



Community disadvantage, inequalities in adolescent subjective well-being, and local social relations: The role of positive *and* negative social interactions

James Laurence^{a,b,*}

^a Cathie Marsh Institute for Social Research, University of Manchester, Oxford Road, Manchester M13 9PL, UK

^b Wissenschaftszentrum Berlin für Sozialforschung, WZB Berlin Social Science Center, Reichpietschufer 50, D-10785 Berlin, Germany

ARTICLE INFO

Keywords:

Subjective well-being
Adolescence
Communities
Inequality
Positive and negative social relations
Social capital
Socio-economic disadvantage
Social interactions

ABSTRACT

Studies identify the existence of inequalities in adolescent subjective well-being (SWB) across levels of community socio-economic disadvantage. One posited explanation is that community disadvantage harms SWB through undermining positive social relations among residents (often termed social capital). However, social relations can be both positive and negative; for example, social interactions between residents can be friendly or unfriendly, or involve being helped or harmed. Little work has explored negative social relations in communities and their impact on SWB. This study therefore examines the role that local negative social relations may play, alongside positive relations, in understanding inequalities in SWB across communities. Data are taken from a nationally representative survey of 16–17-year olds in England in 2015. Applying multilevel models, findings demonstrate that adolescents living in more disadvantaged communities exhibit lower SWB. In line with current theories, part of this association can be accounted for by weaker positive social relations: the results show that while positive local interactions are important for youth SWB (primarily via higher neighbour trust), young people in more disadvantaged communities report fewer local positive social interactions. However, the models also demonstrate that part of the negative association between community disadvantage and SWB is also accounted for by stronger negative social relations: the results show that negative local interactions are harmful for youth SWB (both directly, and indirectly via lower neighbour-trust), and young people in disadvantaged communities report more frequent negative local social interactions. Importantly, the negative indirect-effect of community disadvantage via increasing negative social interactions is almost twice as strong as the negative indirect-effect of disadvantage via reducing positive interactions. Taken together, community disadvantage appears to harm SWB not only by reducing positive relations but also increasing negative relations. These form dual, independent, social relations pathways through which community disadvantage affects SWB.

1. Introduction

There is growing interest in the role of subjective well-being (SWB) in young people's lives. SWB is often viewed as an important barometer of young people's quality of life (Antaramian et al., 2008). Research has also demonstrated that SWB can facilitate adaptive-development towards positive life-trajectories (Park, 2004); for example, youth with higher-SWB exhibit fewer internalizing/externalizing problem behaviours, greater resilience to stressors, and lower school drop-out (Antaramian et al., 2008; Park, 2004). Given the importance of SWB, the identification of social-inequalities in SWB between groups of adolescents has generated concern. One social gradient receiving multi-disciplinary attention is inequalities in SWB across communities; in

particular, that youth growing up in more socio-economically disadvantaged communities report lower well-being, which can persist over the life course (Leventhal and Brooks-Gunn, 2000; Ludwig et al., 2012; Shields et al., 2009; Vyncke et al., 2013).

Findings showing that a young person's chances of happiness may be determined simply by virtue of the community they grow up in have led to a significant push to understand what drives such inequalities. One explanation focuses on the importance of social relations for well-being (Kawachi and Berkman, 2001); for example, the SWB-benefits derived from a greater quantity of social relationships (e.g., more ties, and interacting with ties more frequently) and better quality social relationships (e.g., more supportive, trusting ties) (Rook, 1984). The suggestion is that inequalities in SWB across communities may stem

* Cathie Marsh Institute for Social Research, University of Manchester, Oxford Road, Manchester M13 9PL, UK.

E-mail addresses: james.laurence@manchester.ac.uk, james.laurence@wzb.eu.

from differences in social relations *among residents*: in particular, differences in local connectivity and interactions, and attendant patterns of trust and cohesion, often termed social capital (Kim, 2010; Vyncke et al., 2013; Xue et al., 2005). The theory follows that more connectivity within neighbourhoods and better quality relations are important for SWB, but that disadvantaged communities undermine such relations between residents, impeding SWB (Cicognani et al., 2008; De Clercq et al., 2012; Drukker et al., 2003; Xue et al., 2005).

Current research therefore positions the *absence* of local social relations as a key driver of lower SWB in disadvantaged areas. However, we suggest such research may be better conceived as capturing the absence of 'positive social relations' e.g., positive, friendly, supportive relations. What has been largely absent from studies is the role 'negative social relations' in the community could play for SWB. Social relations between individuals need not always be positive and can also be negative (Rook, 1984). For example, interactions can be friendly or antagonistic, or involve being helped or harmed; similarly, a relationship may be marked by frequent positive interactions or frequent negative interactions (Rook, 1984). In other words, while 'positive social relations' constitute helpful, supportive, friendly relations/interactions with others, 'negative social relations' constitute harmful, uncooperative, antagonistic relations/interactions with others. This distinction is important because positive and negative interactions are shown to form independent components of one's social relations, and while positive social interactions improve SWB, negative social interactions can harm it (Daniels and Moos, 1990; Harry et al., 2000; Headey and Wearing, 1992; McCullough et al., 2000).

To date, little work has explored negative social relations in understanding SWB-inequalities across communities. We suggest that community disadvantage may not only undermine positive relations but also increase negative social relations. If so, disadvantage could affect SWB through both weakening positive relations among residents but also increasing negative relations i.e., it may not be the absence of social relations driving the SWB-gradient across communities, but the absence positive relations *and* presence of negative relations. This study therefore examines the role of both positive and negative local social relations for understanding inequalities in youth-SWB across community disadvantage. To pursue this, it utilises data on a nationally-representative sample of 16–17-year olds in England, directly testing how community disadvantage is associated with SWB through its association with young people's positive local interactions (positive social relations) and negative local interactions (negative social relations). In doing so, the paper contributes to emerging work on the impact of communities on SWB, and the pathways through which this occurs.

2. Theoretical framework

2.1. Neighbourhood disadvantage, subjective well-being and positive social relations

Extensive research demonstrates that, after adjusting for individual- and household-level disadvantage, the level of disadvantage in one's neighbourhood predicts worse well-being outcomes, including self-rated health (Wen et al., 2003), depression/anxiety (Kim, 2010; Ross, 2000; Ross and Mirowsky, 2009), and positive-SWB (Knies et al., 2016; Shields et al., 2009). While work has largely focused on adult populations, this pattern is increasingly identified among youth populations (Cicognani et al., 2008; Leventhal and Brooks-Gunn, 2000; Xue et al., 2005). Isolating the causality of neighbourhood-effects remains difficult, given processes of neighbourhood-selection. However, real-world experiments have demonstrated plausible causal-evidence, where random-placement within less disadvantaged communities led to improvements in well-being (Ludwig et al., 2012). Although, the benefits of such interventions may be concentrated among particular groups; for example, youth with family health-related vulnerability experienced null- or even adverse-effects from such interventions (Osypuk et al.,

2012).

