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The Association Between the Material Well-Being and the Subjective Well-Being of Children in 35 Countries

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Abstract

It is well established that child poverty has a profound, costly, and long-term impact on physical and mental health, educational attainment, and outcomes in adulthood. However, to date, while among adults a correlation between income and subjective well-being has been found, findings of such an association during childhood are mixed. This may be because the indicators available for both child poverty and subjective well-being have been limited – mainly to household incomes reported by adults and single measures of life satisfaction. This article explores the opportunities presented by the data collected in the third wave of Children's Worlds, the school-based survey of children in 35 countries. The study employed a wider range of measures of material well-being, as well as subjective well-being, in terms of living standards in a larger range of countries. We have found that at both country comparative level, and within the country level, there is an association between material deprivation and some measures of subjective well-being, but the strength of the association varied between the country level and individual-level analyses, and across countries at the individual-level. At the macro-country level, the Family Affluence Scale was not significantly associated with most subjective well-being measures, while the deprivation scale, and a multi-dimensional measure that was developed in this paper, showed high correlations with overall life satisfaction and feelings of sadness. At the individual-level, the correlations were generally weak and varied between countries. We conclude with a discussion regarding possible explanations for these findings and their possible implications.

Keywords Child poverty · Material deprivation · Subjective well-being · International comparison

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1 Background

Until recently the material well-being of children has been assessed by asking their parents, and the most common indicator used has been household income. However, household income alone has many weaknesses as an indicator of poverty, especially in the context of child poverty: the thresholds and the equivalence scales used to adjust income to household size are arbitrary; it is subject to problems of underreporting; it does not reflect disadvantages which are broader than income (such as housing or neighbourhood conditions); and does not take into account how income is distributed within the household (Gordon, 2006; Saunders et al., 2009; Main & Bradshaw, 2012). This is partly why Peter Townsend (1979) pioneered the use of a deprivation measure, based on the number of items and activities that households lacked. Material deprivation is claimed to provide a more direct measure of poverty, allowing analysis at the individual-level and not just at the household level, thus drawing on actual living standards (Main et al., 2019).

That approach has been extended to items and activities more relevant to children, notably in the EU Statistics on Income and Living Conditions (SILC))de Neubourg et al., 2012, Guio et al., 2018(. However, the judgments about whether they are necessities and whether children lack them still tend be made by adults. As surveys with children as participants have begun to develop, they have started to include questions seeking to assess children's living standards based on their direct reports. The World Health Organization sponsor the Health Behaviour of School-Aged Children study (HBSC), which is undertaken every four years in many countries, and is a school-based survey of 11, 13 and 15-year-olds that has developed a Family Affluence Scale, using items that relate to family wealth (Boyce et al., 2006; Currie et al., 2012; Inchley et al., 2020). The OECD PISA survey of 15-year-olds is conducted every three years and also has some questions designed to assess living standards (OECD, 2019).

Subjective well-being measurement among children has also been broadened over the years. Campbell el al., (1976) were one of the first to define Subjective well-being. They identified subjective well-being as *perceptions, evaluations and aspirations of people on their lives.* Subjective well-being measures developed as part of the positive measures that the concept of "quality of life" brought, adding to the traditional concepts of positive social change, psychosocial factors, and most notably the concept of *personal well-being*. The latter was delineated by many terms such as subjective well-being, psychological well-being, happiness, life satisfaction, and subjective quality of life. Researchers started to investigate factors that contribute to psychological well-being in their quest to understand the entire spectrum of psychological outcomes (Gilman & Huebner, 2003).

Most theories of subjective well-being claim it involves both affective and cognitive components (Cummins, 2014; Diener, et al., 1999). However, efforts to measure subjective well-being in terms of life satisfaction focused mainly on the cognitive component of subjective well-being, while only recently studies are considering also affective measures (Casas, 2011; Rees et al., 2013).

Following their Good Childhood Inquiry, the Children's Society in England launched the annual Good Childhood Reports (starting in 2012) partly based on a survey of children in England aged 8, 10, 12, and 14. They undertook qualitative research with children to establish a list of items and activities that they considered necessities. This was developed into the child deprivation scale employed in subsequent surveys and this index was adopted in the second wave of the Children's Worlds project (http://www.isciweb.org/). The Children's Worlds project is a world-wide research survey on children's subjective well-being. The survey is a structured, anonymous, self-reporting questionnaire focusing on children's satisfaction in various aspects of their lives. The third wave of the Children's Worlds survey that was conducted between 2016 and 2019 used a more extensive range of indicators of material circumstances than any previous survey of children. The current study employs these material well-being measures, to gather an enhanced picture of the association between material well-being and subjective well-being from a cross-national perspective.

1.1 The importance of a children's perspective on their material well-being

The UN Convention on the Rights of the Child calls us to listen to children and take their views into account. Accordingly, in the past decades, the concept of children's rights and the acceptance of children, not only as needing protection but also as active actors in society, has risen and brought the recognition that children's perceptions of their well-being must be part of research relevant to their lives (Ben-Arieh et al., 2014).

The UN Sustainable Development Goals have clear targets for child poverty reduction. Certainly, since Ridge's pioneering study talking to children about poverty (Ridge, 2002), we know that children are sensitive to their comparative material status, ashamed of what they do not have, feel deprived if they cannot invite their friends to visit or participate in leisure or school activities and, most critical of all, they do their level best to hide these feelings from their parents and avoid asking for things they know their parents cannot afford. Children living in low income and deprived families were much more likely to report economising, including hiding needs from parents (Ridge, 2002; Skattebol, 2011; Fattore & Mason, 2017).

