclusion for policy, which is that children's views about the content and quality of their lives should be sought in respect of every aspect of life and in every environment in which they are located. Seeking adult perspectives on children's lives provides valuable, additional information, but children's views need to be at the heart of any attempt to understand and improve their well-being. Moreover, adult perspectives are not interchangeable with children's views. Children's relationships with proximal others – parents, siblings, peers, teachers and other adults – are reciprocal, and all perspectives on the quality of their relationships should be considered. Not only will children's insights make policy responses more effective, the act of giving children opportunities to express their views and be taken seriously is likely to have a positive effect on their well-being. A lack of

control over much of what happens in their lives is a defining feature of childhood, and the chance to participate in and shape decision-making is a potentially revolutionary act.

To support this process, children's SWB needs to be measured systematically at the national and local level. The value of measurement for policy cannot be overstated. As the maxim goes, 'Only what is measured can be improved'. Furthermore, only what has been shown to be measurable scientifically will be taken seriously by policymakers. This thesis adds to the accumulating international evidence showing the validity and reliability of children's SWB measures. However, it also highlights the need for ongoing investigation into the cross-cultural and longitudinal equivalence of SWB measurement, and for the expansion of the range of domains that children are asked about to reflect all the aspects of life that are significant components of their overall quality of life.

In this thesis, it has been argued that research on children's SWB - and policy conclusions that are drawn about children's SWB - should be concerned with both increasing SWB for all children and minimising low SWB. Clearly, society has an ethical obligation to reduce misery amongst children when and where it arises, especially given research evidence showing that interventions to support children with low SWB can be effective (Tomyn, Weinberg and Cummins, 2015). However, in respect of SWB, as with many other aspects of life, there is also a strong argument for a focus on prevention rather than cure. Treating only those children who already have low SWB – or who are at risk of low SWB - will likely have little effect on reducing the overall numbers who are suffering, as most 'new cases' of low SWB will emerge from children in the general population rather than the high risk group (Huppert, 2009). An epidemiological perspective highlights the value of small changes to average SWB, which can translate into substantial improvements in the quality of children's

lives at both the top and the bottom of the distribution. On the other hand, there is accumulating evidence to suggest that low SWB may be a warning signal for the later development of mental health problems and poor outcomes. Acting to address low SWB – especially if a child has low SWB only in one domain of life – could constitute valuable, pre-emptive action that prevents other problems from taking hold.

Clearly, action to maximise well-being and minimise suffering is needed, but it is less obvious where the focus of that action should be. To continue with the focus on variability, family scholars have highlighted the substantial overlap between the well-being distributions for children living in two-biological parent families compared to children in separated families (Amato, 1994). Although, this thesis has shown that children in two biological-parent families have higher SWB on average than children in alternative family structures, once socioeconomic circumstances and family relationships are taken into account, the differences are small. Thus, a substantial proportion of children in alternative family structures have higher than average SWB scores, and a substantial proportion of children in two-biological parent families have lower than average SWB scores. The same analogy can be used to illustrate differences in children's SWB according to their socioeconomic circumstances. For all of the adult-reported measures considered, a substantial proportion of children in disadvantaged circumstances have higher than average SWB scores, and a substantial proportion of children in advantaged circumstances have lower than average SWB scores.

What drives these individual differences? The message from the analysis presented in this thesis is that the clearest source of variation in children SWB relates to the quality of their relationships with family. It may come as no surprise that children's SWB is lower when

there are low levels of communication and support within their families, alongside high levels of conflict, however, the size of the associations between family relationship quality and children's SWB dwarf every other factor considered. Moreover, it is not just relationships with biological parents that are associated with SWB. Children who report having a good relationship with their step-parent have substantially higher SWB than those who have a poor relationship, and children who describe harmonious sibling relationships have substantially higher SWB than those who report high levels of conflict. Although the UKHLS does not contain data about the quality of children's relationships with grandparents and other extended family members, qualitative research with children would suggest that the same would be true of these relationships too. From a policy perspective it is clear that rather than incentivising particular family structures the onus should be on supporting family relationships in every part of the family system - between children and their parents, siblings and extended family members, as well as between parents – in every family structure and wherever children, siblings and parents reside.

Although policymaking focused on improving the socioeconomic circumstances of families will undoubtedly have knock-on effects for children's quality of life, the most beneficial programmes are likely to be those that combine this with a focus on children's relationships. This thesis offers new evidence to suggest that interventions for families experiencing financial difficulties are likely to be most successful if they are accompanied by support for relationships that take account of the influence of financial stress on family relationships, and *vice versa*. Parenting programmes should be accompanied by support for those experiencing financial stress to alleviate those influences on family relationship problems. This might include access to grants or crisis financial assistance, employment support for workless households where paid employment would be beneficial to the family functioning, free early

years education and childcare for disadvantaged families with young children, and help with financial management and costs of living.

In terms of other policy areas, the findings in this thesis indicate that support for families experiencing inter-parental conflict, a separation or some other change in family structure would benefit from additional attention to and support for the parent-child relationship to prevent problems arising and repair harm where problems have already arisen between parents and children. Restorative approaches could be used to ensure that children's voices are heard within the process to ensure that adults are aware of the ways in which children are impacted by parental – and inter-parental – behaviours and the attributions that children may make in the absence of positive and democratic participation. There is good evidence for the effectiveness of restorative processes when bullying has occurred or children have been involved in criminal behaviour as everyone involved has the opportunity to present their perspective and be listened to, which gives everyone – including the victim – an active voice and a stake in the process, which helps with conflict resolution.