Several mechanisms have been put forward to explain such well-being inequalities across community disadvantage (Vyncke et al., 2013). These range from psychosocial-pathways, where signs/experiences of disorder foment feelings of threat and alienation (Ross, 2000; Ross et al., 2001), to a lack of resources in disadvantaged areas (e.g. leisure opportunities, health-care provisions) important for well-being (Leventhal and Brooks-Gunn, 2000). One pathway receiving recent attention is that disadvantage may harm SWB by undermining the quality and quantity of social relations within neighbourhoods; particularly local social connectivity (Kim, 2010; Vyncke et al., 2013; Xue et al., 2005). Recently, this debate has drawn on ideas of social capital to conceptualise local social relations (Laurence, 2013; Kawachi and Berkman, 2001); that is, "[s]ocial networks and the norms of reciprocity of trustworthiness that arise from them" (Putnam, 2000:19).

Neighbourhood social relations are important for SWB via two pathways. Firstly, the ties and interactions themselves (the 'structural elements' of social capital) can act as vital 'external coping resources', providing social-support, information, advice and resources to residents (De Clercq et al., 2012). Neighbourhood connectivity can also help foment self-esteem, relatedness and mutual respect, and reduce stress from day-to-day life (especially among young people) (De Clercq et al., 2012; Kawachi and Berkman, 2001). The second pathway is that neighbourhood connectivity is believed, in turn, to foster 'cognitive social capital' (Laurence, 2013; Putnam, 2000). This includes a sense of belonging and trust among residents, which are important for SWB (De Clercq et al., 2012).

Studies of local social connectivity frequently demonstrate its importance for SWB. When individuals self-report their local connectivity, research shows a strong relationship between SWB and possessing stronger, more intimate, local ties: such as friends in the neighbourhood (Mair et al., 2010) or visiting neighbours' homes (Wen et al., 2003). However, studies also demonstrate the importance of more frequent, low-level positive interactions for SWB: where individuals reporting more frequent chats with neighbours (Kim, 2010), or stopping on the street to talk to someone (Dawson et al., 2019; De Clercq et al., 2012), report higher well-being. In fact, even measures of connectivity which express no valence about the interaction, such as simply 'speaking to neighbours', are positively associated with SWB (Peasgood, 2007). Alongside this, research also demonstrates the importance of aggregate-levels of connectivity in a community (Aminzadeh et al., 2013; De Clercq et al., 2012; Drukker et al., 2003). Among these studies, local connectivity is not only an individual-level resource but also a community-level resource, where connectivity among all residents benefits one's SWB. For example, using a measure of neighbourhood-level social capital collected from an independent sample, De Clercq et al. (2012) demonstrate that both an individual's own self-reported connectivity and the aggregate neighbourhood-level connectivity independently predicted their SWB.

Neighbourhoods also remain an important context for young people – especially due to their lives being more spatially-circumscribed – and both individual- and aggregate-level local social connectivity appear at least as important for youth well-being as among adults (Aminzadeh et al., 2013; Dawson et al., 2019; De Clercq et al., 2012). These findings resonate with broader studies of youth-SWB, which highlight the ameliorative-effects of both stronger, more intimate positive social relations (such as making friends) and more frequent, low-level positive interactions (such as small acts of helping) (McCullough et al., 2000; Park, 2004).

As local relations are so important for SWB, studies have suggested disadvantage could undermine SWB through weakening these relations. This work often draws on the 'social disorganisation' theory: that disadvantaged areas impair the strength and prevalence of local social connectivity (Kim, 2010; Shaw and McKay, 1942). This may stem from fewer spaces/opportunities for local interactions, such as leisure-facilities, or civic-groups (Lim and Laurence, 2015; Shaw and McKay,

1942). Among young people, fewer community social-/economic-relations can also lead to fewer social activities which facilitate positive relations (e.g. youth clubs, after-school activities), as well as ties to adults within the community (Ross et al., 2001). Disadvantage can also expose “residents to a daily dose of petty crime, concentrated physical decay and social disorder” (Oliver and Mendelberg, 2000:576). This exposure can trigger a range of negative psychological states, such as “feelings of anxiety and fear, [and] alienation from neighbours” (Oliver and Mendelberg, 2000:576). In turn, such psychological states can undermine social relations among residents and decrease local participation (Letki, 2008; Ross and Mirowsky, 2009; Ross et al., 2001). Although, it is important to note there are communities where residents maintain strong community networks despite concentrated-disadvantage. For example, in some traditional working class communities, where neighbourhood stability is greater and there is a stronger shared-identity, connectivity persists even in the face of disadvantage (Cattell and Evans, 1999).

Drawing these ideas together, research has explicitly tested how far weaker social relations, particularly local connectivity, explain lower-SWB in disadvantaged communities. Wen et al. (2003) found a substantial part of the association between community disadvantage and self-rated health could be accounted for by weaker neighbourhood relations (e.g. ‘density of local networking’). Kim (2010) demonstrated that weaker local relations accounted for around one third of the negative association between neighbourhood disadvantage and depression. Among young people, studies using parental-reports of neighbourliness show its absence can account for part of why youth report lower well-being in disadvantaged areas (Drukker et al., 2003; Vyncke et al., 2013; Xue et al., 2005). Studies have also demonstrated that local connectivity can buffer the negative relationship between community disadvantage and well-being i.e. high-community disadvantage is only associated with lower well-being among residents where connectivity is lower (Aminzadeh et al., 2013). For example, Fone et al. (2014) show that residents of disadvantaged areas reporting weaker cohesion see deteriorating wellbeing over time, while those in similarly disadvantaged areas but reporting stronger cohesion see stable/improving wellbeing.

2.2. Neighbourhood disadvantage, subjective well-being and negative social relations

Studies therefore suggest that lower-SWB in disadvantaged communities emerges from an *absence* of social relations. However, such work could be better conceptualised as demonstrating the absence of *positive* social relations in a community: studies generally capture local social relations using indicators of more positive local interactions and connectivity e.g., the presence of supportive ties, or one’s frequency of low-level positive interactions with residents (‘daily uplifts’) (McCullough et al., 2000; Park, 2004). This focus overlooks another potentially important social relations pathway: the role of *negative* social relations in the community.

Research shows that, alongside positive interactions, one’s negative social interactions are strong and independent predictors of SWB; especially among adolescents (Daniels and Moos, 1990; Harry et al., 2000; Headey and Wearing, 1992; McCullough et al., 2000). The harmful effect of major negative social interactions, such as being a victim of violent crime, are well-documented (Daniels and Moos, 1990). However, minor negative interactions also have powerful, depressing effects on well-being, such as arguments, fighting, people losing their temper, or feeling pressured into things (Daniels and Moos, 1990). These more frequent, low-level stressors (‘daily hassles’) can foster more ambient-stress in people’s lives, and appear more important for youth SWB: although acute negative social interactions have a stronger impact on youth well-being, because low-level ‘daily hassles’ are more frequent they explain more of the variance in youth well-being (Daniels and Moos, 1990; DuBois et al., 1992; McCullough et al., 2000).

Therefore, much like individuals can experience major/minor positive social interactions, individuals also experience major/minor negative social interactions. Importantly, these major/minor positive/negative dimensions of social interactions are shown to contribute unique variance to youth well-being, and while major social events may be particularly powerful, “the cumulative effects of minor events ... must be recognized” (McCullough et al., 2000:287).