Further, we know from the studies that have interviewed both children and their parents about their perceptions of necessities, that they assess assets and activities differently (Middleton, & Adelman, 2003, Mahony & Pope, 2018). In studies that have covered both parents' and children's perceptions of poverty, there is a large group where the perceptions coincide – either both children and parents agree that they are poor or agree that they are not poor. But two other groups do not agree – a small minority, where, based on parental reports of household income they are not poor, nevertheless the children feel deprived. Then a larger group where the household is poor, but the children do not feel poor. Some of this latter group may be explained by 'adaptive preferences' – children adapting to their circumstances, but there is also evidence that parents, particularly mothers, protect their children from deprivation by going short themselves. The former group may be the result of money

management practices within the family (mean parents not sharing resources), which may affect women as well as children (Main, 2017; Main & Bradshaw, 2012).

1.2 The association between children's material well-being and subjective well-being

Most of the cross-national studies measuring children's and adolescents' material well-being have used the Family Affluence Scale (FAS), using six items of family wealth. At the macro-level, FAS was found to be associated with health behaviours and outcomes (Boyce et al., 2006; Elgar et al., 2015), and at the micro-level is was shown to be associated with children's health outcomes (Zambon et al., 2006) and adolescents' physical and mental health problems (Von Rueden et al., 2006).

More specifically in the context of subjective well-being (SWB), a macro-level international study using HBSC data regarding 29 countries, Bradshaw and et al., (2011) found a strong negative association between adolescents' SWB and the country's deprivation level (measured as a percentage of households with an enforced lack of consumer durables). This deprivation measure explained 43% of the variation in life satisfaction. Moreover, another analysis of 29 high-income countries, based on data from the HBSC, found at a macro-level that the material well-being domain was the most highly correlated domain to overall life satisfaction ($r=0.677$), compared to other life domains such as education and health (Bradshaw, et al., 2013).

At the micro-level, family affluence was found to have a positive correlation with adolescents' SWB in 30 out of 32 countries in Europe and North America (Zambon et al., 2006), with the association ranging between $r=0.06$ and 0.276. Levin et al. (2010) also found in their analysis of data from 35 countries using HBSC data that family affluence was significantly associated with the life satisfaction of children, even after adjustment for the family structure. This association varied across countries and tended to be curvilinear, with a steeper relationship between lower family affluence and life satisfaction, which flattened as family affluence increased. Similarly, Von Rueden et al. (2006) found in the KIDSCREEN project that adolescents from seven European countries, who had low or medium family affluence, were at risk of a lower quality of life, as well as lower psychological well-being, moods, and emotions.

A more recent analysis, also at the micro-level, of data from 33 countries from the 2017/2018 HBSC survey showed that when using FAS (III) higher SES was negatively correlated to life dissatisfaction and psychosomatic complaints, with coefficients of $r=-0.51$ and -0.29 respectively (Kern et al., 2020). Similar findings were also found regarding these 33 countries in data from the four latest waves of the HBSC, where having each item of the scale was positively correlated with life satisfaction (Hansen & Schutzer, 2020).

A study that used recent data from PISA's Economic, Social and Cultural Status (ESCS) index, created a country-specific categorical socio-economic status measure for 46 countries. The study found average life satisfaction at the micro-level was lower and the proportion of students reporting low life satisfaction was higher among students from low SES than students from higher SES (Marquez &

Long, 2020). In recent years, the family wealth part of this measure has been further found to serve as a factor in the decline of life satisfaction (Marquez & Inchley, Forthcoming).

Finally, in a study using data from the second wave of the Children's Worlds survey regarding 15 diverse countries, it was found that access to child-specific material resources was significantly associated with children's SWB (Gross-Manos, 2017; Main et al, 2019) and psychological well-being (Crous, 2017) at the micro-level. However, the association with Student Life Satisfaction was low, r = 0.123 (Gross-Manos, 2017), and the magnitude of association tended to vary across countries (Main et al, 2019). However, at the macro-level national access to material resources was not found to be associated with subjective well-being (Main et al, 2019).

1.3 Different measures of material well-being and SWB

Generally, studies have found a higher association between children's views of their material circumstances and their subjective well-being than between household income and their SWB, where only a weak association was found (Knies, 2011; Rees et al., 2011). A material deprivation measure was found to be a better predictor of children's SWB than any conventional measures of material circumstances (such as receiving free school meals and the number of adults with paid jobs) at the family level (Main & Pople, 2011). These findings fit the understanding that the child-derived method is more effective in predicting and explaining the children's SWB, comparing to the parent-derived approach (Bradshaw et al., 2017; Lau & Bradshaw, 2018; Main & Bradshaw, 2012; Rees & Bradshaw 2018).

Looking closer at different child-derived measures of material well-being, Main (2017, 2019) found her children's deprivation scale (Main, 2013) has a stronger relationship with their subjective well-being, compared to measurement by the Family Affluence Scale (Boyce et al., 2006). They differ from one another mainly in that most of the items in the children's deprivation scale are attributed specifically to the child itself (e.g. clothes and equipment for school), as opposed to the items in the FAS being attributed to the family as a whole (e.g. number of cars, computers, annual vacations).

Aside from these two main measures, there have also been a few attempts to measure material well-being using various dimensions. Spanish research examined four "dimensions of poverty": education, satisfaction with home, subjective poverty, and material dimensions. It found that they all appear as negative predictors for adolescents' life satisfaction, with a greater weight for satisfaction with home, followed by subjective poverty, education and material deprivation was the last (Montserrat et al., 2015). A couple of other attempts to create a broader dimensional measurement related to child material well-being tried to operationalise the concept of social exclusion (Crous & Bradshaw, 2017; Gross-Manos, 2015). Both attempts, using different operationalisation frameworks, found children's deprivation to be less important for children's SWB, than the dimensions of social exclusion in a cross-national sample of countries from the Children's Worlds second wave (Crous & Bradshaw, 2017; Gross-Manos. 2017).