This thesis also provides evidence to support the continuing involvement of supportive adults in children's lives as they move into their teenage years. The finding of the ongoing importance of adult support and involvement as children grow older is relevant to policymakers, practitioners and parents alike. Of course, older children and teenagers will usually be granted greater autonomy and spend less time with parents than younger children and this is an important process that marks their transition into adulthood. However, it is important for parents to know that they are likely to remain the most important influence on their children throughout their teenage years and that their support and guidance is fundamental to children's quality of lives during this period.

As children spend most of their time either at school or at home, there is a strong argument for the home-school connections that are nurtured during the nursery and primary school years to receive equal attention as children make the transition to secondary school. It has long been recognised in early years education that a parent-teacher partnership is fundamental to children's learning and development, and this continues through the primary school years where teachers make home visits when children start nursery or primary school, and there is provision for parents to talk to teachers at the beginning or end of every school day. Secondary schools tend to be more hands-off when it comes to engaging with parents, however, there is a clear message for secondary schools that ongoing communication and involvement of parents in all aspects of their children's lives is likely to be best practice, especially where the school is aware of there being relationship problems at school or at home. Thus, the evidence in this thesis, along with other research showing that trusted adults at school can be pivotal when problems arise, points to a policy conclusion of the need for pastoral support that can combine support for mental health and well-being with practical strategies to address the range of issues that children may be facing – which may include caring for parents or siblings, having to work to contribute to the household finances, and experiencing peer problems or bullying. When children face difficulties in their relationships with friends, peers, family members and teachers, restorative approaches that take account of the perspectives of all parties holds most promise given its focus on reconciling different standpoints and repairing harm.

Final thought

The overarching aim of this thesis has been to shed light on some of the ways in which disadvantage affects children's quality of life and inform the development of research agendas and policymaking that can pre-empt, counteract and processes that are detrimental to children's well-being. The hope is that future narratives of childhood disadvantage are not about "the harsh legacy of a deprived family through enduring limitations [but how children] successfully overcame disadvantage in their lives." (Elder, 1998)

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Appendix 1

Frequency of individual items in deprivation scale with original and multiply inputed dataset

Individual deprivation items	Missing (original dataset)	Lack item (original dataset, svyset)	Lack item (original dataset)	Lack item (imputed dataset)
Celebrations	2.9	2.0	2.4	2.5
Space outdoors to play	2.6	4.5	6.0	6.0
School trips	3.3	2.9	2.8	2.9
Leisure equipment	3.1	4.6	5.8	5.8
Hobby	3.4	4.6	4.9	5.0
Own bedroom	8.0	10.6	12.8	12.6
Friends over	5.0	4.3	4.6	4.7
Family holiday	3.3	24.7	27.8	27.2
House	9.5	17.8	17.8	18.3
Electrical goods	2.5	30.4	30.3	29.5
Furniture	2.2	37.3	37.2	36.2

Deprivation scale and SWB with original and multiply imputed dataset

	Deprivation scale (original dataset)	Deprivation scale (imputed dataset)
Life as a whole	1.17***	1.16***
Family	1.08**	1.09***
Friends	1.06*	1.07**
Appearance	1.06**	1.06***
School	1.11***	1.11***
Schoolwork	1.08***	1.10***
Regression coefficients for 4-domain SWB	-0.13***	-0.13***
_cons	21.41***	21.30***
Unweighted N	17584	22367

Fixed, between and random effects regressions of 4-domain SWB model and deprivation with multiply imputed dataset

Variable	Regression coefficients		
(reference category in brackets)	Fixed effects	Between effects	Random effects
Child and family characteristics			
Female		-0.30***	-0.31***
Age (10)			
11	0.14	-0.20†	-0.16*
12	-0.23	-0.86***	-0.83***
13	-0.58	-1.47***	-1.43***
14	-0.83	-1.74***	-1.92***
15	-0.91	-2.06***	-2.27***
Ethnicity (White)			
Mixed		0.17	0.17
Indian		0.85***	0.90***
Pakistani		0.89***	0.88***
Bangladeshi		0.75***	0.79***
Black Caribbean		0.17	0.12
Black African		1.04***	0.95***
Other		0.25	0.27
Family structure (2 biological-parents)			
Step-parent family	-0.46	-0.67***	-0.66***
Single-parent family	-0.39	-0.47***	-0.49***
Other family type	-0.29	-0.81***	-0.74***
Adult-reported socioeconomic variables			
Equivalised income quintile (highest)			
Lowest quintile	-0.04	0.34**	0.15
2nd quintile	0.06	-0.01	0.02
3rd quintile	0.05	0.07	0.04
4th quintile	0.11	0.03	0.05
Worklessness	-0.01	0.10	0.07
Means-tested benefits	-0.07	-0.06	-0.05
Home owned	0.14	0.01	0.06
Inadequate heating	0.00	-0.24†	-0.14
Subjective financial difficulties	-0.05	-0.33**	-0.22**
Deprivation index	-0.02	-0.10***	-0.08***
Townsend (2 most deprived quintiles)	0.44	-0.09	-0.07
cons	21.26***	21.48***	21.34***
N (unweighted) cases	21978	21978	21978
R^2 within			
R^2 between			
R^2 overall			