The role of negative social relations has been largely absent from research into the community disadvantage-SWB relationship. We suggest that as well as acting as a source of positive social relations, particularly positive social interactions (which improve SWB), neighbourhoods could also be a source of negative social relations, particularly negative social interactions (which harm SWB). In particular, the same processes reducing positive social interactions in disadvantaged communities could also trigger more frequent negative social interactions. For example, the ‘social disorganisation’ of disadvantaged communities, marked by weaker social control, or the absence of economic/social opportunities, can increase local disorder, including both serious victimisation as well as low-level disorder such as “public drunkenness, rowdy behaviour, loitering youth and verbal harassment” (Cheshire and Fitzgerald, 2013:103). These processes may be particularly salient for young people, where worse performing schools or a lack of opportunities can foster unconventional norms, increasing exposure to illicit activities and pressure for involvement (Ross et al., 2001). In line with this, studies demonstrate how both acute experiences of crime, and more low-level ‘social incivilities’, are higher in disadvantaged communities (Kim, 2010).

At the same time, disadvantage could also foster more frequent, low-level ‘daily stressors’ e.g., someone being rude, or a lack of respect during interactions. For example, the constellation of ‘negative psychological states’ (anger, stress, fear, alienation) among residents of disadvantaged areas could generate more day-to-day interpersonal stresses (Oliver and Mendelberg, 2000; Ross, 2000). Although studies into negative relations between neighbours are sparse, available evidence shows residents of disadvantaged communities experience more: negative interactions, annoyances, and hostility with neighbours (Cheshire and Fitzgerald, 2013); ‘trouble with neighbours’ (Ross and Mirowsky, 2009); and antisocial behaviour with neighbours in particular (Cheshire and Fitzgerald, 2015; Mair et al., 2010).

Taken together, if negative social interactions are harmful for SWB, and community disadvantage can increase the prevalence of both acute and more frequent, low-level negative interactions, then such negative social relations could be critical for understanding social gradients in SWB across communities. However, to our knowledge, no study has explored their role in understanding why SWB is lower in disadvantaged areas. Potentially, positive *and* negative social relations in the community may form dual, independent, social-interaction pathways through which disadvantage affects youth-SWB.

2.3. Summary

Studies posit that community disadvantage is harmful for SWB because it undermines positive social relations in a community; in particular, reducing those positive local interactions beneficial for SWB. However, community disadvantage could also harm SWB by increasing negative social relations in a community; in particular, the frequency of negative local interactions, which are harmful to SWB. To investigate this framework this study will first test whether living in more disadvantaged communities is associated with lower youth-SWB. It will also test whether community disadvantage is associated with a young person’s frequency of positive and negative interactions in the local area, asking: is community disadvantage associated with a lower frequency of positive local interactions and/or a higher frequency of negative local interactions? It will then explore whether any relationship between community disadvantage and SWB can be explained by its association with positive and negative interactions, asking: how far

does a young person's frequency of positive/negative local interactions mediate any relationship between community disadvantage and SWB? Lastly, local interactions are thought to be important for SWB, in part, because of their effects on neighbour-trust. Therefore, we will explore how far any association between community disadvantage and SWB via positive local interactions comes through neighbour-trust, but also whether any association between disadvantage and SWB via negative local interactions can also be understood through their relationship with neighbour-trust.

3. Data and methods

3.1. Data

This paper uses data designed to explore the role of communities in young people's lives. The data are a nationally-representative sample of young people, aged 16–17, in England, surveyed between September and October, 2015. To maximise representativeness, the survey used the National Pupil Database (NPD) as a sampling frame, which contains a record of all pupils attending mainstream education in the UK. Permission was granted to draw a random-sample of young people aged 16–17 at the time of the survey to participate, proportionately stratified by ethnicity, Free School Meal eligibility, and region, and disproportionately stratified by gender, given known lower response-rates among males. A mixed-mode approach was taken to data collection, including postal and online surveys, and up to three reminders were sent to participate, resulting in a 43% response rate. This compares favourably with other (government) administered surveys of young people outside of classrooms as sampling sites (ARK, 2009; Gireesh et al., 2018). Sampling and non-response weights are applied to address representativeness-bias. Main data descriptives can be found in Table 1.

A respondent's neighbourhood is measured at the Lower Super Output Area (LSOA) level (average population: n = 1500). This area-level corresponds to the area individuals were instructed to think about when responding to questions regarding their local area: 'The next few questions are about your local area or neighbourhood. By that, we mean the area within 15–20 min walking distance of your home.' All community-level data are taken from complete population data within the 2011 UK Census, apart from data on local crime rates which were drawn from 2016 police crime statistics.

3.2. Measures

3.2.1. Community-level disadvantage

To capture community disadvantage we create an index based on known key indicators, including measures of both socio-economic status (% degree-holders and % in managerial/professional occupations) and socio-economic resource disadvantage (% female-headed lone-parent households, % never-worked and long-term unemployed, and % in social housing) (Laurence et al., 2019; Sturgis et al., 2011). Using factor analysis (promax rotation) we create a single index of community disadvantage (minimum factor loading: 0.67; Eigen value: 3.07; Cronbach's alpha: 0.74). We generate a disadvantage index rather than use the UK Index of Multiple Deprivation (IMD) score given the IMD includes measures of 'health disadvantage' in its calculation (e.g. number with 'Mood and anxiety disorders'). This may confound the relationship between disadvantage and individuals' SWB. Using the index also increases the international-comparability of the analysis.

3.2.2. Respondent subjective well-being

SWB is measured using three questions tapping young people's SWB: life satisfaction, happiness and feelings life is worthwhile. Respondents were asked: 'On a scale of 0–10, where 0 is not at all satisfied and 10 is completely satisfied, overall, how satisfied are you with your life nowadays?' Similarly constructed 11-point scale questions asked respondents whether: 'you feel the things you do in your life are

Table 1
Descriptive statistics.

	Mean or %	Standard Deviation	Range	Valid Cases (n): Individuals/ Communities
<i>Individual-level variables</i>				
Female	49%		0–1	622
White	77%		0–1	622
Black	6%		0–1	622
Asian	10%		0–1	622
Mixed	5%		0–1	622
Other	2%		0–1	622
FSM-eligible in last 6 years	29%		0–1	622
Studying A-levels	55%		0–1	608
Has job	17%		0–1	608
Looking after home/family	3%		0–1	608
Carer	4%		0–1	608
Studying apprenticeship	10%		0–1	608
Home affluence scale	7.7	2.49	0–13	591
Subjective well-being (Index)	0.03	0.92	–2.55–1.54	600
Positive local interactions	3.34	0.96	0–5	607
Negative local interactions	2.21	0.82	0–5	600
Neighbour-trust	3.14	1.08	0–5	612
<i>Community-level variables</i>				
Major Conurbation	40%		0–1	388
City and Town	46%		0–1	388
Town and Fringe	9%		0–1	388
Village	5%		0–1	388
Community Crime rate	0.01	0.01	0–0.09	388
Community % Aged 65+	15.57	6.77	2.46–48	388
Community % ethnic out-group	27.37	34.85	0.43–100	388
Community Disadvantage (Index)	0.05	0.96	–2.54–2.24	388

worthwhile', and 'how happy did you feel yesterday'. These measures of SWB, especially 'life satisfaction', have long formed key indicators of subjective well-being, and much work has explored their validity and reliability (Diener et al., 1999), including among young people (McCullough et al., 2000; Proctor et al., 2009). Since 2011, the measures have also been adopted by the UK Office for National Statistics (ONS) to gauge national levels of well-being. Using these measures allows us to speak to the extensive research applying these measures, and directly to national debates in the UK.