In summary, previous research on the relationship between material well-being and subjective well-being in childhood has tended to be restricted to rich countries. It has further tended to use household income or a household-oriented measure of family affluence for the material dimension, and life satisfaction only for the subjective dimension. These accumulating findings suggest that there is an association at the country level and a weaker association at an individual-level.

1.4 The Children's Worlds project

Considering the changes in the concept of children's well-being and the significance of subjective perspectives of children themselves, the Children's Worlds survey is the first global study of childhood from a child's perspective. It began in 2010 with a small unfunded pilot project and has developed, with the Jacobs Foundation's support, to gather the views of more than 200,000 children in over 40 countries, across five continents. The third wave expanded the project and was undertaken between 2016–2019, covering 35 diverse countries such as Namibia, Nepal, and Norway.

Children's Worlds focus is on children's feelings of happiness and sadness, their satisfaction with their life as a whole, and the different aspects of it, their feelings of safety, being cared for, autonomy, and being listened to, and their hopes and expectations for the future. As in previous waves, the survey questionnaires were structured into sections focusing on different aspects of children's lives, such as home, friendships, and school, as well as on life as a whole. The questionnaires covered the following dimensions: Children's characteristics, Economic/material context, Home context, Overall well-being, Self, Family, Friends, School, Neighbourhood, Time use, Country, and Children's rights. Some were core questions that all countries were expected to include (barring an ethical or cultural reason not to) and others were optional.

Three different versions of the questionnaire were composed for different age groups 8, 10 and 12-years-olds. The questionnaires for the two older age groups were very similar, with only a few of the more abstract or complex questions being excluded for the 10-year-olds. The questionnaire for 8-year-olds was shorter and some types of questions were given a different format.

1.5 Objectives of the Analysis

This article seeks to exploit the opportunities presented by the third wave of the Children's Worlds study to explore the association between material well-being and subjective well-being in a large variety of countries using a wide range of indicators of both dimensions. For material wellbeing: (1) Family affluence scale, (2) Deprivation Scale (3) Multi-dimensional Deprivation Scale. For subjective well-being: (1) Overall life satisfaction, (2) the Subjective Well-Being Scale, and (3) two positive and negative affect items.

The specific hypotheses are:

1. There is an association between material well-being and subjective well-being at the country level.
2. There is an association between material well-being and subjective well-being at the individual-level.
3. The association at the individual-level is likely to vary from country to country.

2 Method

2.1 Sample

This article is based on the questionnaires from 10-year-olds on the grounds more countries sampled this age group (N = 35 countries), though we also analysed the 12-year-olds' sample (N = 30 countries).[1] The countries are from diverse contexts, including all five continents, and a mix of both economically developed and developing countries (for the list of countries see Table 1). The key requirements for full inclusion in the study were to use some form of random sampling (usually random stratified cluster sampling) with a sampling frame covering at least 95% of the child population in the age groups surveyed in mainstream schools. Up to 5% exclusions were allowed in each country due to issues such as the difficulties and costs of surveying very small schools in geographically remote areas. Moreover, a target sample size of at least 1,000 children in at least 20 schools in each age group was set. Overall, the 10-year-olds' sample included 49,428 children.

2.2 Measures

2.2.1 Indicators of child material well-being

In the Children's Worlds survey there are a variety of questions asked of children about their feelings regarding their material well-being. These include questions such as: "How often do you worry about the money your family has?" and "How satisfied are you with the money your family has?". We did examine these questions but decided that the responses appeared to reflect not just comparative living standards but different levels of consciousness about the importance of material things in childhood. While this is interesting in itself, it left us unconvinced that they represented a valid indicator of material well-being. We therefore decided to focus on two more objective indicators – a deprivation scale and the Family Affluence Scale.

Deprivation Scale The deprivation scale was originally designed by Main and Pople (2011) for the *Good Childhood* studies in England and has been modified across the waves of Children's Worlds, after consulting researchers and children in the different countries. The child Deprivation Scale is based on an eight-item index with

[1] Please note all tables shown refer to the 10-years-olds sample, unless it is stated differently in the title.

Table 1 Rank of mean scores on the Deprivation Scale

	Mean	N	Std. Deviation
Nepal	4.75	970	1.76
Namibia	5.72	990	2.15
Bangladesh	5.77	861	1.54
Vietnam	5.79	920	1.49
Sri Lanka	5.79	1051	1.59
Israel	6.16	1358	2.86
India	6.22	940	1.46
South Africa	6.28	3145	1.83
Indonesia	6.31	6803	1.46
Algeria	6.56	931	1.65
Malaysia	6.64	980	1.38
Brazil	6.82	843	1.24
Italy	6.99	1037	0.92
Greece	7.03	809	0.96
Spain	7.04	1994	0.93
Taiwan	7.09	1314	1.10
Albania	7.10	1143	1.20
France	7.18	2017	0.88
Chile	7.20	869	1.14
Malta	7.27	602	0.87
Hong Kong	7.30	696	1.03
Switzerland	7.31	1146	0.76
Russia	7.31	953	1.10
Romania	7.37	1192	1.47
England	7.37	695	0.94
Wales	7.47	933	0.94
Poland	7.49	1164	0.86
Croatia	7.57	1197	0.76
Germany	7.62	749	0.76
Finland	7.66	1034	0.80
Estonia	7.72	962	0.67
South Korea	7.73	3150	0.71
Hungary	7.73	1007	0.71
Norway	7.81	788	0.67
Total	6.85	45,243	1.50

responses yes and no, asking whether the child has: Clothes in good condition; Enough money for school trips and activities; Access to the Internet; Equipment/ things for sports and hobbies; Pocket money to spend; Two pairs of shoes in good condition; Mobile phone; Equipment for school.

