



The Mediating Role of Social Capital in the Relationship Between Hong Kong Children’s Socioeconomic Status and Subjective Well-Being

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Abstract

In Hong Kong, as elsewhere across East Asia, few empirical studies have captured the voices of children in their middle years to analyse the determinants of subjective child well-being. To fill this research gap, this article employs data from 1,279 randomly selected Hong Kong children aged from 9 - 14 to investigate the mediating role of social capital in the relationship between their socioeconomic status (SES) and subjective well-being. The data was collected as part of the third wave of the *International Survey of Children’s Well-Being* which included Hong Kong for the first time. Using a path analytical framework and bootstrapping analysis as part of a theoretical ‘health assets approach’, several sub-components of social capital, including family, school, and community sense of belonging as well as peer relationships, were found to constitute protective factors for Hong Kong children’s overall life satisfaction (OLS) as well as their scores on the multi-item *Children’s Worlds Subjective Well-Being Scale* (CW-SWBS). After controlling for SES and other sociodemographic characteristics, family, school, and community autonomy support were not found to augment the subjective well-being of Hong Kong children. Furthermore, school sense of belonging augmented children’s scores on the composite CW-SWBS but not OLS. This article adds to the literature by presenting empirical evidence that a strong sense of belonging—particularly but not exclusively within children’s families—and strong peer relationships present valuable social resources that can be utilised by children in their middle years to optimise their subjective well-being irrespective of their family socioeconomic background.

Keywords Children’s subjective well-being · Middle childhood · Socioeconomic status · Social capital · Health assets approach · Hong Kong

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1 Introduction

The normative framework of the United Nation's *Convention on the Rights of the Child* (1989) enshrines opportunities for children to express their life experiences and share their views on growing up in different social environments (Main & Bradshaw, 2012; Rees & Main, 2015). Subsequently, in recent years, international research programmes have collected information about trends in multidimensional child well-being (e.g., the UNICEF Innocenti Report Card series) and, particularly, the perspectives of children on their own lives (e.g., the Children's Society's Good Childhood Reports and the International Survey of Children's Well-Being). These various research programmes resulted in significant progress in the understanding of the state and appropriate measures for children's well-being in comparative perspective and have included strong arguments that monitoring children's well-being should incorporate both positive (e.g., supportive relationships within the family, school and community social capital) and negative (e.g. income poverty, material deprivation and bullying) aspects representing a broad perspective and holistic approach (Ben-Arieh, 2008; Lippman et al., 2009).

A series of additional findings have emerged as part of this growing literature. Firstly, both objective and subjective social indicators are instrumental for reflecting on the different life dimensions that matter to children (Redmond et al., 2016) and for improving our understanding of child well-being for policy-relevant analyses (Fattore et al., 2009; Ridge, 2009). Secondly, incorporating these objective and subjective indicators of children's quality of life contribute to a better understanding of its determinants, thus critically moving beyond poverty and material deprivation as the primary factors explaining the negative outcomes of child well-being (Currie et al., 2012; Goswami, 2014; Pople et al., 2015). Thirdly, while children's well-being continues to vary according to their socioeconomic status (SES) (UNICEF, 2013), high or increasing GDP per capita does not automatically entail an environment enriching children's lives (Stiglitz et al., 2010). Fourthly, children's SES also impacts their well-being via psychosocial factors, such as the ability to establish social bonds and networks; the psychosocial effects of SES can be attenuated by socioemotional or psychosocial resources accrued through social relationships within the children's social environment (Moore, 2017). These findings posit that social capital obtained from children's social relationships can attenuate the psychosocial effects of SES to reveal a possible protective role of social capital in children's well-being (Ge, 2018; Unicef, 2020).

Although research interest on children's well-being has been growing, existing studies in East Asia, including the Hong Kong SAR (henceforth: Hong Kong), have predominately adopted 'expert-led' or 'adult-derived' measures. By contrast, 'child-derived' measures of subjective well-being are still much less accessible particularly for children in their middle years (Lau & Bradshaw, 2010, 2018). This article uses data collected as part of the third wave of the *International Survey of Children's Well-Being* (Rees et al., 2020) which included Hong Kong for the first time to assess the mediating role of social capital in the relationship between

Hong Kong children's SES and their subjective well-being. More precisely, following the 'health assets approach' in the public health literature (Morrow, 2001; Morgan et al., 2012) the current study recognises social capital as a potential protective factor for Hong Kong children's subjective well-being. As such, it focuses specifically on the examination of whether social capital presents an intermediate outcome along the pathway to subjective well-being in middle childhood in Hong Kong. The article affirms social capital as directly relevant to debates on the valuable social resources that can be accumulated and accessed by children to improve their opportunity for well-being (empowerment). Social capital understood as resources that help children to build feelings of belonging, autonomy and control, are further linked to children's increased confidence and willingness to actively participate in collective social networks (social cohesion).

We are, therefore, particularly interested in the question of whether all the sub-components of social capital in the different contexts of Hong Kong children's social environment are equally important for augmenting their subjective well-being. The recent literature has highlighted that varying constellations of health assets exist across cultures, which makes the establishment of a "precise formula for applying social capital" a necessity in different local contexts (Morgan et al., 2012). Besides, we are also interested in determining whether the effect of social capital remains robust once other sociodemographic factors as well as material deprivation, school bullying, and satisfaction with time use are controlled for. As policymakers attempt to better understand and address the social and structural determinants of children's well-being in their middle years, such findings would not only affirm the role of social capital as a crucial complement to mainstream child development and public health strategies but also facilitate targeted policy interventions specifically geared towards children in their middle years more generally (Bwalya & Sukumar, 2019; Klocke & Stadtmüller, 2019). The latest evidence suggests Hong Kong children in their middle years find themselves at the bottom of the international league table in regard to their overall subjective well-being (Rees et al., 2020), which makes a systematic analyses of the above questions particularly pressing.

To reach the above objectives, this article will first describe the theoretical framework and its research hypotheses. Then, it will summarise the sample characteristics and variables used for the multivariate path analytical framework and bootstrapping analysis. Subsequently, it will present the empirical results on the determinants of children's subjective well-being in Hong Kong and discuss the theoretical and policy-related implications of this study. The article will conclude by highlighting its major contributions and limitations and making suggestions for subsequent research endeavours.

2 Social Capital and Children

Despite the increased recognition of the policy value of measuring people's well-being, an agreed definition of the term has been elusive. However, well-being has been described as "an overarching concept regarding the quality of people's lives, whereby well-being is described as a dynamic process, emerging from the way in

which people interact with the world around them” (Rees et al. 2010: 8). Child well-being, therefore, needs to be understood as multi-dimensional and ecological (Ben-Arieh, 2008; UNICEF, 2007, 2013). As such, children’s subjective well-being is influenced not only by personal attributes, including their family’s socioeconomic background, but also by contextual factors emphasising the significance of children’s interactions within their family, school and the broader community at large as well as with their peers (Unicef, 2020). In other words, children’s well-being encompasses not only economic but also emotional, psychological and social domains, explicating the overall concept of ‘well-being’ as “a positive state of mind and body, feeling safe and able to cope, with a sense of connection with people, communities and the wider environment” (Morgan et al., 2012: 138). The structure and processes of children’s environmental contexts can facilitate or hinder access to material and social resources, which are vital for a child’s survival, development, protection and participation (Ben-Arieh et al., 2001; Gershoff et al., 2007). Understanding the interrelations among economic, subjective, and social well-being in childhood can, therefore, identify potential protective factors for child development, which, in turn, has long-term impacts on children’s participation and productivity (Griggs & Walker, 2008).

Although conceptualised from broadly different perspectives (Coleman, 1988; Bourdieu, 1986; Putnam, 2000), social capital continues to be recognised as individual or collective/community traits that can be measured and assessed within a social network for well-being benefits. Two distinctions of the individual and collective level of social capital exist, namely, cognitive (i.e., people’s perception about interpersonal relationships, reciprocity and enforcement of group values) and structural social capital (i.e., the number of social networks and structures of civic engagement) (Baum & Ziersch, 2003; Harpham, 2008). Furthermore, three distinctions, i.e., bonding (e.g., strong ties connecting family members, friends and colleagues), bridging (e.g., links among individuals/groups of different structural powers) and linking (e.g., links of individuals and families to institutions to enhance their capacity to access resources), have been identified on the basis of the kinds of social ties available to individuals (Kim et al., 2008; Szreter & Woolcock, 2004). To translate social capital to the study of children’s subjective well-being in their middle years, this article regards social capital as a valuable social resource that can be accessed and accumulated via families, schools, peers and communities to optimise children’s well-being and potentially protect them from the adverse effects of existing socioeconomic inequalities (Addae, 2020).

To be more precise, social capital is generally perceived to consist of people’s social relationships and how these connections link to resources that can be drawn upon to meet the needs of well-being (Giordano & Lindstrom, 2010; Oksanen et al., 2010). Social capital has gained reputation in research and in policy-making debates regarding children’s well-being due to the recognition that the social context is a multi-faceted social determinant of health that can affect children’s well-being through multiple mechanisms (McPherson et al., 2013). For instance, children can accumulate social capital as a ‘health asset’ at the early stage of life to optimise its positive effects within their families, from their peers, teachers at school and in their communities (Morrow, 1999; Morgan et al., 2010). According to this line of argument, the SES of children has been found to impact

well-being both *directly*, as higher socio-economic status results in higher subjective child well-being (Inchley & Currie, 2016; Elgar et al., 2016), and *indirectly* through psychosocial factors, such as children's ability to establish and utilise bonds and networks for their benefit (Moore, 2017; Ge, 2018). Statistical evidence also suggests that some measures of social capital can offset the negative relationships among poverty, deprivation, and subjective child well-being outcomes (Buijs et al., 2016; Ge, 2018; Addae, 2020). While children's SES and social capital are interrelated, the above findings suggest that social capital should explain the relationship between SES and children's well-being. Statistically, these findings imply that social capital should play a mediating role in the relationship between children's SES and subjective well-being. Although this does not exclude the possibility that social capital may moderate the relationship between SES and child outcomes, the conceptual focus on mediation effects in this study requires a move beyond standard empirical models designed to test the explanatory power of independent factors in multivariate regressions.