Undertaking exploratory factor analysis (promax rotation), these three questions loaded strongly on to a single index capturing a latent construct of positive subjective well-being (Eigen value: 1.91; minimum factor loading: 0.73; Cronbach's alpha: 0.86). This index combines eudemonic, evaluative indicators of well-being (life satisfaction, life worthwhile) as well as indicators of positive affect (happiness yesterday), tapping the state of individuals' positive emotions (McCullough et al., 2000; Park, 2004). The scale does not capture negative affect (e.g., negative emotions). As such, the index captures youth positive-SWB (henceforth SWB). Generating an index can also help reduce measurement error relative to single-item measures.

3.2.3. Respondent positive and negative local social interactions

To capture a respondent's positive and negative social relations in their community we use two key indicators: the frequency of a young person's positive *social interactions* and negative *social interactions* in their local area. To create these measures we mobilise two sets of survey questions available in the data. These questions were originally

designed to pick-up the frequency of positive and negative interactions that individuals had with members of their ethnic in- and out-group. The first measure asks: 'People report having positive and negative social contact with others from all kinds of backgrounds. Think of your own experiences with people from a *different* race or ethnicity to you *in your local area*. How often, if at all, would you say you had ...': (a) 'Positive or good experiences. For example, someone being friendly to you, or making you feel welcome?', and (b) 'Negative or bad experiences. For example, someone being mean to you, or making you feel unwelcome?' Responses to both questions were a 5-option likert scale of 'never' to 'very often'. Respondents were then asked: 'Now think of your own experiences with people from the *same* race or ethnicity as you *in your local area*.' They then answered the same questions on frequency of positive/negative interactions with their ethnic *in*-group.

Our aim is to combine these questions to generate measures of the 'frequency of positive local interactions with all people' and the 'frequency of negative local interactions with all people'. However, as these measures focus on ethnicity specifically one's frequency of positive and negative in-/out-group interactions may be conditional on opportunities. However, testing demonstrates that these measures load strongly on to constructs of positive local interactions (with in- or out-group) and negative local interactions (with in- or out-group) i.e., they pick up the general-valence of all the interactions a respondent has in the local area; not their frequency of ethnic in-group contact or out-group contact. Firstly, exploratory factor analysis (promax rotation) of these measures demonstrates how two distinct factors emerge, which tap: positive local interactions with all individuals and negative local interactions with all individuals (see Supplementary-Appendix-A). Secondly, obtaining the Cronbach's alpha scores further confirms this. When testing the relationship between one's 'frequency of local positive and negative *in*-group interactions' the Cronbach's alpha is 0.35, and 'local positive and negative *out*-group interactions' is 0.14. However, the Cronbach's alpha of one's 'positive local interactions with in-group and out-group residents' returns a score of 0.72, and 'negative interactions with in-group and out-group residents' returns a score of 0.68. We therefore create two measures: an average score of positive local interactions (with in- and out-group) and an average score of negative local interactions (with in- and out-group). Further testing confirms the validity of this grouping: we replicate the main analysis using measures of local positive/negative ethnic in-group contact in one set of models and using measures of local positive/negative ethnic out-group contact in another set of models (see Supplementary-Appendix-B).

These positive/negative local interaction measures represent perceived indicators of how frequently a respondent experiences positive and negative interactions in their local area, self-reported by young people. This follows other studies in applying respondents' self-reported measures of local social relations (e.g., Dawson et al., 2019; Peasgood, 2007). In this way, they are not collected independently from respondents, and may introduce bias into our models. We discuss this issue in the study-limitations section.

3.2.4. Respondent neighbour trust

To capture cognitive dimensions of social capital/cohesion, we use the most frequently applied measure: trust in neighbours. Respondents were asked how far they agreed/disagreed with the following statement: 'Most people in my neighbourhood can be trusted', using a 5-option Likert scale.

3.2.5. Confounding variables

To isolate any independent association between neighbourhood disadvantage and our outcomes we need to account, as far as possible, for a young person's individual/household disadvantage. We therefore include whether they were eligible for free school meals and the 'adolescent home affluence' scale of adolescent disadvantage. This sums responses to six questions on economic resources at the household-level: respondent has own bedroom; family has a dishwasher; number

of computers in household; number of cars/vans/trucks family owns; foreign holidays per year; number of bathrooms in household (reverse coded so that higher scores on the scale equal more disadvantage). We also include indicators of the roles young people currently occupy in their life, which could have important relationships with their SWB and be correlated with community disadvantage. This includes: whether a respondent is 'studying for a-levels', 'an apprenticeship', if they are 'acting as a carer', 'have a job', and if someone is 'looking after the home or children'. These roles are not mutually exclusive e.g., someone can be both 'studying' and 'acting as a carer'. Therefore, the measures are entered as a series of dummy variables for whether a young person is/is not involved in each role. We adjust models for sex and ethnicity. We also adjust for possible confounding community-level characteristics known to predict well-being, including: whether a respondent is in an urban/rural area; the proportion in the LSOA over 65 years old; the proportion of one's ethnic out-group in the LSOA; and the crime rate within the LSOA.

3.3. Statistical analysis

3.3.1. Modelling approach

Young people within the sample are clustered within $n = 388$ communities (LSOAs) (average 1.7 individuals per community). Accordingly, we need to correct standard errors for any clustering of residuals in those communities with more than one respondent. There is debate as to whether multi-level modelling should be applied under conditions of low n per level-2 units, and where we have a significant proportion of 'singleton' communities (containing only one respondent per community). However, following the literature, we elect to use random-intercept hierarchical, mixed-effects linear regression models, with no random-slopes and robust standard errors. This is because: we have a large n of level-2 units in our sample, we are not studying level-1 random coefficients, and the primary aim of the study is to examine the relationship between community (level-2) characteristics and individual (level-1) outcomes; under such conditions multi-level models are deemed appropriate (Bell et al., 2008; Snijders, 2005). However, modelling using standard OLS with clustered standard errors and population-averaged models returned highly similar findings (McNeish, 2014).

As outlined, we aim to test whether rates of positive and negative local interactions mediate the posited negative relationship between community disadvantage and SWB. To formally test the significance of any observed mediating-effects we will perform formal-mediation testing within a path analysis framework (using multi-level generalized structural equation modelling (GSEM)). GSEM approaches allow us to replicate multi-level mixed-effects linear regression models, as outlined above (e.g., Canette, 2014). However, we can estimate models simultaneously and combine estimation-results to perform formal significance testing of multiple-mediators. We use the bootstrap method to estimate the indirect-effects with bias-corrected confidence intervals, based on 5000 bootstrap samples (Preacher and Hayes, 2008).

The data also contain within-case missingness across variables. Under conditions of listwise deletion of cases with missing data the final sample is $n = 553$. To address within-case missingness we apply multiple imputation (MI) using chained-equations (we created fifteen imputed datasets, and estimates from the analyses were combined according to Rubin's rules). This produces a final-imputed sample of $n = 600$ (with values imputed for all individual-level variables except the outcome(s)). All statistical analysis is conducted using Stata/MP 15.1.