The measure is calculated as the sum of the number of items the child reports having, that is the scale is between 0 to 8. Exploratory Factor Analysis showed all items

loaded on the same verbal, together explaining 31.9%. The scalability of this index was assessed using Cronbach's Alpha which is 0.67 and it could not be improved by removing any item. Table 1 gives the ranks of the mean scores on this index. They range from 7.8 out of 8 items possessed in Norway to only 4.8 possessed in Nepal. The rank order appears to reflect relative national living standards more closely than the previous scales, though the Cronbach Alpha is slightly below the conventional level of reliable scalability of 0.7. Besides the mean, it is worth looking at the standard deviation which indicates the degree of inequality within countries – Israel and Namibia have the highest deviations in scores and Norway, Estonia, and Switzerland the lowest. For the 12-year-olds the results are similar; Nepal, Namibia and Bangladesh had the lowest mean scores and Norway, South Korea and Hungary the highest scores.

The Family Affluence scale The Family Affluence scale was developed for the HBSC study and over time has undergone several adaptations. The third wave was the first time it has been used in Children's Worlds. In this study we have used the following elements based on FASIII:

Does your family own a car, van or truck? Do you have your own room? How many computers do your family own? How many bathrooms do you have in your home? Does your home have a washing machine? In the last 12 months, how many times did you travel away on holiday[2] with your family? How many of these were outside the country? Answers for most questions were 'no', 'yes', and in some cases also 'two', and 'more than two'. The child score was calculated as an average of the positive answers (having at least one of the items).

Creating this index, we found in the Children's Worlds survey there were, unfortunately, no responses to most of the items for Bangladesh, Chile, Malaysia, Namibia, and Romania. There were further problems with the two-holiday items: Germany used an early version of the questionnaire and did not use the number of holidays; and Greece, Russia, and Vietnam did not ask for the number of holidays outside the country. Therefore, we decided it was best to drop the holiday items. It should also be noted Spain did not ask about washing machines. Exploratory Factor Analysis showed all items loaded on the same variable, together explaining 42.6% of the measure variable (only the item 'Do you sleep in your own room' loading lower—0.301). Cronbach Alpha is 0.621 and could be increased to 0.643 if 'Do you sleep in your own room?' had been dropped. We still calculated FAS based on all five items, to be consistent with the way it is commonly used.

Table 2 gives the rank of the means which range from 8.4 in Norway out of a possible total of 11 to 2.5 in Nepal.

The results for the 12-year-olds were very similar, ranging from 2.84 in Nepal to 8.48 in Norway.

[2] In some versions this is a holiday abroad.

Table 2. Mean scores of the Family Affluence scale

	Mean	N	Std. Deviation
Nepal	2.51	964	1.82
Sri Lanka	3.40	1006	2.26
India	3.41	943	2.32
Vietnam	3.77	283	2.04
Indonesia	4.24	7341	2.28
Algeria	4.69	977	2.02
Albania	5.16	1106	2.02
Russia	5.22	953	1.70
Hong Kong	5.40	701	1.85
Italy	6.56	1056	1.65
Hungary	6.60	1011	1.84
Greece	6.61	804	1.70
South Korea	6.76	3140	1.58
Taiwan	6.79	1324	1.92
Croatia	6.99	1216	1.71
Belgium	7.29	1047	1.62
Finland	7.36	1046	1.47
France	7.42	2082	1.73
Switzerland	7.43	1190	1.66
Poland	7.54	1172	1.66
Wales	7.70	938	1.76
Germany	7.76	740	1.54
Malta	7.79	607	1.57
Israel	7.81	1379	1.85
England	8.00	704	1.67
Norway	8.37	795	1.28
Total	6.00	34,525	2.48

Multi-dimensional Deprivation Scale: As we have already mentioned there are many other questions related to material well-being in the Children's Worlds survey and we, therefore, decided to use some of these to create a multi-dimensional scale with nine domains. The choice of domains was based on the work undertaken by UNICEF in their Multiple Overlapping Deprivation Analysis (MODA) (Chzhen & de Neubourg, 2014). Table 3 presents these domains and the questions used for each domain.

For each item we estimated a mean if it was possible, or a percentage of those who were missing the item/service. Then countries' ranks were constructed for each item for simplicity and partly because not all countries had data for all the domains. The average rank in each item was used to generate an overall rank in the domain, and finally, a summary score for each country was calculated based on the average rank in each domain.

Table 3 Components of Multi-dimensional Deprivation Scale

Domain	Question summary	coding	Indicators	Note
Nutrition	Enough food each day	0 = never 1 = sometimes 2 = often 3 = always	mean	Not asked in Germany
Health	Satisfaction with health	0 = not at all satisfied 10 = totally satisfied	mean	
	How often feel stressed	0 = not at all 10 = extremely	mean	Needs reverse coding
Clothing	Clothes in good condition	0 = no 1 = yes	% no	Not asked in Belgium
	Two pairs of shoes in good condition	0 = no 1 = yes	% no	
Education	Enough money for school trips and activities	0 = no 1 = yes	% no	
	The equipment/things you need for school	0 = no 1 = yes	% no	
Information	Access to the Internet at home	0 = no 1 = yes	% no	
	A mobile phone	0 = no 1 = yes	% no	
Services	Running water	1 = yes 2 = no 3 = not sure	% no/not sure	Only asked in poor countries
	Toilet that flushes	1 = yes 2 = no 3 = not sure	% no/not sure	Only asked in poor countries
	Electricity	1 = all of the time 2 = some of the time 3 = no	% some of the time/no	Only asked in poor countries