Current frameworks for measuring children and young people's social capital and health and well-being have originated from the work of Morrow (1999, 2001). In 2002, the WHO-Health Behaviour of School-aged Children (HBSC) developed the first devoted optional package of questions to provide evidence on the association between social capital and children and young people's health. This was prompted by a paper Morgan (1999) submitted to the Social Inequalities Focus Group (SIFG)-HBSC. This paper contained a qualitative study by Morrow (1999) which sought to investigate the relevance of social capital to children and young people based on the works of Putnam and Bourdieu (Morgan, 2011). Morrow's work provided new constructs and definitions of social capital for children and young people and was adapted by the SIFG to aid in the identification of an appropriate set of questions necessary for measuring perceived social capital in the home, school, and community settings. An analytical framework based on this set of questions was subsequently developed for the HBSC dataset and first employed by the English 2002 HBSC survey, which complemented it with several additional indicators of social capital. These indicators were categorised into three sub-components of social capital as potential protective assets for children's well-being: sense of belonging, autonomy and control, and social networking (Morgan, 2010, 2011).

Children's 'sense of belonging' refers to children's identity and safety within their social environments, whereas 'autonomy and control' captures children's perceptions of their own power to influence decisions that affect their lives (Morgan et al., 2012: 4). Both sub-components of social capital operate in different contexts of children's lives, including the family, school and the wider community, and they comprise various items, such as whether the family is engaging in activities together, whether students in class enjoy being together and whether children can safely play outside during the day ('sense of belonging') or whether parents allow children to make their own decisions and whether teachers in school are friendly and interested in individual children as a person ('autonomy support'). Social networking reflects children's involvement in social networks which in the peer context can be related to children's involvement in peer relationships. The social capital framework for young people also specifically accounts for aspects of 'peer relationships', i.e., communication with friends, and

is operationalised, for example, by asking children whether they can easily talk to friends about sensitive issues that bother them (Morgan et al., 2012). The resulting theoretical framework can be summarised graphically in Fig. 1 below.

Social capital is a multi-faceted concept and is bounded by cultural and historical-institutional contexts. Whilst the cognitive dimensions of social capital, especially family, school, and community ‘sense of belonging’ and ‘autonomy support’, have been shown to have a significant impact on children and young people’s well-being *generally* (Inchley & Currie, 2016; OECD, 2017), the diffusion or transfer of social capital-related policies may not necessarily be conducive to children’s well-being across all age groups and in different country contexts (Morgan et al., 2012). This note of caution calls for age- and society-specific investigations into how social capital and SES impact children’s well-being and, specifically, how social capital can be utilised as a potential protective factor against the adverse effects of children’s low SES. This study will give us insights into the extent to which the social context of well-being (i.e. SES, social relationships with family, peers, and community) presents a strong influence on children’s subjective well-being in Hong Kong. Based on the relevant international comparative literature (e.g., Lee & Yoo, 2015), it will contribute to the development of an improved conceptual framework for the analysis of children’s subjective well-being in Hong Kong and other Chinese societies.

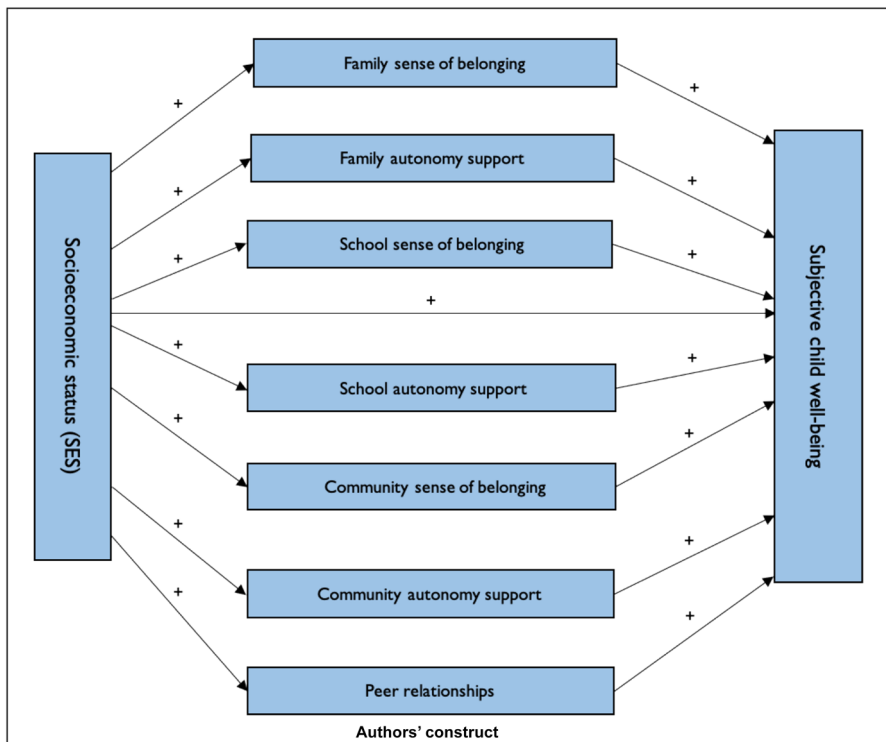


Fig. 1 Social capital framework

3 Methods

3.1 Study Design and Sample

This study uses original data for Hong Kong that were collected as part of the third wave of the *International Survey of Children's Well-Being* (Children's Worlds, Rees et al., 2020). This international survey has engaged in the validation of cross-culturally comparable measures of children's subjective well-being (Casas & Rees, 2015; Rees & Main, 2015; Rees et al., 2016). The age-specific questionnaires by Children's Worlds cover four main components, namely, (1) fact-based questions, (2) evaluative questions, (3) questions about rights and (4) questions about children's overall well-being. Fact-based questions (1) include items on (i) individual child characteristics (e.g. age and gender), (ii) the people children live with, (iii) children's material and economic situation (e.g. household possessions) and (iv) children's activities and experiences (e.g. various aspects of time use, worries about family money). Evaluative questions (2) consist of questions about children's satisfaction with specific domains of their lives as well as agreement items on their family relationships, friendships and feelings about their school and the local area where they live. All satisfaction items used an 11-point response scale from 0 ('not at all satisfied') to 10 ('totally satisfied'). Children were also asked to respond to statements (e.g., 'There are people in my family who care about me' and 'My friends are usually nice to me') on a five-point scale labelled from 'I don't agree' to 'I totally agree' with an 'I don't know' option. Some of the agreement items in the questionnaire for 10- and 12-year-old children (e.g., 'I enjoy my life') used an 11-point response scale from 0 ('Not at all agree') to 10 ('totally agree'). Questions about rights (3) included two items on 'I know what rights children have' and 'I know about the UN Convention on the Rights of the Child', whereas questions about children's overall well-being (4) included several psychometric composite scales measuring different aspects of children's subjective well-being.

For the Hong Kong data, confirmatory focus groups were conducted to test children's comprehension and interpretation of questionnaire items. For this first part of the research, purposive sampling techniques were applied using existing non-governmental organisations (NGOs) and school contacts to identify Hong Kong children presenting a cross-section of different socioeconomic family backgrounds (see Lau & Kühner, 2020 for more details). Once the final questionnaires were confirmed, the children were surveyed according to two age groups, namely, '10-year-old' children attending primary school *Form 5* and '12-year-old' children attending secondary school *Form 1*. A stratified probability sampling was used to gain responses from children from 17 primary and 16 secondary schools from September 2018 to July 2019, respectively. The majority of the children in Hong Kong studies in government aided primary and secondary schools (78%). A full list of primary and secondary non-special schools was obtained from the Education Bureau of the Government of the Hong Kong SAR. All Government, Aided, Direct Subsidy School and Private primary schools (including both

half-day and whole-day schools) were selected and only whole-day and grammar secondary schools were included. Schools were randomly selected from the sampling frame. Where schools decline to participate, replacement schools were randomly selected. Among each participating school, two class groups of students were chosen using the simple random digits method.

Besides informed consent from the schools, passive parental consent was gained. A letter was sent to the children's parents explaining the purposes of the study and notifying them that the study is anonymous and voluntary. Parents were informed to return the form only if they do not want their child to take part in the study (i.e. 'opt out' procedure). The survey was conducted in classroom settings. All students were carefully informed that participation in the survey was voluntary, and they were offered the right not to participate and to quit during any time of the survey. Students were further informed that no personal data would be released and the collected data was intended to be used for statistical analysis only. The total number of individual child responses varied from 38 to 50 from primary schools and 28 to 67 from secondary schools.

The data were checked and cleaned with support from the *Children's Worlds* core project team, which developed a set of guidelines for this purpose to ensure that the final national data sets were as comparable as possible across all 35 participating countries/territories. Data weights were calculated, taking into account that not all children in the selected classes participated in the survey and that the data cleaning process resulted in a limited number of exclusions. The final representative sample contained a total of 1,525 responses from Hong Kong children from 9 - 14 years old, which were finally included in the third wave *International Survey of Children's Well-Being* (Children's Worlds, Rees et al., 2020). Of those responses, 1,279 children answered all items used for the model specifications in this article and were, therefore, included in all subsequent multivariate analyses in this article.