3.3.2. Analytic plan

The primary aim of the paper is to: explore the relationship between community disadvantage and young people's SWB (the main outcome); and examine how far individuals' frequency of positive and negative interactions in their communities can explain any observed relationship

between community disadvantage and SWB. As noted above, all models involve multi-level mixed-effects linear regressions. To pursue this analysis, the first step is to establish whether community disadvantage predicts SWB (Model 1). The next step is to explore the roles of positive and negative local interactions in mediating this relationship. To do so, we will first model whether community disadvantage predicts levels of positive and negative local interactions or not, tested in Models 2 and 3 respectively. Here, positive and negative local interactions are treated as the outcome. The next step is to test how far a respondent's reported levels of positive and negative local interactions can account for any association between community disadvantage and their SWB. Models 4, 5 and 6 therefore replicate Model 1 but will include the measures of either positive or negative interactions (Models 4 and 5), or both (Model 6). These models will test how far valenced-local interactions can mediate the association between disadvantage and SWB. At this stage we will also undertake formal mediation testing, using GSEM (see above), within a path-analysis framework. This allows us to formally test and report the significance of any mediating indirect-effects of positive/negative interactions that we might observe up to this point (the full-results of the GSEM multi-level mixed-effects linear regression analysis will be reported in Supplementary-Appendix-C). The last step of analysis involves testing how far the relationship between a young person's positive/negative local interactions and SWB is mediated through their association with one's neighbour-trust (Model 7).

4. Results

The first step involves testing the overall association between community disadvantage and young people's SWB. Model 1 (Table 2) shows the coefficient for community disadvantage is significant and negative. Therefore, even after accounting for individual/household disadvantage, young people living in more disadvantaged communities report lower SWB. We next explore the association between community disadvantage and young people's frequency of positive and negative social interactions in their local area. In line with the literature, we see that positive interactions and negative interactions are not simply the inverse of one another but capture different aspects of young people's lives: the two are weakly correlated at $r = -0.21$. Exploring their relationship with community disadvantage, Model 2 demonstrates that young people living in more disadvantaged communities report less frequent positive local interactions. Model 3 demonstrates that young people living in more disadvantaged communities also report more frequent negative local interactions. Therefore, as posited, disadvantaged communities are marked not only by fewer positive interactions but also more negative interactions.

The next step is to explore how far young people's frequency of positive and negative local interactions can explain the negative association between community disadvantage and SWB. The models examine the extent to which including positive and negative local interactions mediate the negative association between community disadvantage and SWB (as observed in Model 1). Model 4 tests the mediating role of positive local interactions. The results show that experiencing more frequent positive local interactions is associated with higher SWB; and on including positive local interactions in our model the coefficient for community disadvantage is reduced by 18% and rendered non-significant. Model 5 then tests the mediating role of negative local interactions. Experiencing more frequent negative local interactions is associated with lower SWB, and this association is at least twice as strong as the positive association between positive local interactions and SWB. Furthermore, on including negative local interactions, the association between community disadvantage and SWB is reduced by 26% and rendered non-significant. Model 6 then includes both positive and negative local interactions together in the model. The coefficient for community disadvantage is now reduced by 39%.

This analysis reveals several key findings. In line with current theory, part of the reason youth-SWB is lower at higher levels of

community disadvantage emerges from fewer positive interactions within their local area i.e., increasing community disadvantage appears to have a negative indirect-effect on young people's SWB through reducing their frequency of positive local interactions. However, we want to know whether rates of positive interactions significantly mediate the relationship between community disadvantage and SWB. As noted in the statistical analysis section, to do so we perform a formal test of the significance of this negative indirect-relationship in a path analysis framework through running the multi-level linear regressions within a GSEM-framework (Preacher and Hayes, 2008) (see Supplementary-Appendix-C for the full path-analysis models on which the mediation-calculations are based). The test demonstrates that community disadvantage has a significant negative association with SWB via declining levels of local positive interactions (indirect-effect: -0.012 [CI: $-0.03, -0.01$]). At the same time, SWB also appears to be lower in more disadvantaged communities due to an increasing frequency of negative local interactions. Again, we can perform a similar formal test of the significance of this indirect-effect using the GSEM approach. The results show increasing community disadvantage has a significant negative indirect-effect on young people's SWB via an increasing frequency of negative local interactions (indirect-effect: -0.021 [CI: $-0.04, -0.02$]). Taken together, the negative relationship between community disadvantage and SWB can be explained via two independent social-connectivity pathways - a positive and a negative pathway - and together these pathways account for nearly 40% of the association between disadvantage and SWB.

These findings also demonstrate that the indirect-effect of disadvantage on SWB via negative interactions is nearly twice as strong as the indirect-effect via declining rates of positive local interactions. Furthermore, a non-trivial portion of the reason positive local interactions are associated with SWB is actually due to an absence of negative local interactions: comparing Model 4 and Model 6 (when both positive and negative interactions are modelled together), the coefficient for positive local interactions is reduced by almost 30%. The same is not the case for negative social interactions: when both positive and negative interactions are modelled together the coefficient for negative interactions is only reduced by 7% (comparing Model 5 and Model 6). We also explored whether a young person's positive and/or negative local interactions modified the relationship between community disadvantage and SWB, including interaction-terms between disadvantage and either positive or negative local interactions. However, neither moderating relationship was significant.

Lastly, we examined the role of a key indicator of cognitive social capital - neighbour trust - in understanding these relationships. To explore this, Model 7 replicates Model 6 but also includes a young person's level of neighbour-trust. Model 7 demonstrates that the positive association between local positive interactions and SWB is reduced by 43% and rendered non-significant. However, the association between local negative interactions and SWB is only reduced by 16% and continues to significantly predict SWB. Therefore, a large part of the association between community disadvantage and SWB via negative local interactions does not come through reducing neighbour-trust.

5. Discussion

Research demonstrates that living in more disadvantaged communities is associated with lower SWB. Studies posit that a key driver of this SWB-deficit is weaker positive social relations in the community (Drukker et al., 2003; Vyncke et al., 2013; Xue et al., 2005). This paper suggested that solely focusing on positive local social relations might overlook the role of negative local social relations in this relationship. In other words, as well as being marked by fewer positive relations (which are beneficial to SWB), disadvantaged neighbourhoods could also be marked by more negative relations (which are harmful to SWB). Neighbourhood disadvantage could therefore undermine SWB both by reducing positive relations but also increasing negative relations.

Table 2
Community Disadvantage, Subjective Well-being, and Pathways of Positive Local Interactions and Negative Local Interactions, and Neighbour-Trust (unstandardized coefficients).