Table 3 (continued)

Domain	Question summary	coding	Indicators	Note
Housing	Own room	1 = I sleep in a room on my own 2 = I sleep in a room I share with others	% I sleep in a room I share with others	
	Own bed	1 = Yes, I have my own bed 2 = No, I share a bed 3 = No, I don't have my own bed	% no, I share/no I don't have my own bed	
	Place to study	1 = yes 2 = no 3 = not sure	% no/not sure	

Table 3 (continued)

Domain	Question summary	coding	Indicators	Note
Child labour	Working with family	0 = never 1 = less than once a week 2 = once or twice a week 3 = Three or four days a week 4 = five or six days a week 5 = every day	mean	Needs reverse coding Germany missing
	Doing other work for money or food	0 = never 1 = less than once a week 2 = once or twice a week 3 = Three or four days a week 4 = five or six days a week 5 = every day	mean	Needs reverse coding Not asked in many countries
	Helping around the house	0 = never 1 = less than once a week 2 = once or twice a week 3 = Three or four days a week 4 = five or six days a week 5 = every day	mean	Needs reverse coding Germany different coding
	Caring for sibling and others	0 = never 1 = less than once a week 2 = once or twice a week 3 = Three or four days a week 4 = five or six days a week 5 = every day	mean	Needs reverse coding
Autonomy	Money to spend on yourself	0 = no 1 = yes	% no	

Table 4 Ranks on domains of Multi-dimensional deprivation index

	Nutrition	Health	Clothing	Education	Information	Services	Housing	Child labour	Autonomy	Total	N domains	Mean		Mean
Albania	29	35.5	19.5	12.5	16.5	8.7	10.3	9	28	169	9	18.8	Nepal	4.3
Algeria	15	28	7.5	8	11.5	7.0	6.3	10.25	19	112.6	9	12.5	Namibia	5.4
Bangladesh	9	7.5	9.5	9	2.5	5.7	34.0	16.25	9	102.4	9	11.4	South Africa	6.7
Belgium	22	7.5	5	21	20.5		17.7	21	11	125.7	8	15.7	Sri Lanka	7.7
Brazil	17	19.5	19	12.5	22.5	13.7	13.7	23.3	5	146.2	9.0	16.2	Vietnam	8.1
Chile	16	24.5	21.5	16.5	19.5	12.7	16.3	19.7	18	164.7	9.0	18.3	India	9.1
Croatia	35	34.5	22	35	29		19.0	15	14	203.5	8	25.4	Malaysia	10.9
England	21	19.5	23	22	24		16.7	25.3	20	171.5	8.0	21.4	Indonesia	11.0
Estonia	26	21	28.5	30.5	33.5		21.0	13.5	33	207	8.0	25.9	Bangladesh	11.4
Finland	20	26.5	14.5	22.5	31		24.5		30	169	7.0	24.1	Algeria	12.5
France	27	20	27	24	12.5		21.0	13	25	169.5	8.0	21.2	Israel	12.9
Germany		20	18.5	26.5	31		23.5	34.5	31	185	7.0	26.4	Belgium	15.7
Greece	19	21.5	29	21	10.5		11.0	19	12	143	8.0	17.9	Russia	16.0
Hong Kong	4	6.5	28	21	20		15.5	30.5	13	138.5	8.0	17.3	Brazil	16.2
Hungary		31	34	32.5	28.5	14.0	16.3	18.25	34	208.6	8.0	26.1	Taiwan	16.6
India	14	9	12	5	8.5	7.0	8.0	10.75	8	82.3	9.0	9.1	Hong Kong	17.3
Indonesia	1	13.5	4.5	11	11.5	9.3	8.0	18.5	22	99.3	9.0	11.0	Greece	17.9
Israel	23	12	1.5	5.5	14.5		18.0	18.5	10	103	8.0	12.9	Chile	18.3
Italy	31	27	31	30	16		19.0	28	4	186	8.0	23.3	Albania	18.8
Malaysia	6	5.5	8.5	10	10	3.7	7.5	14.75	32	97.9	9.0	10.9	Spain	19.1
Malta	25	19	24.5	26.5	23		14.0	13.5	27	172.5	8.0	21.6	Romania	20.5
Namibia	2	8.5	2.5	2.5	6.5	2.0	13.7	3.75	7	48.4	9.0	5.4	France	21.2
Nepal	5	7	2.5	1	1.5	7.7	9.3	3	2	39	9.0	4.3	England	21.4
Norway	33	25.5	27	29.5	35		24.5	25	35	234.5	8.0	29.3	Malta	21.6
Poland	28	22	31.5	20	27		23.0	11.25	17	179.75	8.0	22.5	Wales	21.9
Romania	34	33	12	12	21	13.3	18.5	11.25	29	184.1	9.0	20.5	Poland	22.5

Table 4 (continued)

	Nutrition	Health	Clothing	Education	Information	Services	Housing	Child labour	Autonomy	Total	N domains	Mean		Mean
Russia	10	22	16	12	25.5		16.5	5	21	128	8.0	16.0	Italy	23.3
South Africa	3	7.5	4.5	4.5	12.5	4.3	4.0	4	16	60.3	9.0	6.7	Finland	24.1
South Korea	11	8	27	33	28.5		30.0	29.75	36	203.3	8.0	25.4	South Korea	25.4
Spain	30	26	22.5	27.5	19		12.7	12	3	152.7	8.0	19.1	Croatia	25.4
Sri Lanka	7	10	7.5	8	2.5	5.3	15.0	8	6	69.3	9.0	7.7	Estonia	25.9
Switzerland	32	28	33	32	19.5		27.5	22.5	23	217.5	8.0	27.2	Hungary	26.1
Taiwan	13	8.5	19	26	13.5		17.0	21	15	133	8.0	16.6	Germany	26.4
Vietnam	8	4.5	10	10	6.5	5.7	18.0	9.5	1	73.2	9.0	8.1	Switzerland	27.2
Wales	18	22.5	23	21.5	27		18.3	19.25	26	175.6	8.0	21.9	Norway	29.3

The results are summarised in Table 4. Across these nine domains, Nepal comes bottom of the distribution with the lowest average rank of 4.3 and Norway comes top with an average rank of 29.3. This ranking has intuitive validity. The Cronbach Alpha for this scale is very high = 0.846 and would have been improved to 0.879 if the housing domain was left out and the services was removed and 0.854 if autonomy was removed. The results for the 12-year-olds were similar ranging from 4.2 in Namibia to 24.2 in Norway.