3.2 Dependent Variables

3.2.1 Subjective Well-Being

Self-reported well-being is typically defined as either subjective 'hedonic' or psychological 'eudaimonic' well-being (Rees et al., 2013; Casas & Rees, 2015). Subjective well-being in the 'hedonic' tradition further focuses on both cognitive and affective components, where the former is concerned with overall life satisfaction and the latter with the experience of positive or negative emotions with reference to a particular point in time (Diener, 1984). This article used two dependent variables to capture Hong Kong children's subjective well-being. For context-free overall life satisfaction (OLS), children were asked to indicate a position on one of 11 steps ('0' for the worst and '10' for the best) in answering the question: 'How satisfied are you with your life as a whole?' In addition, the Children's Worlds Subjective Well-Being Scale (CW-SWBS), based on the Student Life Satisfaction Scale developed by Huebner (1991a, b), was conceptualised as a multi-item scale based on six items: 'How much do you agree with each of the following sentences about your life as a

whole?’ (from 0 ‘not at all agree’ to 1 ‘totally agree’) – ‘I enjoy my life’, ‘My life is going well’, ‘I have a good life’, ‘The things that happen in my life are excellent’, and ‘I like my life’, and ‘I am happy with my life’. A Confirmatory Factor Analysis (CFA) was developed in Amos to verify the validity of the CW-SWBS for the Hong Kong data. In doing so, we first deleted all child respondents with missing values for any of the six original items. The initial model for all 10- and 12-year-old respondents including all six items displayed unacceptable results for the RMSEA. Only when excluding the item ‘I am happy with my life’, the model fit statistics became acceptable overall ($\chi^2 = 58.323$; CFI = .993; RMSEA = .084; see Appendix 1). We, therefore, adopted the five-item CW-SWBS (henceforth: CW-SWBS) for all subsequent analysis in this article.

3.3 Independent Variables

3.3.1 Socioeconomic Status

Studies have revealed that measuring children’s SES via their family background may be problematic, as children often fail to report correctly their parents’ income, educational level, and occupation, thus prompting the need for child-specific SES measures (Currie et al., 2004). In this study, we follow other examples in the literature and use family affluence as a proxy to measure the SES of Hong Kong children. The original Family Affluence Scale included in the Children’s Worlds questionnaire was developed by the international study of the Health Behaviour in School-aged Children (HBSC) (Hartley et al., 2016; Torsheim et al., 2016) but substituted one item (washing machine instead of dishwasher). For this article, a further modification was made following the standard empirical tests of the scalability in the specific case of Hong Kong. Eventually, family affluence was operationalised as a composite scale on the basis of four items: ‘How many bathrooms are in your home?’ (Options: 0 = none, 1 = one, 2 = two, 3 = more than two), ‘How many cars, van or trucks does your family own?’ (Options: 0 = none, 1 = one, 2 = two, 3 = three or more), ‘In the last 12 months, how many times did you travel away on holiday with your family?’ (Options: 0 = not at all, 1 = once, 2 = twice, 3 = more than twice) and ‘How many computers does your family own?’ (0 = none, 1 = one, 2 = two, 3 = more than two). The responses of Hong Kong children to the four items were summed up to derive a composite index ranging from 0 (low SES) to 12 (high SES).

3.3.2 Social Capital

Sense of Belonging Following the theoretical framework outlined above, three scales were developed to measure children’s ‘sense of belonging’ in different contexts, including their families, schools and the community where they live. Firstly, family sense of belonging (FSB) combined children’s answers to four agreement questions (0 = I do not agree, 1 = I agree a little bit, 2 = I agree somewhat, 3 = I agree a lot, 4 = I totally agree): ‘There are people in my family who care about me’, ‘If I have a problem, people in my family will help me’, ‘We have a good time

together in my family' and 'I feel safe at home'. Secondly, school sense of belonging (SSB) combined children's answers to four additional agreement questions with the same answer options (0 = I do not agree, 1 = I agree a little bit, 2 = I agree somewhat, 3 = I agree a lot, 4 = I totally agree): 'My teachers care about me', 'If I have a problem at school my teachers will help me', 'If I have a problem at school other children will help me' and 'I feel safe at school'. Finally, community sense of belonging (CSB) was measured by four agreement questions (0 = I do not agree, 1 = I agree a little bit, 3 = I agree a lot, 4 = I totally agree): 'I feel safe when I walk in the area I live in', 'In my area, there are enough places to play or to have a good time', 'If I have a problem, there are people in my local area who will help me' and 'Adults in my local area are kind to children'.

Autonomy Support Three scales were developed to measure children's 'autonomy support' in different contexts, including their family, school and the community where they live. Firstly, family autonomy support (FAS) was measured by two agreement questions (0 = I do not agree, 1 = I agree a little bit, 2 = I agree somewhat, 3 = I agree a lot, 4 = I totally agree): 'My parents/carers listen to me and take what I say into account' and 'My parents and I make decisions about my life together'. Similarly, school autonomy support (SAS) was also measured by two agreement questions (0 = I do not agree, 1 = I agree a little bit, 2 = I agree somewhat, 3 = I agree a lot, 4 = I totally agree): 'My teachers listen to me and take what I say into account' and 'At school I have opportunities to make decisions about things that are important to me'. Finally, community autonomy support (CAS) was measured by two agreement questions (0 = I do not agree, 1 = I agree a little bit, 3 = I agree a lot, 4 = I totally agree). Participants were asked how much they agree with the following statements: 'In my local area, I have opportunities to participate in decisions about things that are important to me' and 'Adults in my area listen to children and take them seriously'.

Peer Relationship Four questions were used to measure Hong Kong children's peer relationship (PeerR): 'How much do you agree to the following sentences?' (0 = I do not agree, 1 = agree a little bit, 2 = agree somewhat, 3 = agree a lot, 4 = totally agree) – 'I have enough friends', 'My friends are usually nice to me', 'My friends and I get along well together' and 'If I have a problem, I have a friend who will support me'.

The consistency and reliability of each of the social capital scales FSB, SSB, CSB, FAS, SAS, CAS, PeerR was first explored using PCA, Cronbach's alpha, Kaiser-Meyer-Olkin values and the Bartlett's Test of Sphericity. We further tested their validity using CFA in Amos and found the model fit to be excellent overall particularly in context of the large sample size of our data ($\chi^2 = 668.739$; CFI = .966; RMSEA = .051)¹. 'I don't know' answers across all the items included in the seven composite scales were not coded in all instances.

¹ Detailed results of all validity and reliability analysis of the social capital scales are available from the authors upon request.

3.4 Control Variables

We also included several control variables in our empirical analysis. Hong Kong children's satisfaction with their time use was accessed on a scale of 0 (not at all satisfied) to 10 (totally satisfied) and included in order to control for Hong Kong children's satisfaction with their daily activities outside of school, which may independently affect their life satisfaction and subjective well-being (Lam & McHale, 2015). To measure material deprivation, children were asked whether they had the following items (Options: 0 = No, 1 = Yes): 'Clothes in good condition to go to school in', 'enough money for school trips and activities', 'access to the Internet', 'equipment/things for sports and hobbies', 'pocket money/money to spend on yourself', 'two pairs of shoes in good condition', 'mobile phone' and 'equipment/things you need for school'. A composite index ranging from 0 (no deprivation) to 8 (high deprivation) was derived by summing up the scores for all items the children lacked. In addition, three items were used to measure children's personal experience of school bullying (0 = never, 1 = once, 2 = 2 or 3 times, 3 = more than 3 times): 'How often were you hit by other children in your school?', 'How often were you called unkind names by other children in your school?' and 'How often were you left out by other children in your class?' The scores of the responses were summed to obtain a composite index ranging from 0 (no bullying) to 9 (severe bullying). Hong Kong children's place of birth (born in Hong Kong: yes/no) was included as a further control variable since recent studies have identified systematic differences between local and Mainland migrant children regarding different aspects of their well-being including, e.g., educational aspirations and achievements (Xu & Wu, 2017) and everyday perceived discrimination (Chou, 2012). Sociodemographic factors included in all model specifications were gender (boys/girls), age in years (9 through 14), educational level (primary/secondary) and school category (aided school/direct subsidy scheme school/private school with aided schools as the reference group).

3.5 Data Analysis

After the descriptive analysis (frequency, means, standard deviation) of the basic sociodemographic characteristics of our sample, a Pearson correlation matrix between dependent and independent variables was computed to test the initial hypotheses of the relationships among SES, social capital sub-components, OLS and CW-SWBS. Once the interrelationship among the three sets of variables is confirmed, *Model 4 in SPSS-PROCESS Macro Hayes's version 3.3* (Hayes, 2013) can be employed to confirm the mediating role of the sub-components of social capital in the SES–subjective well-being relationship under the control of other sociodemographic characteristics.

For social capital to play a mediating role in the relationship between SES and children's subjective well-being in Hong Kong, one must first establish that SES indeed predicts each of the sub-components of social capital and children's subjective well-being. Firstly, PROCESS MACRO uses ordinary least squares (OLS) regression to estimate the direct effect of SES on social capital and children's

subjective well-being, as well as the direct effect of social capital on children's subjective well-being in the presence of the sociodemographic controls. The direct effect in mediation analysis measures the extent to which children's subjective well-being alters when SES increases by one unit and social capital remains unchanged.

Secondly, SPSS-PROCESS uses a path analytical framework and a bootstrapping approach, to analyse the indirect effect of SES on children's subjective well-being through social capital. Unlike direct effects, the indirect effect measures the extent to which children's subjective well-being changes when SES is held constant while social capital changes by the amount it would have changed had SES increased by one unit. SPSS-PROCESS tests indirect effects using a bootstrapping estimation approach with a bootstrap sample of 5,000 at a 95% bias-corrected confidence interval (95% BCCI). The bootstrapping technique provides an efficient method to ensure that the specified models are constant and reliable for the analysis to enhance the accuracy of results. All intended mediators (FSB, SSB, CSB, FAS, SAS, CAS, and PeerR) are specified in the model by the researchers based on theoretical reasoning and their mediating effects are confirmed by using the lower and upper limit values of each of their confidence intervals, respectively. The endpoints of the confidence interval are defined by percentiles in the allocation of bootstrap estimates of the indirect effect (<https://processmacro.org/index.html>). The assumption is that, for the mediation to be significant, the interval between the lower and upper limits should not contain 0 (i.e. both the lower and upper limits should either be positive or negative).