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
SWB		Positive local interactions	Negative local interactions	SWB	SWB	SWB	SWB
Community Index of disadvantage	-0.094* (0.046)	-0.131** (0.049)	0.097* (0.041)	-0.078 (0.046)	-0.070 (0.046)	-0.059 (0.046)	-0.041 (0.045)
<i>Individual-level Mediators</i>							
Positive local interactions				0.128** (0.042)	-0.257*** (0.050)	0.093* (0.042)	0.054 (0.043)
Negative local interactions						-0.239*** (0.051)	-0.197*** (0.051)
Neighbour trust							0.153*** (0.042)
<i>Individual-level confounders</i>							
Female	-0.284*** (0.083)	0.157 + (0.083)	0.075 (0.072)	-0.303*** (0.081)	-0.267*** (0.081)	-0.283*** (0.080)	-0.283*** (0.078)
Ethnic group (ref: White)							
Black	0.231 (0.207)	0.235 (0.245)	-0.482** (0.179)	0.199 (0.204)	0.105 (0.201)	0.089 (0.200)	0.027 (0.206)
Asian	0.391* (0.171)	0.630*** (0.165)	-0.170 (0.154)	0.309 + (0.172)	0.348* (0.166)	0.291 + (0.168)	0.263 (0.164)
Mixed	-0.234 (0.245)	0.206 (0.280)	-0.419* (0.213)	-0.265 (0.251)	-0.337 (0.240)	-0.355 (0.245)	-0.373 (0.241)
Other	0.381 (0.316)	0.320 (0.369)	-0.401 (0.247)	0.337 (0.325)	0.280 (0.287)	0.254 (0.297)	0.182 (0.293)
FSM Eligible	-0.188* (0.082)	-0.065 (0.088)	0.181* (0.075)	-0.181* (0.081)	-0.139 + (0.080)	-0.137 + (0.080)	-0.130 (0.079)
Home affluence scale	0.007 (0.021)	-0.042 + (0.022)	-0.004 (0.018)	0.013 (0.021)	0.005 (0.021)	0.010 (0.021)	0.017 (0.021)
Studying a-levels	0.086 (0.082)	0.036 (0.084)	-0.141 + (0.073)	0.083 (0.082)	0.049 (0.079)	0.050 (0.079)	0.060 (0.077)
Currently has a job	0.135 (0.094)	-0.069 (0.100)	0.145 + (0.080)	0.140 (0.092)	0.176 + (0.092)	0.176 + (0.090)	0.197* (0.092)
Looking after home/family	-0.287 (0.224)	-0.281 (0.218)	0.311 (0.258)	-0.255 (0.232)	-0.201 (0.199)	-0.181 (0.207)	-0.199 (0.197)
Acting as a carer	-0.337 (0.211)	-0.276 (0.200)	0.281 + (0.157)	-0.296 (0.216)	-0.276 (0.192)	-0.252 (0.198)	-0.265 (0.207)
Studying apprenticeship	-0.035 (0.139)	0.177 (0.134)	-0.110 (0.155)	-0.061 (0.140)	-0.056 (0.128)	-0.071 (0.129)	-0.054 (0.124)
<i>Community-level confounders</i>							
Community Crime rate	5.780 (5.839)	4.811 (6.090)	-7.766 (4.811)	3.930 (5.672)	3.712 (5.710)	2.498 (5.617)	3.921 (5.800)
Community in an Urban/rural area (ref: in Major Conurbation)							
City and Town	-0.022 (0.092)	0.068 (0.092)	-0.112 (0.080)	-0.030 (0.092)	-0.053 (0.092)	-0.056 (0.092)	-0.067 (0.089)
Town and Fringe	0.079 (0.139)	0.110 (0.154)	-0.171 (0.133)	0.066 (0.138)	0.033 (0.135)	0.028 (0.135)	0.050 (0.133)
Village	-0.284 + (0.166)	0.159 (0.173)	-0.195 (0.150)	-0.303 + (0.160)	-0.337* (0.159)	-0.347* (0.154)	-0.380* (0.158)
Community % Aged 65 +	0.004 (0.006)	0.004 (0.007)	-0.009 (0.006)	0.003 (0.006)	0.001 (0.006)	0.001 (0.006)	-0.002 (0.006)
Community % ethnic out-group	-0.002 (0.002)	0.004 (0.002)	0.002 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)
Constant	0.080 (0.221)	3.289*** (0.228)	2.453*** (0.197)	-0.345 (0.266)	0.717** (0.246)	0.360 (0.296)	-0.107 (0.324)
N (individuals)	600	600	600	600	600	600	600
N (communities)	388	388	388	388	388	388	388

Notes: reverse-coded; + p < 0.1, *p < 0.05**, p < 0.01***, p < 0.001 (two-tailed tests); unstandardized-coefficients; standard-errors within brackets (se); random-intercept multi-level models; unstandardized coefficients.

Ethnic-group reference-category: 'respondent is White'; Respondent's neighbourhood is in an urban/rural area reference-category: 'neighbourhood in a major conurbation'. Model 4 replicates Model 1 but includes frequency of positive local interactions; Model 5 replicates Model 1 but includes frequency of negative local interactions; Model 6 replicates Model 1 but includes frequency of positive and negative local interactions; Model 7 replicates Model 1 but includes frequency of positive and negative local interactions and trust in neighbours.

This study performed the first test of this idea. The findings demonstrated that young people in more disadvantaged communities report lower SWB. Although the association between disadvantage and SWB is relatively weak it is comparable to other studies in the field (e.g. Kim, 2010; Knies et al., 2016). In line with current theories, part of this association is accounted for by fewer positive interactions in the local area i.e. weaker positive social relations. This, in turn, is associated with lower trust in one's neighbours, reducing young people's SWB. However, a key reason young people report lower SWB in disadvantaged communities is that they also experience more frequent negative interactions in their local area i.e. stronger negative social relations. While part of this negative relationship can also be accounted for by lower trust in neighbours, even adjusting for this the frequency of negative local interactions still predicts lower SWB. Taken together, a large part of the negative association (nearly 40%) between community disadvantage and SWB is accounted for by fewer positive interactions but also more negative interactions.

These findings make important contributions to our understanding of why well-being is lower in disadvantaged areas. While the paper provides further evidence on the importance of positive local social relations, the results demonstrate that focusing solely on positive relations overlooks the (more important) role played by negative social relations. Increasing community disadvantage has a similarly strong association with increasing rates of negative local interactions as it does with declining rates of positive local interactions. However, the harmful relationship between negative interactions and SWB is over twice that of the ameliorative relationship between positive interactions and SWB. The result is that the indirect-effect of disadvantage on SWB through increasing negative interactions is almost twice as large as the indirect-effect of disadvantage via reducing positive interactions. Furthermore, focusing solely on the role of positive relations may overestimate their importance in the community disadvantage-SWB relationship. The findings show that around a third of the association between an individual's positive local interactions and SWB is actually driven by fewer negative local interactions.

This paper also provides new insights into the relationships between local social relations and SWB. Firstly, previous work has shown that both positive and negative/acute and low-level interactions are important for SWB (Daniels and Moos, 1990; Harry et al., 2000; Headey and Wearing, 1992; McCullough et al., 2000). The paper demonstrates this applies to local positive and negative interactions as well: the two are only weakly related and contribute unique variance to patterns of SWB. Furthermore, while local negative interactions are somewhat rarer (mean = 2.2) than positive interactions (mean = 3.3), they possess a much stronger association with SWB than positive experiences, and explain a larger part of the variance in SWB for young people. In addition, this study also provides insights into why local interactions appear to matter for SWB. In line with current theory, positive interactions appear important for SWB through their association with trust among residents. However, while part of the association between more negative local interactions and SWB comes through weaker neighbour-trust, even accounting for this, negative local interactions continue to have a direct relationship with lower SWB. This may come through more negative interactions fostering feelings of threat/fear, alienation, and stress, which could reduce youth well-being (Letki, 2008; Oliver and Mendelberg, 2000; Ross and Mirowsky, 2009; Ross et al., 2001).