The correlation matrix in Table 5 summarises the associations between the domains of the Multi-dimensional Deprivation Index. It is notable that health is not closely related to rankings on child labour, and autonomy is not closely associated with nutrition, services, housing or child labour.

We found a very strong association between all the deprivation indices at the country level. The Family Affluence scale is slightly less strongly associated but it does not include all countries. See Table 6.

We can only compare deprivation and Family Affluence at the micro-level because the Multi-dimensional Deprivation Index is only a country-level variable. The correlation between the deprivation and family affluence scores at the micro-level (34,000 children) was r = 0.413**.

2.2.2 Subjective well-being indicators

We have used four standard measures of subjective well-being used in the Children's Worlds survey, both cognitive and emotional. It has been suggested that it is important to test multiple subjective well-being measures, as these measures tend to show different levels of sensitivity to diverse socio-cultural contexts (Casas & Gonzalez-Carrasco, 2019).

Overall life satisfaction (OLS): This is a single question 'How satisfied with your life as a whole?' with responses ranging from 0 = totally dissatisfied to 10 = completely satisfied. Scores were multiplied by 10. The scale was transformed to a 0–100 scale. Table 14 (in the Appendix) is the countries' mean ranking and shows that scores range from 97.9 in Albania to 82.1 in Nepal.

The Subjective well-being scale (SWBS): This scale is a reduced version of the Huebner (1991) Student Life Satisfaction scale. It is based on five statements about children's overall life satisfaction scale and children are asked to indicate how far they agree with each statement: I enjoy my life; My life is going well; I have a good life; The things that happen in my life are excellent; I am happy with my life. The Cronbach's Alpha for this scale was 0.899 and could not be improved by dropping any item.

In the Children's Worlds survey, children aged 10 were asked to respond using an 11-point scale ranging from 'do not at all agree' to 'totally agree'. The set of five questions were found to form a good indicator of a single underlying factor

Table 5 Correlation matrix of Multi-dimensional Deprivation Index

	Nutrition	Health	Clothing	Education	Information	services	Housing	Child labour	autonomy	mean
Nutrition	1.000									
Health	0.755**	1.000								
Clothing	0.566**	0.464**	1.000							
Education	0.646**	0.472**	0.800**	1.000						
Information	0.568**	0.493**	0.550**	0.727**	1.000					
Services	0.623*	0.692**	0.650**	0.723**	0.690**	1.000				
Housing	0.490**	0.210	0.423*	0.570**	0.530**	0.306	1.000			
Child labour	0.255	0.055	0.466**	0.617**	0.486**	0.608*	0.462**	1.000		
Autonomy	0.264	0.349*	0.360*	0.470**	0.635**	0.286	0.308	0.253	1.000	
Mean	0.773**	0.639**	0.795**	0.903**	0.841**	0.751**	0.667**	0.578**	0.624**	1.000

*$p < 0.05$. **$p < 0.01$.

Table 6 Correlation of material well-being measures, macro-level

	Deprivation Scale	Family Affluence Scale	Multiple Deprivation Index
Deprivation Scale	1		
Family Affluence Scale	0.792**	1	
Multiple Deprivation Index	0.917**	0.828**	1

*$p < 0.05$. **$p < 0.01$.

– termed subjective well-being scale (SWBS).[3] Multi group Confirmatory Factor Analysis showed the scale is comparable cross-nationally[4] (Casas, 2020). The scale was built by summing all the items and transforming the scale from 0–100. Table 15 (in the Appendix) presents the rank order of the countries. Albania and Romania have children with the highest SWBS and Vietnam and Hong Kong the lowest.

Both the OLS and SWBS are indicators representing the cognitive dimensions of subjective well-being, but we also used indicators of the emotional dimensions. Multi group Confirmatory Factor Analysis showed Core Affect scale was not comparable cross-nationally (Casas, 2020) accordingly we choose to use only the one item version.

Positive Affect – Feeling Happy: This is a single item scale (derived from Feldman Barrett and Russell, 1998 measure of Core Affect). Children were asked how often in the last two weeks they had felt happy. This scored from 0 to 10 and was multiplied by 10. Table 16 (in the Appendix) summarises the mean scores. There are now some changes in the ranking order of the countries. 10-year olds in Hong Kong have the lowest positive affect and there are some reranking of other countries.

Negative Affect – Feeling Sad: This is a single item scale of negative affect. (Derived from Feldman Barrent & Russel, 1998 measure of Core Affect). Children were asked how often in the last two weeks they had felt sad. Each item was scored from 0 to 10 and scores were multiplied by 10. Table 17 (in the Appendix) summarises the mean scores. Malaysia had the highest mean sadness score.

[3] This was tested using two methods: firstly the structure of the measure was examined using exploratory factor analysis: all variables were found to load onto a single factor; secondly we tested the reliability of the scale using Cronbach's Alpha: together, the scale had a score of 0.95, with one variable – I have what I want in my life – not making a substantial contribution, but neither would its removal enhance the scale substantially (Cronbach's Alpha without = 0.96, a real difference of 0.001 when rounding is taken into account).