The bootstrapping technique was analysed in two separate models. *Model 1* examined the mediating role of social capital in the relationship between SES and OLS, while *Model 2* examined the mediating role of social capital in the relationship between SES and composite subjective child well-being (i.e. CW-SWBS). The IBM-SPSS software for Windows application (version 23.0) was used for all analyses. The level of statistical significance was set at $p < 0.05$ (two-tailed) and standardised coefficients are reported throughout. Control variables were included in all empirical models.

4 Results

4.1 Descriptive Analysis

The sample characteristics are shown in Table 1. Among the 1,279 Hong Kong children with available data for all dependent and independent variables, the average age was 11.47 years with a standard deviation of 1.126. The participants comprised 668 (52.2%) boys and 611 (47.8%) girls, the majority of which were born in Hong Kong (87.3%). The majority of surveyed Hong Kong children (66.4%) lacked no material items, whereas 21.4% and 12.3% of the children reported that they lacked one or two or more material items, respectively. A total of 44.6% stated that they had experienced at least one type of school bullying. The average satisfaction with time use of the participants was 7.27 with a standard deviation of 2.236. 1,057 (82.6%) child respondents attended aided schools, 177 (13.9%) attended direct subsidy scheme

Table 1 Descriptive analysis of study participants

Variables	Valid N	(%) / mean (\pm SD)
Age		11.47 (\pm 1.126) (9-14yrs)
Gender		
Boy	668	(52.2)
Girl	611	(47.8)
Place of birth		
Born in Hong Kong	1,117	(87.3)
Not born in Hong Kong / Not sure	162	(12.6)
Material deprivation		
No items lacked	849	(66.4)
One item lacked	273	(21.4)
Two or more items lacked	157	(12.3)
School bullying		
No bullying	709	(55.4)
Bullied	570	(44.6)
Education level		
Primary	667	(52.1)
Secondary	612	(47.9)
School category		
Aided school	1,057	(82.6)
Direct subsidy scheme school	177	(13.9)
Private school	45	(3.5)
Satisfaction with time use		7.27 (\pm 2.236) (0-10)

$N = 1,279$, % = sample percentage

SD Standard deviation

schools, and 45 (3.5%) attended private schools. The majority of Hong Kong children (72.2%) reported that they have one bathroom in their home. More than half of Hong Kong children's families (54.8%) did not own a car, whereas close to two-thirds of Hong Kong children (62.3) reported that they travelled away on holiday with their family more than twice in the last 12 months. Close to one-third (31.1%) of Hong Kong children stated that their family merely owns one computer or none at all (see Table 2).

The mean score of the OLS scale was 83.3 (out of 100) and 77.8 (out of 100) for the CW-SWBS. The distributions of the two scales also showed that a sizeable share of Hong Kong children were falling behind their 'average' peers: the proportion of Hong Kong children with very low levels of life satisfaction according to the OLS scale—i.e. those reporting 40 or less—was 5.1% overall and 7.4% for the children who answered the '12-year-old' questionnaire. For the CW-SWBS, the respective shares of Hong Kong children with very low composite subjective well-being—i.e. those scoring 40 or less—was 7.6% (overall) (see Fig. 2) and 9.6% (12-year-olds).

Table 2 Descriptive analysis of SES items

Variables	Valid N	(%) / mean (\pm SD)
How many bathrooms are in your home		
None	35	(2.7)
One	923	(72.2)
Two	274	(21.4)
More than two	47	(3.7)
Does your family own a car, van or truck		
No	700	(54.8)
One	383	(30.0)
Two	126	(9.8)
Three or more	69	(5.4)
In the last 12 months, how many times did you travel away on holiday with your family?		
Not at all	93	(7.3)
Once	165	(12.9)
Twice	224	(17.5)
More than twice	797	(62.3)
How many computers do your family own?		
None	59	(4.6)
One	342	(26.7)
Two	404	(31.6)
More than two	474	(37.1)
Socioeconomic status		6.28 (\pm 2.106) (0-10)

$N = 1,279$, % = sample percentage

SD Standard deviation

4.2 Bivariate Analysis

Table 3 reveals the statistically significant positive relationships among SES, social capital (FSB, SSB, CSB, FAS, SAS, CAS, PeerR) and children's subjective well-being (OLS, CW-SWBS). A positive correlation was observed between SES and OLS ($r = .123$, $p < 0.001$) and CW-SWBS ($r = .129$, $p < 0.001$). The findings also indicated that children with high FSB ($r = .645$, $p < 0.001$), high FAS ($r = .522$, $p < 0.001$), high SSB ($r = .487$, $p < 0.001$), high CSB ($r = .464$, $p < 0.001$), strong PeerR ($r = .446$, $p < 0.001$), high CAS ($r = .415$, $p < 0.001$) and high SAS ($r = .410$, $p < 0.001$) showed a statistically significant positive relationship with OLS. At the same time, FSB ($r = .699$, $p < 0.001$), FAS ($r = .586$, $p < 0.001$), SSB ($r = .569$, $p < 0.001$), PeerR ($r = .532$, $p < 0.001$), CSB ($r = .516$, $p < 0.001$), CAS ($r = .480$, $p < 0.001$) and SAS ($r = .479$, $p < 0.001$) showed a statistically significant positive relationship with CW-SWBS.

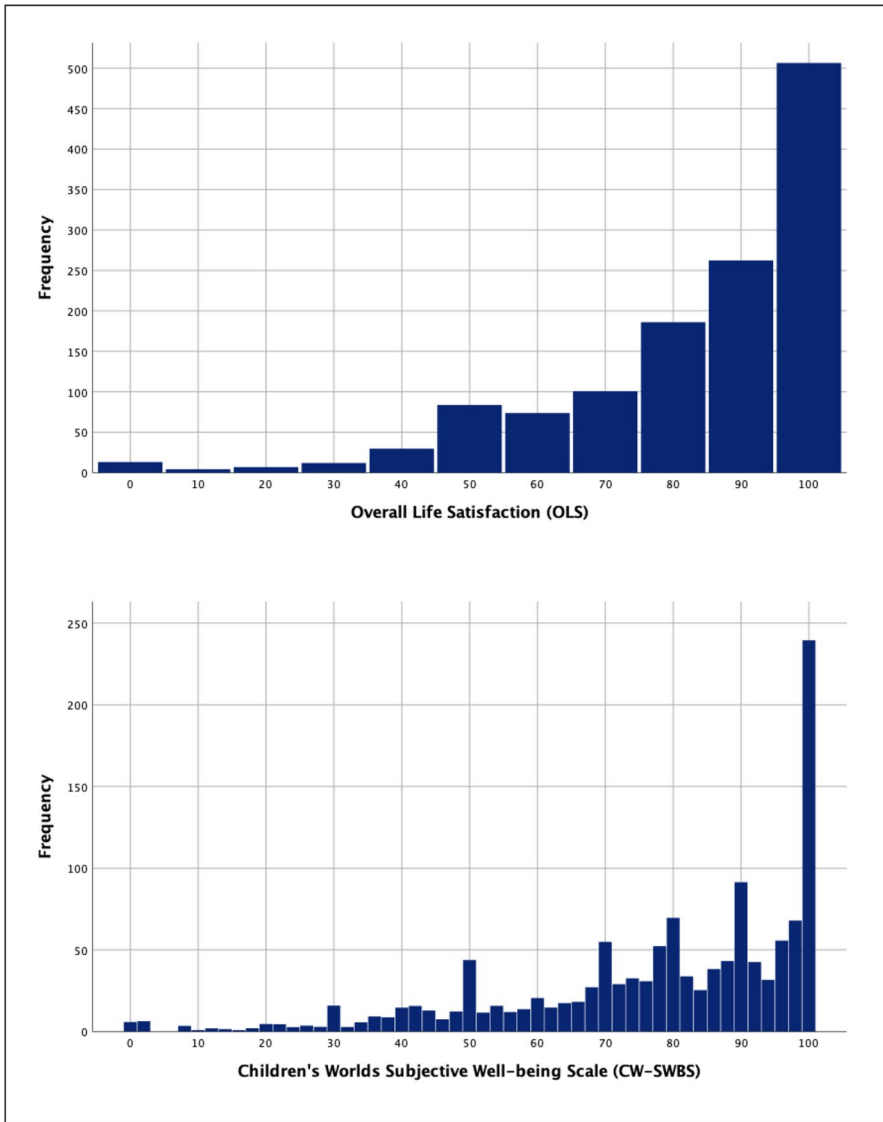


Fig. 2 Subjective well-being of Hong Kong children in their middle years ($N = 1,279$)

The correlation results supported the initial hypotheses that SES and social capital were interrelated, i.e., that SES predicted social capital and subjective child well-being but also that social capital predicted children’s subjective well-being. Thus, the next analytical step was to examine whether social capital, or more precisely, the various identified sub-components of social capital, could mediate the direct relationship between SES and subjective child well-being (OLS and CW-SWBS). Such finding would indicate that social capital can, indeed, act as a potential protective factor for Hong Kong children against the adverse effects of low family SES.

Table 3 Pearson Correlation matrix among Hong Kong children's socioeconomic status, social capital, overall life satisfaction and subjective well-being

	1	2	3	4	5	6	7	8	9
1. OLS	1								
2. CW-SWBS	.783***	1							
3. Family sense of belonging	.645***	.699***	1						
4. Family autonomy support	.522***	.586***	.750***	1					
5. School sense of belonging	.487***	.569***	.533***	.458***	1				
6. School autonomy support	.410***	.479***	.433***	.431***	.696***	1			
7. Community sense of belonging	.464***	.516***	.469***	.454**	.465***	.417***	1		
8. Community autonomy support	.415***	.480***	.447***	.484***	.410***	.437***	.691***	1	
9. Peer relationship	.446***	.532***	.427***	.374***	.556***	.423**	.383***	.316***	1
10. Socioeconomic status	.123***	.129***	.139***	.146***	.118***	.081***	.124***	.103***	.127***

$N = 1,279$

*** $p < .001$

4.3 Multivariate Analysis

4.3.1 Overall Life Satisfaction

Direct Relationship Among SES, Social Capital and OLS Multivariate regression analysis supported the earlier finding that children with high social capital were more likely to report high OLS than those with low social capital. However, not all of the sub-components of social capital significantly predicted OLS once other sociodemographic factors were controlled for. The results of the direct effect of SES and social capital on OLS in Model 1 suggested that FSB ($B = .409, p < .001$), CSB ($B = .081, p < .05$) and PeerR ($B = .090, p < .001$) predicted Hong Kong children's OLS. At the same time, FAS ($B = -.003, p = .923$), SSB ($B = .053, p = .094$), SAS ($B = .028, p = .326$) and CAS ($B = .011, p = .704$) did not yield any statistically significant results. Importantly, the total effect of SES on OLS shows that SES statistically significantly predicted OLS. However, when social capital and all other sociodemographic controls were accounted for in the model, SES could no longer significantly predict OLS ($B = .015, p = .468$). These results are contrary to the hypothesis that children with high SES are more likely to have high OLS. SES, social capital, and the demographic factors together explained 52% of the total variation in OLS (see Table 4).