In sum, positive but also negative local interactions are crucial for understanding well-being gradients across community disadvantage via social relations, and for young people's SWB in general. In fact, negative social relations appear to play a more crucial role. Future work will benefit from capturing negative alongside positive dimensions of social relations.

5.1. Strengths and limitations

Given the data are cross-sectional selection-processes may be

operating, confounding the observed relationships. Focusing on young people can help reduce selection's role: given the age of our sample, we can be confident findings are unlikely to be driven by low-SWB leading young people to select themselves into disadvantaged communities. However, selection-processes could affect parents' area of residence, where parents with lower-SWB are channelled into disadvantaged communities. Studies suggest parental-SWB can impact child-SWB (Clair, 2012). Therefore, the findings could be driven by parents with lower-SWB (which affects youth-SWB) selecting into disadvantaged neighbourhoods. Future work would benefit from more longitudinal approaches; however, to our knowledge no longitudinal data exists containing positive/negative local interactions.

Issues also exist in the posited causal ordering of our models: that disadvantage affects positive/negative interactions which, in turn, affect SWB. An alternative mechanism is that community disadvantage impacts SWB directly which then affects the type (or perception of the type) of positive/negative interactions that individuals report; especially given perceptions of interaction-valence may be contaminated by poorer mental well-being (Headey and Wearing, 1992). This issue is exacerbated by shared-method bias, given both outcome and mechanism are self-reported in our data. We try and gain some purchase on this question using a second set of interaction measures in the data: the frequency of positive/negative interactions a young person has in their school. If it is the case that community disadvantage affects SWB directly, which in turn, affects the valence of all the interactions a young person has then we would expect community disadvantage to predict the valence of all their interactions i.e., disadvantage should predict positive/negative interactions in their school as well (via its impact on SWB). However, if the causal order is that community disadvantage affects the type of interactions a young person has in their local area, which then, in turn, affects SWB, then we would not expect community disadvantage to predict the valence of respondents' school interactions. Testing demonstrates that community disadvantage does not predict respondents' positive/negative interactions within school; only in their local area (see Supplementary-Appendix-D). This suggests that the link between community disadvantage and SWB comes via its association with local interactions, and not that disadvantage harms SWB directly which affects interaction-valence. However, using self-reported measures of positive/negative interactions can still bias our models, and future work using independent measures of positive and negative interactions within communities would go a long way to reducing such bias (De Clercq et al., 2012).

The models also have several strengths relative to prior studies. Constructing an index of positive SWB helps reduce measurement error associated with single measures. The models also control for a broader range of individual-level characteristics (particularly the 'adolescent home affluence scale') and community-level characteristics. However, weaknesses also persist. Firstly, the outcome only captures positive-SWB and does not tell us how these processes operate for negative affect (McCullough et al., 2000). Furthermore, other dimensions of household disadvantage could still account for more of the community disadvantage-SWB relationship, e.g., parental-education. In addition, the models could not account for other posited mechanisms linking community disadvantage to SWB e.g., leisure spaces, social-opportunities. One related issue is that, potentially, the measure of community-level crime applied could also be considered a product of disadvantage and indicator of negative social relations. Therefore, including it in the models could add a degree of confounding. However, we ran all models with and without the indicator, which returned substantively similar findings (although we report findings containing local crime for robustness). Lastly, it is unclear with whom the local interactions are taking place: is it adults or other young people; is it with fellow residents or people from outside the neighbourhood who visit the area. Future work would benefit from disaggregating the precise sources of interactions.

6. Conclusion

These findings contribute to emerging work on the role of communities in youth-SWB, demonstrating the importance of capturing young people's negative as well as positive social relations to understand the role social relations play in SWB-gradients across communities. These findings also have implications for how to address youth inequalities in well-being. Policy-bodies suggest cultivating positive community relations could help not only foster SWB but also reduce social-inequalities across communities. While the findings partially support this idea, they also suggest that interventions need to consider how negative social relations within communities can be reduced. As demonstrated, these form a separate dimension of social relations and it is not clear that promoting positive relations automatically reduces negative relations. Future research needs to better understand what drives negative social relations in disadvantaged communities to facilitate efforts to reduce SWB-inequalities across communities.

Grant numbers and/or funding information

This work was supported by funding from the Economic and Social Research Council (grant number: ES/L011255/1) and the Alexander von Humboldt Foundation (Ref: GBR 1195617 HFST-E).

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2019.112442>.