[4] It should be noted the item 'Things Life Excellent' – was found to have somewhat diverse answering styles in different countries (Casas, 2020).

Table 7 Correlation matrix of subjective well-being measures, macro-level

	OLS	SWBS	Feeling Happy	Feeling Sad
OLS	1			
SWBS	0.742**	1		
Feeling Happy	0.682**	0.797**	1	
Feeling Sad	-0.633**	-0.664**	-0.552**	1

*$p < 0.05$. **$p < 0.01$

Table 8 Correlation matrix of subjective well-being measures, micro-level

	OLS	SWBS	Feeling happy	Feeling Sad
OLS	1			
SWBS	0.596**	1		
Feeling happy	0.468**	0.558**	1	
Feeling Sad	-0.146**	-0.207**	-0.187**	1

*$p < 0.05$. **$p < 0.01$

As shown in the correlation matrix of the subjective well-being measures in Table 7 at the macro-level (35 countries) all the subjective well-being measures are quite closely associated.

The results are very similar at the micro individual-level though the correlation with the negative affect is lower but significant. See Table 8.

2.3 Data Analysis

The associations between material well-being and subjective well-being were explored at two levels. First, at the country level where with 35 countries we explored the association between the average national scores of one indicator with the national average scores on another indicator to observe whether they were related. This can be called a macro comparison.

Second, at the individual-level, the score for each of 35,000 to 45,000 children on one indicator was compared with the scores of the same child on another indicator to observe whether they were related. This can be called a micro comparison. Micro comparison can be done for the whole sample or for the sample of each country. Data was analysed using SPSS 23 program.

Missing values for the main measures ranged between 2.4% and 6.8%, and thus they were dealt by list wise deletion for simplicity. A weighting variable was used based on three criteria: accounting for selection probability; ensuring the sample represented the population within each country (for age and gender); and ensuring each country had an equal weight in comparative analysis (i.e., each country was represented as having 1000 cases).

Table 9 Correlation matrix of material well-being and subjective well-being indicators, macro-level

	OLS	SWBS	Feeling happy	Feeling Sad
Multi-dimensional Deprivation Index	0.537**	0.281	0.098	-0.551**
Deprivation Scale	0.593**	0.284	0.140	-0.455**
Family Affluence Scale	0.484*	0.171	-0.046	-0.331

*$p < 0.05$. **$p < 0.01$

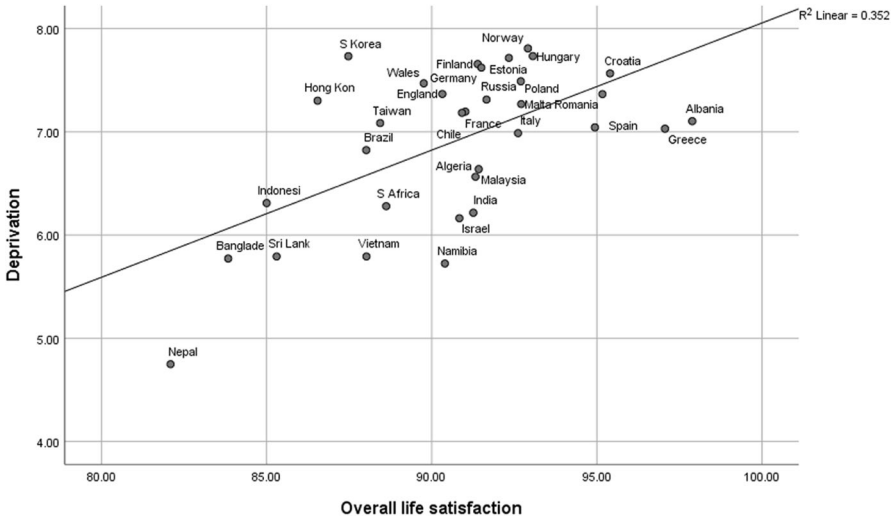

Fig. 1 Scatterplot of Deprivation Scale and Overall life satisfaction

As subjective well-being measures were not normally distributed but positively skewed, as is typically common for these measurements (Casas, 2011), a bootstrapping procedure was implemented using SPSS 23 (with 5,000 re-sampling). This procedure reduces the impact of anomalies and outliers. However, as it is not possible to use a weighting procedure while performing bootstrapping in SPSS, and as we saw that the bootstrapping procedure made only very minor change in results, we show weighted results here.

3 Results

At the macro-country-level the relationship between subjective well-being and Deprivation Scale for the ten-year-olds (see Table 9) is strongest between the Deprivation Scale and OLS. The association is shown in the scatterplot in Fig. 1.

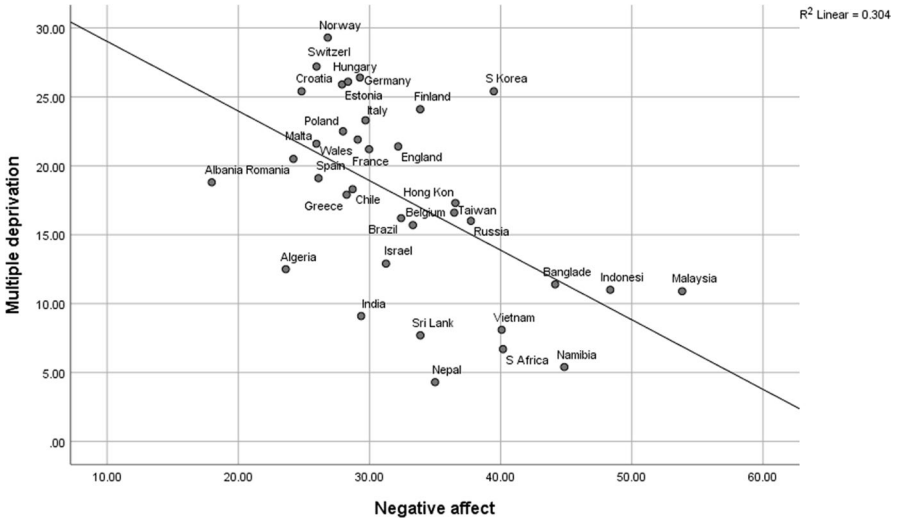

Fig. 2 Scatterplot of Multi-dimensional Deprivation Index and feeling sad

Table 10 Correlation matrix of material well-being and subjective well-being indicators, micro-**relevel**