Table 4 Results of the direct effect of SES and social capital on children's overall life satisfaction (OLS): *Model 1*

Predictors	CE (<i>B</i>)	SE	<i>t</i>	<i>p</i>
Socioeconomic status (SES)	.015	.200	.726	.468
Family sense of belonging	.409	.187	12.970	<.001
Family autonomy support	-.003	.281	-.097	.923
School sense of belonging	.053	.190	1.675	.094
School autonomy support	.028	.299	.983	.326
Community sense of belonging	.081	.152	2.816	<.05
Community autonomy support	.011	.233	.380	.704
Peer relationship	.090	.144	3.538	<.001
Age	-.012	.657	-.335	.738
gender	-.031	.825	-1.550	.121
Place of birth	.030	1.113	1.464	.144
Material deprivation	-.076	.469	-3.683	<.001
School bullying	-.047	.229	-2.210	<.05
Education level	-.021	1.503	-.562	.574
School category	-.018	.885	-.870	.384
Satisfaction with time use	.211	.212	9.158	<.001
Total effect				
Total effect of SES on OLS	.056	.237	2.298	<.05

Statistically significant effects ($p < 0.05$) are shown in bold

B standardised coefficients, *SE* standard error, *t* t-test

$N = 1,278$, $R^2 = .520$

The 'total effect' in the *SPSS-PROCESS Macro Hayes's version 3.3* is understood as the effect of SES on OLS without taking into account any mediation effects of social capital between the direct relationship between SES and OLS. The fact that the total effect of SES is statistically significant confirms that all sub-components of social capital together *moderated* the effect of SES on OLS. However, we still want to know which sub-component of social capital precisely played a mediating role and, indeed, which of the sub-components were the strongest mediators in the SES-OLS relationship after accounting for all independent controls. This final step is achieved by considering the indirect effect of SES on OLS through the various social capital components using the bootstrapping technique.

Indirect Effect of SES on OLS Through Social Capital As shown in Table 5, the effect of SES on Hong Kong children's OLS was mediated by various sub-components of social capital. More precisely, we found that FSB, CSB and PeerR played significant mediating roles between the SES-OLS relationship because all their confidence intervals did not contain zero. Approximately 46% of the total effect of SES on OLS was significantly mediated by FSB ($B = .026$, 95% CI [.003, .049]), which was the strongest mediator. In addition, approximately 9% of the total effect of SES on OLS was mediated by CSB ($B = .005$, 95% CI [.000, .014]), and approximately 13% was mediated by PeerR ($B = .007$, 95% CI [.001, .014]), respectively. Taken together,

Table 5 Result of bootstrapping mediation analysis in Model 1: Overall life satisfaction (OLS)

Indirect Path	Indirect Effect		95% CI (B)		Ratio (*100) Specific Mediation Effect to Total Effect ^a (%)
	B	BootSE	Lower	Upper	
SES → FSB → OLS	.026	.012	.003	.049	46.429
SES → FAS → OLS	.000	.003	-.006	.006	0
SES → SSB → OLS	.003	.002	-.001	.008	5.357
SES → SAS → OLS	.001	.001	-.002	.004	1.786
SES → CSB → OLS	.005	.004	.000	.014	8.929
SES → CAS → OLS	.000	.002	-.003	.005	0
SES → PeerR → OLS	.007	.004	.001	.014	12.500

Statistically significant effects ($p < 0.05$) are shown in bold

B completely standardised coefficients, BootSE bootstrapping standard error, CI bootstrapping confidence intervals

$N = 1,278$

^aRatio calculated as $100 \times (\text{indirect effect (B)} / \text{total effect})$, where the total effect is the sum of all mediation effects (i.e., the sum of indirect effects) and the direct effect of socioeconomic status (Mascha et al., 2013). A total proportion of 75.001% was mediated by social capital. All sociodemographic controls were included in the model

about 75% of the total effect of SES on OLS was mediated by social capital according to *Model 1*. Path estimates of the interplay among SES, social capital and OLS are provided in Fig. 3.

4.3.2 Composite Children's Subjective Well-Being

Direct Relationship Between SES, Social Capital and the CW-SWBS The previous findings remain robust compared with *Model 2* in predicting the direct relationship among SES, social capital and the CW-SWBS of Hong Kong children in their middle years. Here, FSB ($B = .385, p < .001$), SSB ($B = .083, p < .005$), CSB ($B = .080, p < .005$), and PeerR ($B = .150, p < .001$) yielded statistically significant results. At the same time, FAS ($B = .030, p = .265$), SAS ($B = .044, p = .078$) and CAS ($B = .048, p = .056$) did not significantly predict CW-SWBS. When social capital and the sociodemographic controls were accounted for, SES could again not predict CW-SWBS ($B = .015, p = .407$). However, the total effect of SES was statistically significant. SES, social capital, and the demographic factors together explained 63% of the total variation in CW-SWBS (see Table 6).

Indirect Effect of SES on CW-SWBS Through Social Capital Table 7 and Fig. 4 show that the effect of SES on CW-SWBS was mediated by FSB, SSB, CSB, and PeerR. By contrast, none of the autonomy support variables (FAS, SAS and CAS) played mediating roles because the confidence intervals derived contained zero. In *Model 2*, approximately 37% of the total effect of SES on CW-SWBS was significantly mediated by FSB ($B = .024, 95\% \text{ CI } [.002, .046]$), which was, again, the strongest mediator. Moreover, about 6% and 8% of the total effect of SES on CW-SWBS was

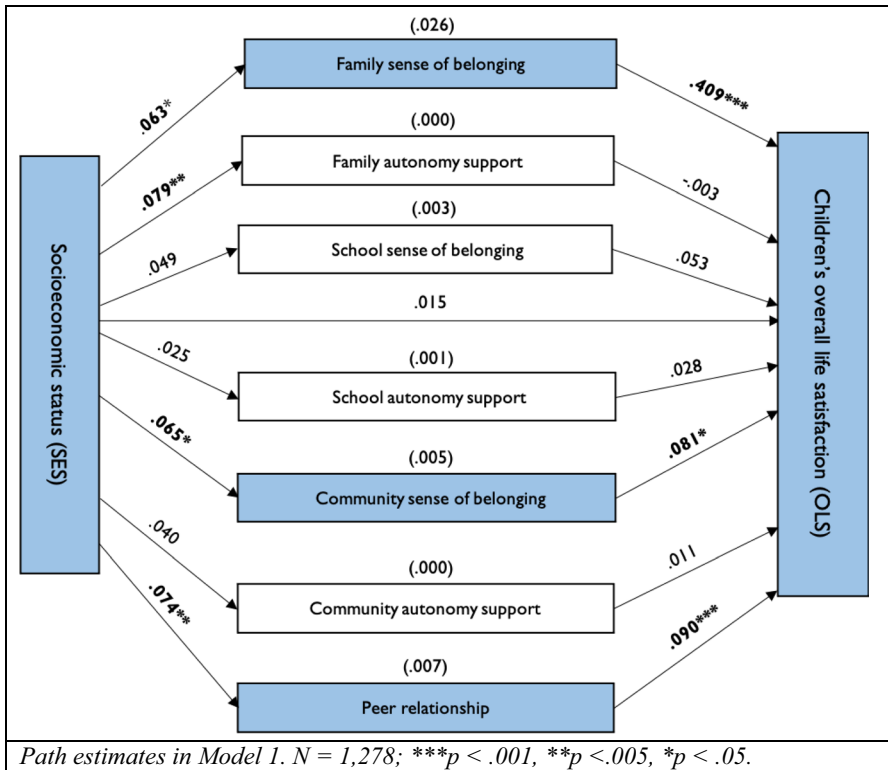


Fig. 3 Interplay among Hong Kong children’s socioeconomic status (SES), social capital, and overall life satisfaction (OLS)

mediated by SSB ($B = .004$, 95% CI [.000, .011], and CSB ($B = .005$, 95% CI [.000, .013] respectively, and approximately 17% were mediated by PeerR ($B = .011$, 95% CI [.003, .021], respectively. Overall, approximately about 75% of the total effect of SES on CW-SWBS was mediated by children’s social capital. The overall mediating effect of social capital between SES and CW-SWBS was almost the same as the one reported for OLS.