References

- Aminzadeh, K., Denny, S., Utter, J., Milfont, T.L., Ameratunga, S., Teevale, T., et al., 2013. Neighbourhood social capital and adolescent self-reported wellbeing in New Zealand: a multilevel analysis. *Soc. Sci. Med.* 84, 13–21.
- Antaramian, S.P., Huebner, E.S., Valois, R.F., 2008. Adolescent life satisfaction. *Appl. Psychol.* 57, 112–126.
- ARK, 2009. Young Life and Times Survey 2009: Technical Notes. Department for Social Development in Northern Ireland, Northern Ireland.
- Bell, B.A., Ferron, J.M., Kromrey, J.D., 2008. Cluster size in multilevel models: the impact of sparse data structures on point and interval estimates in two-level models. In: *JSM Proceedings, Section on Survey Research Methods*, pp. 1122–1129.
- Canette, I., 2014. Using Gsem to Combine Estimation Results. The Stata Blog, Stata.
- Cattell, V., Evans, M., 1999. Neighbourhood Images in East London: Social Capital and Social Networks on Two East London Estates. Joseph Rowntree Foundation, York, UK.
- Cheshire, L., Fitzgerald, R., 2013. Patterns of neighbour problems in an Australian city: how neighbourhood factors influence neighbour tensions. 3rd – 6th April 2013 In: *Urban Affairs Association Conference*. San Francisco.
- Cheshire, L., Fitzgerald, R., 2015. From private nuisance to criminal behaviour: neighbour problems and neighbourhood context in an Australian city. *Hous. Stud.* 30, 100–122.
- Cicognani, E., Albanesi, C., Zani, B., 2008. The impact of residential context on adolescents' Subjective Well being. *J. Community Appl. Soc. Psychol.* 18, 558–575.
- Clair, A., 2012. The relationship between parent's subjective well-being and the life satisfaction of their children in Britain. *Child Indic. Res.* 5, 631–650.
- Daniels, D., Moos, R.H., 1990. Assessing life stressors and social resources among adolescents: applications to depressed youth. *J. Adolesc. Res.* 5, 268–289.
- Dawson, C.T., Wu, W., Fennie, K.P., Ibañez, G., Cano, M.Á., Pettit, J.W., et al., 2019. Perceived neighborhood social cohesion moderates the relationship between neighborhood structural disadvantage and adolescent depressive symptoms. *Health Place* 56, 88–98.
- De Clercq, B., Vyncke, V., Hublet, A., Elgar, F.J., Ravens-Sieberer, U., Currie, C., et al., 2012. Social capital and social inequality in adolescents' health in 601 Flemish communities: a multilevel analysis. *Soc. Sci. Med.* 74, 202–210.
- Diener, E., Suh, E.M., Lucas, R.E., Smith, H.L., 1999. Subjective well-being: three decades of progress. *Psychol. Bull.* 125, 276–302.
- Drukker, M., Kaplan, C., Feron, F., van Os, J., 2003. Children's health-related quality of life, neighbourhood socio-economic deprivation and social capital. A contextual analysis. *Soc. Sci. Med.* 57, 825–841.
- DuBois, D.L., Felner, R.D., Brand, S., Adan, A.M., Evans, E.G., 1992. A prospective study of life stress, social support, and adaptation in early adolescence. *Child Dev.* 63, 542–557.
- Fone, D., White, J., Farewell, D., Kelly, M., John, G., Lloyd, K., et al., 2014. Effect of neighbourhood deprivation and social cohesion on mental health inequality: a multilevel population-based longitudinal study. *Psychol. Med.* 44, 2449–2460.
- Gireesh, A., Das, S., Viner, R.M., 2018. Impact of health behaviours and deprivation on well-being in a national sample of English young people. *BMJ Paediatr. Open* 2, e000335–e000335.
- Harry, T.R., Kennon, M.S., Shelly, L.G., Joseph, R., Richard, M.R., 2000. Daily well-being: the role of autonomy, competence, and relatedness. *Personal. Soc. Psychol. Bull.* 26, 419–435.
- Headey, B., Wearing, A.J., 1992. *Understanding Happiness: A Theory of Subjective Well-Being*. Longman Cheshire, Melbourne, Australia.
- Kawachi, I., Berkman, L.F., 2001. Social ties and mental health. *J. Urban Health* 78, 458–467.
- Kim, J., 2010. Neighborhood disadvantage and mental health: the role of neighborhood disorder and social relationships. *Soc. Sci. Res.* 39, 260–271.
- Knies, G., Nandi, A., Platt, L., 2016. Life satisfaction, ethnicity and neighbourhoods: is there an effect of neighbourhood ethnic composition on life satisfaction? *Soc. Sci. Res.* 60, 110–124.
- Laurence, James, 2013. "Hunkering Down or Hunkering Away?" The effect of community ethnic diversity on residents' social networks. *J. Elections, Public Opin. Parties* 23, 255–278.
- Laurence, James, Schmid, Katharina, Rae, James R., Hewstone, Miles, 2019. Prejudice, contact, and threat at the diversity-segregation nexus: a cross-sectional and longitudinal analysis of how ethnic out-group size and segregation interrelate for inter-group relations. *Soc. Forces* 97 (3), 1029–1066.
- Letki, N., 2008. Does diversity erode social cohesion? Social capital and race in British neighbourhoods. *Political Stud.* 56, 99–126.
- Leventhal, T., Brooks-Gunn, J., 2000. The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. *Psychol. Bull.* 126, 309–337.
- Lim, C., Laurence, J., 2015. Doing good when times are bad: volunteering behaviour in economic hard times. *Br. J. Sociol.* 66, 319–344.
- Ludwig, J., Duncan, G.J., Genetian, L.A., Katz, L.F., Kessler, R.C., Kling, J.R., et al., 2012. Neighborhood effects on the long-term well-being of low-income adults. *Science* 337, 1505–1510.
- Mair, C., Diez Roux, A.V., Morenoff, J.D., 2010. Neighborhood stressors and social support as predictors of depressive symptoms in the Chicago community adult health study. *Health Place* 16, 811–819.
- McCullough, G., Huebner, E.S., Laughlin, J.E., 2000. Life events, self-concept, and adolescents' positive subjective well-being. *Psychol. Sch.* 37, 281–290.
- McNeish, D.M., 2014. Modeling sparsely clustered data: design-based, model-based, and single-level methods. *Psychol. Methods* 19, 552–563.
- Oliver, J.E., Mendelberg, T., 2000. Reconsidering the environmental determinants of white racial attitudes. *Am. J. Pol. Sci.* 574–589.
- Ospuk, T.L., Tchetchen, E.J.T., Acevedo-Garcia, D., Earls, F.J., Lincoln, A., Schmidt, N.M., et al., 2012. Differential mental health effects of neighborhood relocation among youth in vulnerable families: results from a randomized trial mental health effects of neighborhood relocation. *JAMA Psychiatr.* 69, 1284–1294.
- Park, N., 2004. The role of subjective well-being in positive youth development. *Ann. Am. Acad. Pol. Soc. Sci.* 591, 25–39.
- Peasgood, T., 2007. Does talking to our neighbours enhance our satisfaction with life? In: *Paper Presented at the Meeting of the International Conference of Policies for Happiness, Siena, Certosa di Pontignano, 14th-17th June*.
- Preacher, K.J., Hayes, A.F., 2008. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behav. Res. Methods* 40, 879–891.
- Proctor, C.L., Linley, P.A., Maltby, J., 2009. Youth life satisfaction: a review of the literature. *J. Happiness Stud.* 10, 583–630.
- Putnam, R.D., 2000. *Bowling Alone: the Collapse and Revival of American Community*. Simon & Schuster.
- Rook, K.S., 1984. The negative side of social interaction: impact on psychological well-being. *J. Personal. Soc. Psychol.* 46, 1097–1108.
- Ross, C.E., 2000. Neighborhood disadvantage and adult depression. *J. Health Soc. Behav.* 41, 177–187.
- Ross, C.E., Mirowsky, J., 2009. Neighborhood disorder, subjective alienation, and distress. *J. Health Soc. Behav.* 50, 49–64.
- Ross, C.E., Mirowsky, J., Pribesh, S., 2001. Powerlessness and the amplification of threat: neighborhood disadvantage, disorder, and mistrust. *Am. Sociol. Rev.* 66, 568–591.
- Shaw, C.R., McKay, H.D., 1942. *Juvenile Delinquency and Urban Areas*. The University of Chicago Press, Chicago, US.
- Shields, M.A., Wheatley Price, S., Wooden, M., 2009. Life satisfaction and the economic and social characteristics of neighbourhoods. *J. Popul. Econ.* 22, 421–443.
- Snijders, T.A.B., 2005. Power and sample size in multilevel modeling. In: *Everitt, B.S., Howell, D.C. (Eds.), Encyclopedia of Statistics in Behavioral Science*. Wiley, Chichester, pp. 1570–1573.
- Sturgis, P., Brunton-Smith, I., Read, S., Allum, N., 2011. Does ethnic diversity erode trust? Putnam's 'hunkering down' thesis reconsidered. *Br. J. Polit. Sci.* 41, 57–82.
- Vyncke, V., De Clercq, B., Stevens, V., Costongs, C., Barbareschi, G., Jónsson, S.H., et al., 2013. Does neighbourhood social capital aid in levelling the social gradient in the health and well-being of children and adolescents? A literature review. *BMC Public Health* 13, 1–18.
- Wen, M., Browning, C.R., Cagney, K.A., 2003. Poverty, affluence, and income inequality: neighborhood economic structure and its implications for health. *Soc. Sci. Med.* 57, 843–860.
- Xue, Y., Leventhal, T., Brooks-Gunn, J., Earls, F.J., 2005. Neighborhood residence and mental health problems of 5- to 11-year-olds. *Arch. Gen. Psychiatr.* 62, 554–563.