5 Discussion

The previous sections have argued the importance of gathering information directly from Hong Kong children; such information includes their relationship with their families, friends, classmates and teachers, how they spend time outside of school and the core issues of their lives (McAuley et al., 2012; Redmond et al., 2016; Rees & Main, 2015). Significant research progress has been made addressing concerns

Table 6 Results of the direct effect of SES and social capital on children's composite subjective well-being (CW-SWBS): *Model 2*

Predictors	CE (B)	SE	t	p
Socioeconomic status (SES)	.015	.186	.830	0.407
Family sense of belonging	.385	.174	13.914	<.001
Family autonomy support	.030	.262	1.115	0.265
School sense of belonging	.083	.177	2.975	<.005
School autonomy support	.044	.279	1.763	0.078
Community sense of belonging	.080	.142	3.165	<.005
Community autonomy support	.048	.217	1.911	0.056
Peer relationship	.150	.134	6.715	<.001
Age	-.002	.612	-.060	.952
Gender	-.015	.769	-.845	.398
Place of birth	.009	1.037	.517	.605
Material deprivation	-.003	.437	-.157	.875
School bullying	-.060	.213	-3.205	<.005
Education level	-.024	1.400	-.740	.460
School category	-.009	.824	-.486	.627
Satisfaction with time use	.202	.197	10.003	<.001
Total effect				
Total effect of SES on CW-SWBS	.065	.244	2.752	<.01

Statistically significant effects ($p < 0.05$) are shown in bold

B standardised coefficients, SE standard error, t t-test

$N = 1,278$, $R^2 = 0.630$

about developing reliable and comparable indicators of subjective child well-being (e.g., Good Childhood Reports). An increasing amount of international evidence has shown that children are more satisfied with their lives if they are not materially deprived, are not bullied, enjoy their school life and live in decent houses and safe neighbourhoods (Ben-Arieh, 2008; Lippman et al., 2009; UNICEF, 2013). Variations in child subjective well-being have also been shown to be strongly associated with family relationships (Cho, 2018). A multi-dimensional construct of child well-being that comprises individual (educational, social and physical and mental well-being) and contextual (i.e., family, peer, school and community) domains allows easier identification of both protective and risk factors for child development, thus making them more amenable to policy change (Bronfenbrenner, 1979).

This article examined how the SES and social capital of Hong Kong children in their middle years relate to two context-free measures of subjective child well-being, including OLS and CW-SWBS. We found that Hong Kong children in their middle years with high SES, high sense of belonging across different contexts and strong peer relationships have a greater chance of achieving high subjective well-being than those with low SES, low sense of belonging and poor peer relationships after controlling for all sociodemographic variables. The positive relationship between

Table 7 Result of bootstrapping mediation analysis in Model 2: Children's composite subjective well-being (CW-SWBS)

Indirect Path	Indirect Effect		95% CI (B)		Ratio (*100) Specific Mediation Effect to Total Effect ^a (%)
	B	BootSE	Lower	Upper	
SES → FSB → CW-SWBS	.024	.011	.002	.046	36.923
SES → FAS → CW-SWBS	.002	.003	-.002	.008	3.077
SES → SSB → CW-SWBS	.004	.003	.000	.011	6.154
SES → SAS → CW-SWBS	.001	.002	-.002	.005	1.538
SES → CSB → CW-SWBS	.005	.003	.000	.013	7.692
SES → CAS → CW-SWBS	.002	.002	-.001	.007	3.077
SES → PeerR → CW-SWBS	.011	.005	.003	.021	16.923

Statistically significant effects ($p < 0.05$) are shown in bold

B completely standardised coefficients, *BootSE* bootstrapping standard error, *CI* bootstrapping confidence intervals

$N = 1,278$

^aRatio calculated as $100 \times (\text{indirect effect (B)} / \text{total effect})$, where the total effect is the sum of all mediation effects (i.e., the sum of indirect effects) and the direct effect of socioeconomic status [Mascha et al., 2013]. A total proportion of 75.384 % was mediated by social capital. All sociodemographic controls were included in the model

SES and children's subjective well-being may be related to the direct effects of low family affluence resulting in issues such as a lack of space and privacy in the home (lack of sufficient bathrooms), reduced access to educational tools and entertainment (lack of sufficient computers), costs of public transportation (lack of car) and feeling social exclusion from their peers (lack of traveling with the family). The finding that Hong Kong children with a high sense of belonging and strong peer relationships report more positive subjective well-being, either measured by single-item OLS or composite CW-SWBS, is likely linked to the socioemotional support derived from Hong Kong children's perception that adults within their family, school and in the wider community are kind, helpful and generally concerned for them. Our findings suggest that similar socioemotional support can be garnered from feelings of safety in different contexts of Hong Kong children's social environment as well as from having a sufficient number of friends that are regarded as generally kind and supportive.

More importantly, we set out to examine whether both children's 'sense of belonging' and 'autonomy support' have the potential to function as a protective asset regarding children's well-being. Following the 'health assets approach' in the public health literature, we argued that these sub-components of social capital may present a mediator of the effect of SES on children's subjective well-being. In other words, while SES, social capital and children's well-being are interrelated, we hypothesised that social capital explains, rather than merely influences, the relationship between SES and children's subjective well-being. This argument highlighted that different pathways to subjective child well-being exist and that social capital may present a valuable social resource for children to protect against the adverse effects of low family SES. Indeed, we found that even in the presence of SES, the

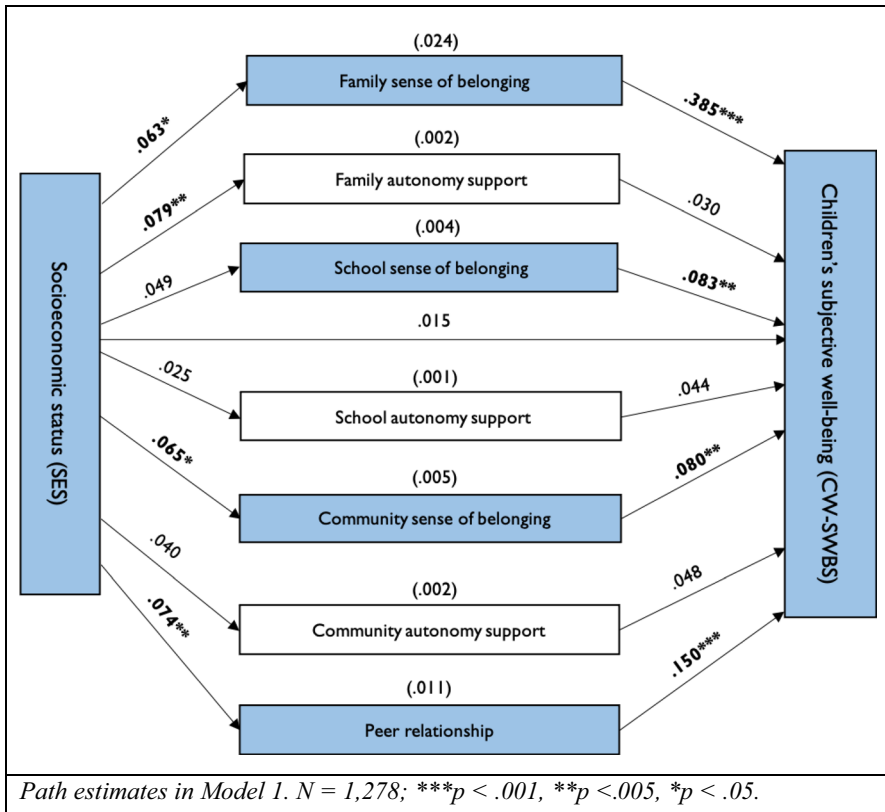


Fig. 4 Interplay among Hong Kong children’s socioeconomic status (SES), social capital, and composite subjective well-being (CW-SWBS)

impact of social capital remains critical. As such, Hong Kong children from families with low SES but with high sense of belonging and positive peer relationships were found to be more likely protected from low subjective well-being compared with children who were from families with low SES and also had generally low levels of social capital. FSB, CSB, and PeerR mediated the effects of SES on both OLS and CW-SWBS. This finding also explains why the direct effects of SES on OLS and CW-SWBS were no longer significant when these sub-components of social capital were controlled for. The findings further indicate that unlike sense of belonging in the family and community contexts, while SSB can enhance school children’s OLS, it is unable to protect school children’s OLS against the effects of SES. This is likely because irrespective of high SSB, poor school children are more likely to lack the capability to meet school economic necessities which can negatively affect their OLS (Addae, 2020).

In the literature, a high sense of belonging and autonomy support have been found to increase self-worth, intrinsic motivation and perceived meaningfulness in children’s lives, thus arguably boosting children’s optimism for the future irrespective

of their current living conditions within the family (Addae, 2020). This finding suggests that Hong Kong children are indirectly affected by SES through the impacts of adults' behaviour in their families, schools, and communities as well as their peers' behaviour toward them. Interestingly, the assumption of positive effects of 'autonomy support' on subjective well-being were not supported for Hong Kong children in their middle years. FAS, SAS and CAS were not found to augment subjective child well-being once other variables were controlled for. They also did not play any mediating role in the SES-subjective well-being relationship for Hong Kong children in their middle years, which is contrary to findings from some international studies (e.g., Morgan et al., 2012; Addae, 2020).

This contradiction in our findings compared to the wider literature could be explained by two arguments and their respective veracity might be tested by conducting similar analysis for other Asian and Non-Asian societies included in the third wave of Children's Worlds. First, there was a difference in the age-cohorts of the study participants employed in this study, i.e., the international studies referenced involved adolescents of 13-18 years old while the present study involved mostly children with age lower than 15 years and included as young as 9-year-old children. Social capital is affected by age, and empirical evidence indicates that the need for autonomy support usually increases during adolescence (Zimmer-Gembeck & Collins, 2003). The importance of autonomy support or its effects on child outcomes could, therefore, vary for different age groups such as younger and older children/adolescents. Second, the contradiction could be due to the differences in cultural contexts of the different countries from which the studies are conducted. As mentioned previously, culture has been found to influence the constellation of children's health assets (social capital) in different societies (Morgan et al., 2012). What is more, the perceived importance of autonomy support for children in individualistic cultures may vary from that in collectivist cultures like Hong Kong resulting in varying implications for children's outcomes. For instance, Fung et al. (2017:8) expressed that the "Confucian traditions in child socialization appear to be entrenched and stable in Hong Kong where families endorsed the highest levels of restrictive control and lowest levels of autonomy support". Also, findings suggest that "psychological control which negatively affects autonomy support may continuously be perceived as an acceptable and effective form of socialization in Hong Kong" (Fung et al., 2017:8). The suggested irrelevance of measured autonomy support to children's lives in Hong Kong according to our findings thus presents a nod towards Morgan et al. (2012) who propose that it is challenging to precisely delineate the principles for applying social capital across cultures and recommend that social capital for children and young people must always be adequately defined at the research or intervention planning stage.

The role of the family in helping children achieve higher subjective well-being was superior to those of schools/teachers, peers, and adults in the community. In other words, this finding indicates that the family context (home) is potentially more protective of Hong Kong children's subjective well-being compared with other social contexts (schools and communities). While some of the various components of social capital presented a strong mediation in the SES-subjective well-being relationship—a proportion of about 75% (Model 2) and 75% (Model 1) of

the total effect of SES were mediated by social capital, other sociodemographic controls also played a part in the effect of SES on the child respondents' well-being outcomes. This result implies that sociodemographic factors also partly affected the relationship among SES, social capital and well-being. Of particular interest is the finding that Hong Kong children's subjective well-being varied with negative experiences of bullying, dissatisfaction with time use, as well as the extent of material deprivation in their daily lives corroborating the observations of previous studies (Bradshaw et al., 2013; Main & Bradshaw, 2012; Main et al., 2019). As reported in the above summary of empirical results, school bullying and satisfaction with time use yielded statistically significant results on children's OLS and their scores on the CW-SWBS; material deprivation yielded statistically significant results on OLS but not CW-SWBS.

This article has several strengths but also some weaknesses. Despite applying bootstrapping mediation analysis, this study used cross-sectional data and, therefore, was not able to establish causality among SES, social capital and subjective child well-being. Although representative, the data used in this article only captured Hong Kong children in their middle years (aged from 9 -14). A broader sample including younger (8-year-olds) and older respondents (adolescents) would have allowed more robust generalisations of our findings. Lastly, while we deliberately specified parsimonious empirical models to facilitate easier interpretations of statistical findings, further robustness checks, including additional independent controls, are warranted. The comparative findings of the third wave of the *International Survey of Children's Well-Being* suggest that specifically for Hong Kong, further exploration of alternative measures capturing children's self-reported satisfaction with their time use and daily activities as independent and dependent variable may prove fruitful in any future research endeavours in this direction (Rees et al., 2020). Furthermore, despite concerns about children's ability to report their own SES via their family background, future research may place more emphasis on Hong Kong children's family structures (parents' marital status, residence status, income, educational achievements, occupations) to better capture the intergenerational transmission of opportunity in Hong Kong. Following the OECD's Programme for International Student Assessment (PISA), this could be achieved, for instance, by administering separate questionnaires for children and their parents in future studies.

6 Conclusion

Childhood experiences have a profound effect not only on the current lives of children but also on their future opportunities and prospects. Extensive empirical evidence highlights the link between childhood conditions and well-being in adulthood (Bradshaw, 2015). Failure to protect and promote the well-being of children is likely to have adverse effects on children's cognitive and non-cognitive skill development (Gershoff et al., 2007), health and risk behaviours (Currie et al., 2012), relationships (Goswami, 2012; Lau & Bradshaw, 2018; Cho, 2018), self-perceptions and future aspirations (Rees & Main, 2015). If some children in society

systematically fall behind their peers in the core areas of their well-being, this issue should be regarded as a matter requiring urgent attention even if other aspects of economic and social development are satisfactory (UNICEF, 2013). However, only limited internationally comparable child-derived data in East Asian context currently exist, and the determinants of the subjective well-being of children in their middle years remain under-investigated.

To close this research gap, this article used a cross-sectional survey involving a randomly selected group of 1,279 Hong Kong children in their middle years (aged from 9 and -14 years) as part of third wave of the *International Survey of Children's Well-Being*. Using a path analytical framework and bootstrapping analysis as part of a theoretical 'health assets approach', our multivariate regression analysis demonstrated that social capital is a significant mechanism through which SES impacts children's subjective well-being in Hong Kong. More precisely, we argued that for the specific group of Hong Kong children in their middle years, their sense of identity and safety within their family school and community presents a potential protective health resource that can be utilised by public policy to promote children's well-being irrespective of their family socio-economic background.

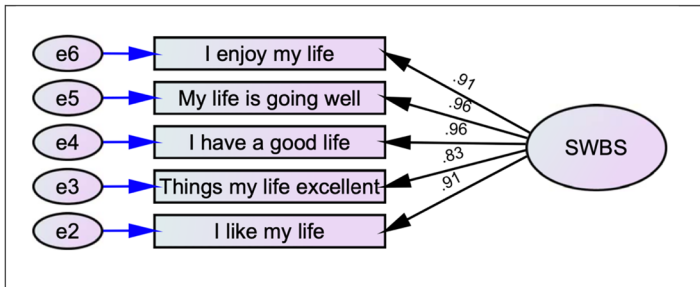
While our empirical models confirmed that improving the quality of life for children in Hong Kong can also be achieved through policy interventions focusing on the prevention of material deprivation, enhancing children's satisfaction with time use, and eliminating exposure to bullying, the important finding of the role of familial social capital supports more targeted policy interventions for Hong Kong children in their middle years. This finding should not be interpreted as soliciting an 'either-or' choice for policymakers but should be interpreted as a guide to facilitate a renewed search for optimal institutional complementarities within a framework of reform of both child empowerment and social welfare, including the existing social safety-nets, social services, and other working family support. Calls for the maintenance and investment into these policy interventions are pertinent in light of the self-prescribed fiscal discipline of the successive Hong Kong government and the early signs of further downward pressures against alleged government profligacy in the wake of the recent global economic and public health crises.

This article also examined the role of children's perceptions on their ability to influence decisions affecting their own lives. Autonomy support within the family, school and the community did not play any direct or mediating role in the SES-subjective well-being relationship according to our analysis. However, we caution against dismissing these specific components of the social capital framework altogether. International research on adolescents confirm the important predictive and mediating role of autonomy support and control particularly within the familial context (Morgan et al., 2012; Addae, 2020). Therefore, further studies to re-confirm these effects for different age-groups in Hong Kong are warranted. Generally, this article suggests that studies should move beyond the broad classifications of children's social contexts in their families, schools, and communities to allow for a more holistic assessment of the determinants of children's subjective well-being leaning towards the 'health assets approach'. By having provided

an answer to the question on which sub-components of social capital are most important for the well-being of Hong Kong children in the middle years, i.e., sense of belonging and peer relationships, this article hopes to encourage similar analyses of other Asian cases to facilitate comparative lessons and findings.

Appendix 1

See Fig. 5.



Model	χ^2	df	<i>p</i> -value	CFI	GFI	RMSEA (confidence interval)
Five-item CW-SWBS	58.323	5	.000	.994	.985	.084 (.065 - .104)

Fig. 5 CFA of five-item CW-SWBS for 10- and 12-year-olds in Hong Kong

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References

- Addae, E. A. (2020). The mediating role of social capital in the relationship between socioeconomic status and adolescent wellbeing: Evidence from Ghana. *BMC Public Health*, 20(1), 1–11.
- Baum F.E., & Ziersch A.M. (2003). Social capital. *Journal of Epidemiological Community Health*, 57(5), 320–323.
- Ben-Arieh, A. (2008). The child indicators movement. *Child Indicators Research*, 1(1), 3–16.

- Ben-Arieh, A., Kaufman, N. H., Andrews, A. B., George, R. M., Lee, B. J., & Aber, L. J. (Eds.). (2001). *Measuring and monitoring children's well-being*. Kluwer Academic Publishers.
- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–58). Greenwood.
- Bradshaw, J. (2015). Child poverty and child well-being in international perspective. In Fernandez, E., Zeira, A., Vecchiato, T., Canali, C. (Eds.). *Theoretical and empirical insights into child and family poverty* (pp. 59–70). Springer International Publishing.
- Bradshaw, J., Martorano, B., Natali, L., & de Neubourg, C. (2013). Children's subjective well-being in rich countries. *Child Indicators Research*, 6(4), 619–635.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge: Harvard University Press.
- Buijs, T., Maes, L., Salonna, F., Damme, J. V., Hublet, A., Kebza, V., Costongs, C., Currie, C., & Clercq, B. D. (2016). The role of community social capital in the relationship between socioeconomic status and adolescent life satisfaction: mediating or moderating? Evidence from Czech data. *International Journal for Equity in Health*, 15(1)203. <https://doi.org/10.1186/s12939-016-0490-x>
- Bwalya, J.C. & Sukumar, P. (2019). *The relationship between social capital and children's health behaviour in Ireland*. Available at SSRN 3418320.
- Casas, F., & Rees, G. (2015). Measures of children's subjective well-being. *Child Indicators Research*, 8(1), 49–69.
- Cho, E. Y. N. (2018). Links between poverty and children's subjective wellbeing: Examining the mediating and moderating role of relationships. *Child Indicators Research*, 11, 585–607.
- Chou, K. L. (2012). Perceived discrimination and depression among new migrants to Hong Kong: The moderating role of social support and neighborhood collective efficacy. *Journal of Affective Disorders*, 138(1–2), 63–70.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95–S120.
- Currie, C., et al. (2012). *Social determinants of health and well-being among young people*. WHO Regional Office for Europe.
- Currie, C., Roberts, C., Settertobulte, W., Morgan, A., Smith, R., Samdal, O., ... & World Health Organization. (2004). *Young people's health in context: Health Behaviour in School-aged Children (HBSC) study: international report from the 2001/2002 survey* (No. EUR/04/5048327). Copenhagen: WHO Regional Office for Europe.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542–75.
- Elgar, F. J., McKinnon, B., Torsheim, T., Schnohr, C. W., Mazur, J., Cavallo, F., & Currie, C. (2016). Patterns of socioeconomic inequality in adolescent health differ according to the measure of socioeconomic position. *Social Indicators Research*, 127(3), 1169–80.
- Fattore, T., Mason, J., & Watson, E. (2009). When children are asked about their well-being. *Child Indicators Research*, 2(1), 57–77.
- Fung, J., Kim, J. J., Jin, J., Wu, Q., Fang, C., & Lau, A. S. (2017). Perceived social change, parental control, and family relations: A comparison of Chinese families in Hong Kong, Mainland China, and the United States. *Frontiers in Psychology*, 8, 1671.
- Ge, T. (2018). Effect of socioeconomic status on children's psychological wellbeing in China: the mediating role of family social capital. *Journal of Health Psychology*, 25(8), 1118–1127.
- Gershoff, E. T., Aber, J. L., Raver, C. C., & Lennon, M. C. (2007). Income is not enough. *Child Development*, 78(1), 70–95.
- Giordano, G. N., & Lindstrom, M. (2010). The impact of changes in different aspects of social capital and material conditions on self-rated health over time: a longitudinal cohort study. *Social Science & Medicine*, 70(5), 700–710.
- Goswami, H. (2012). Social relationships and children's subjective well-being. *Social Indicators Research*, 107(3), 575–588.
- Goswami, H. (2014). Children's subjective well-being: Socio-demographic characteristics and personality. *Child Indicators Research*, 7, 119–140.
- Griggs, J., & Walker, R. (2008). *The costs of child poverty for individuals and society*. York: Joseph Rowntree Foundation.
- Harpham, T. (2008). *Social capital and health*. Springer.
- Hartley, J. E., Levin, K., & Currie, C. (2016). A new version of the HBSC family affluence scale-FAS III: Scottish qualitative findings from the international FAS development study. *Child Indicators Research*, 9(1), 233–245.

- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis. A regression-based approach*. London: The Guilford Press.
- Huebner, E. S. (1991a). Initial development of the student's life satisfaction scale. *School Psychology International*, 12(3), 231–240.
- Huebner, E. S. (1991b). Further validation of the students' life satisfaction scale: The independence of satisfaction and affect ratings. *Journal of Psychoeducational Assessment*, 9(4), 363–368.
- Inchley, J., Currie, D. (2016). Growing up unequal: gender and socioeconomic differences in young people's health and wellbeing. *Health behaviour in school-aged children (HBSC) study No. 7*. https://www.euro.who.int/__data/assets/pdf_file/0003/303438/HSBC-No.7-Growing-up-unequal-Full-Report.pdf
- Kim, D., Subramanian, S. V., & Kawachi, I. (2008). Social capital and physical health: A systematic review of the literature. In I. Kawachi, S. V. Subramanian, & D. Kim (Eds.), *Social capital and health* (pp. 139–90). Springer.
- Klocke, A., & Stadtmüller, S. (2019). Social capital in the health development of children. *Child Indicators Research*, 12(4), 1167–85.
- Lam, C. B., & McHale, S. M. (2015). Time use as cause and consequence of youth development. *Child development perspectives*, 9(1), 20–25.
- Lau, M., & Bradshaw, J. (2018). Material well-being, social relationships and children's overall life satisfaction in Hong Kong. *Child Indicators Research*, 11(1), 185–205.
- Lau, M., & Bradshaw, J. (2010). Child well-being in the Pacific Rim. *Child Indicators Research*, 3(3), 367–383.
- Lau, M., & Kühner, S. (2020). *Children's Worlds National Report: China – Hong Kong (SAR)*. Accessible at: <https://iscweb.org/wp-content/uploads/2020/03/China-Hong-Kong-SAR-Report-Wave-3.pdf>
- Lee, B. J., & Yoo, M. S. (2015). Family, school, and community correlates of children's subjective well-being: An international comparative study. *Child Indicators Research*, 8(1), 151–175.
- Lippman, L. H., Moore, K. A., & McIntosh, H. (2009). *Positive indicators of child well-being*. Florence: UNICEF Innocenti Research Centre. Accessible at: <https://www.unicef-irc.org/publications/580-positive-indicators-of-child-well-being-a-conceptual-framework-measures-and-methodological.html>
- Main, G., & Bradshaw, J. (2012). A child material deprivation index. *Child Indicators Research*, 5(3), 503–521.
- Main, G., Montserrat, C., Andresen, S., Bradshaw, J., & Lee, B. J. (2019). Inequality, material well-being, and subjective well-being: Exploring associations for children across 15 diverse countries. *Children and Youth Services Review*, 97(1), 3–13.
- Mascha, E. J., Dalton, J. E., Kurz, A., & Saager, L. (2013). Understanding the mechanism: mediation analysis in randomized and nonrandomized studies. *Anesthesia and analgesia*, 117(4), 980–94.
- McAuley, C., McKeown, C., & Merriman, B. (2012). Spending time with family and friends. *Child Indicators Research*, 5(3), 449–467.
- McPherson, K. E., Kerr, S., Morgan, A., McGee, E., Cheater, F. M., McLean, J., & Egan, J. (2013). The association between family and community social capital and health risk behaviours in young people: an integrative review. *BMC Public Health*, 13(1), 1–13.
- Moore, R. C. (2017). *Childhood's domain: Play and place in child development* (Vol. 6). Routledge.
- Morrow, V. (1999). Conceptualising Social Capital in relation to the well-being of Children and Young People: A Critical Review. *The Sociological Review*, 43, 744–765.
- Morrow, V. (2001). *Networks and Neighbourhoods: children's and young people's perspectives*. Health Development Agency.
- Morgan, A. (1999) Measuring Social Capital in School Aged Children using the WHO Health Behaviour School Aged Children. Paper submitted to the HBSC Social Inequalities Task Group
- Morgan, A. (2010). Social capital as a health asset for young people's health and wellbeing. *Journal of child and adolescent psychology*, Supplement 2: life contexts 19–42.
- Morgan, A., (2011). Social capital as a health asset for young people's health and well-being: definitions, measurement and theory. Retrieved from: https://openarchive.ki.se/xmlui/bitstream/handle/10616/40819/Thesis_Antony_Morgan.pdf?isAllowed=y&sequence=2
- Morgan, A., Ziglio, E., & Davies, M. (Eds.) (2010). *Health assets in a global context: theory, methods, action*. Springer Science & Business Media.
- Morgan, A., (2011). Social capital as a health asset for young people's health and well-being: definitions, measurement and theory.
- Morgan, A., Rivera, F., Moreno, C., & Haglund, B. J. (2012). Does social capital travel? Influences on the life satisfaction of young people living in England and Spain. *BMC Public Health*, 12(138).
- OECD, P. (2017). Results (Volume III): Students' Well-Being. 2017, PISA. Retrieved from <https://doi.org/10.1787/9789264273856-en>

- Oksanen, T., Kouvonen, A., Vahtera, J., Virtanen, M., & Kivimäki, M. (2010). Prospective study of workplace social capital and depression: are vertical and horizontal components equally important? *Journal of Epidemiology & Community Health*, 64(8), 684–689.
- Putnam, R. D. (2000). *Bowling alone: the collapse and revival of American community*. Simon and Schuster.
- Pople, L., Rees, G., Main, G., Bradshaw, J. (2015). The good childhood report 2015. The Children's Society and the University of York. Accessible at: <https://www.childrenssociety.org.uk/sites/default/files/TheGoodChildhoodReport2015.pdf>
- Redmond, G., Skattebol, J., Saunders, P., Lietz, P., Zizzo, G., O'Grady, E., et al. (2016). Are the kids alright? Young Australians in their middle years. Flinders University, the University of NSW and the Australian Council for Educational Research. Accessible at: <https://core.ac.uk/reader/36781952>
- Rees, G., & Main, G. (2015). *Children's views on their lives and well-being in 15 countries*. York: Children's Worlds Project.
- Rees, G., Andersen, S., & Bradshaw, J. (2016). *Children's views on their lives and well-being in 16 countries*. York: Children's Worlds Project.
- Rees, G., Bradshaw, J., Goswami, H., & Keung, A. (2010). Understanding children's wellbeing. London: *The Children's Society*.
- Rees, G., Goswami, H., Pople, L., Bradshaw, J., Keung, A., & Main, G. (2013). *The Good Childhood Report 2013*. The Children's Society and the University of York. Accessible at: https://www.childrenssociety.org.uk/sites/default/files/tcs/good_childhood_report_2013_final.pdf
- Rees, G., Savahl, S., Lee, B. J., & Casas, F. (Eds.) (2020). *Children's views on their lives and well-being in 35 countries: A report on the Children's Worlds project, 2016-19*. Jerusalem, Israel: Children's Worlds Project (ISCWeB). Accessible at: <https://iscweb.org/wp-content/uploads/2020/07/Childrens-Worlds-Comparative-Report-2020.pdf>
- Ridge, T. (2009). *Living with Poverty*. DWP.
- Stiglitz, J., Sen, A., & Fitoussi, J.-P. (2010). *Mismeasuring Our Lives*. The New Press.
- Szreter, S., & Woolcock, M. (2004). Health by association? Social capital, social theory, and the political economy of public health. *International Journal of Epidemiology*, 33(4), 650–67.
- Torsheim, T., Cavallo, F., Levin, K. A., Schnohr, C., Mazur, J., Niclasen, B., ... & FAS Development Study Group. (2016). Psychometric validation of the revised family affluence scale: a latent variable approach. *Child Indicators Research*, 9(3), 771–784.
- Unicef. (2007). *Child poverty in perspective: an overview of child well-being in rich countries (Innocenti Report Card 7)*. Florence: UNICEF Office of Research.
- Unicef. (2013). *Child well-being in rich countries (Innocenti Report Card 11)*. Florence: UNICEF Office of Research.
- Unicef. (2020) *Worlds of Influence: Understanding What Shapes Child Well-being in Rich Countries (Innocenti Report Card 16)*, Florence: UNICEF Office of Research – Innocenti.
- Xu, D., & Wu, X. (2017). The rise of the second generation: Aspirations, motivations and academic success of Chinese immigrants' children in Hong Kong. *Journal of Ethnic and Migration Studies*, 43(7), 1164–1189.
- Zimmer-Gembeck M. J., Collins W. A. (2003) Autonomy development during adolescence. In: Adams G. R., Berzonsky M. D. (eds.) *Blackwell Handbooks of Developmental Psychology*. Blackwell Publishing: Malden, MA, pp. 175–204.

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