	OLS	SWBS	Feeling Happy	Feeling Sad
Deprivation scale	0.182**	0.173**	0.138**	-0.124**
Family Affluence Scale	0.109**	0.046**	0.041**	-0.107**

*$p < 0.05$. **$p < 0.01$

Table 11 Correlation matrix of material well-being and subjective well-being indicators, macro-level for 12-year-olds

	OLS	SWBS	Feeling happy	Feeling Sad
Deprivation scale	0.216	-0.062	0.038	-0.265
Family Affluence scale	0.179	-0.002	-0.071	-0.339
Multidimensional deprivation index	0.324	0.155	0.149	-0.438*

*$p < 0.05$. **$p < 0.01$

South Korea and Nepal are interesting outliers. There are also statistically significant correlations between the Multi-dimensional Deprivation Index and feeling sad (shown also in Fig. 2). The Multi-dimensional Deprivation Index and Deprivation Scale were not found to be associated with SWBS and feeling happy. The Family Affluence Scale is only significantly associated with OLS and not with any of the other measures.

Table 12 Correlation matrix of material well-being and subjective well-being indicators, micro-level for 12-year-olds

	OLS	SWBS	Feeling Happy	Feeling Sad
Deprivation scale	0.186**	0.145**	0.151**	-0.124**
Family Affluence scale	0.056**	-0.003	-0.003	-0.120**

*$p < 0.05$. **$p < 0.01$

The analysis is repeated at the micro-level in Table 10. All the correlations are significant but quite weak. The strongest association is between the Deprivation Scale and overall life satisfaction.

The correlations between material and subjective well-being indicators are repeated for the 12-year-olds in Tables 11 and 12. The macro correlations in Table 11 for the 12-year-olds are much lower than with the 10-year-olds and only the correlation between Multidimensional deprivation and feeling sad is significant. The Micro correlations for the 12-year-olds are similar to those for the 10-year-olds – low but significant.

Finally, we explored variations in the micro-level correlations between material well-being and subjective well-being within countries in Table 13. The correlation coefficients are stronger and mainly statistically significant between the Deprivation Scale and the subjective well-being measures. The strongest associations are between SWBS and Deprivation Scale in most, but not all, countries. The associations between the Family Affluence scale and subjective well-being are in most countries very low and not often significant.

3.1 Discussion and Conclusions

The study findings show there is a significant association between the Deprivation Scale and the Multi-dimensional Deprivation Index with some subjective well-being measures at the macro- country-level. The findings that the Multi-dimensional Deprivation Index explains about 30% of the variation in feeling sad and that the Deprivation Scale explains 35% of the variation in overall life satisfaction between countries, indicates that if countries reduced child deprivation, they may expect some improvement in the subjective well-being of their children. These findings support the limited literature regarding the association between children's material well-being and SWB at the macro-country-level. Interestingly, though our sample included diverse countries, our finding supports the findings of Bradshaw et al., (2013) that have shown material well-being was important for children's overall life satisfaction among rich countries.

However, this association was not established for all SWB measures. While OLS and feeling sad were found to be significantly associated to the Multi-dimensional Deprivation Index and Deprivation Scale, SWBS and Positive

Table 13 The correlations between Material well-being and Subjective well-being, macro-level

	Deprivation Scale				**Family Affluence Scale (FAS)**				
	OLS	SWBS	Feeling Happy	Feeling Sad		OLS	SWBS	Feeling Happy	Feeling Sad
Albania	0.234**	0.309**	0.205**	-0.163**	Albania	0.119**	0.123**	0.096**	-0.050*
Bangladesh	0.203**	0.202**	0.170**	-0.114**	Bangladesh				
Belgium					Belgium	0.053*	0.063**	0.051*	-0.054*
Brazil	0.195**	0.260**	0.257**	-0.145**	Brazil				
Switzerland		0.092**	0.103**	-0.053	Switzerland		0.068*	-0.004	-0.008
Chile	0.299**	0.313**	0.300**	-0.209**	Chile				
Germany	0.302**	0.310**	0.240**	-0.116**	Germany	0.068**	0.050*	0.064**	-0.034
Algeria	0.305**	0.315**	0.323**	-0.177**	Algeria	0.086**	0.056*	0.094**	-0.105**
Estonia	0.217**	0.242**	0.208**	-0.133**	Estonia				
England	0.168**	0.237**	0.145**	-0.018	England	0.054	0.050	0.012	-0.011
Spain	0.132**	0.148**	0.132**	-0.053**	Spain	0.196**	0.211**	0.149**	-0.110**
Finland	0.325**	0.294**	0.276**	-0.094**	Finland	0.074**	0.087**	0.065**	-0.026
France	0.194**	0.176**	0.193**	-0.084**	France	0.024	0.026	-0.012	-0.013
Greece	0.154**	0.193**	0.189**	-0.080*	Greece	0.010	0.024	-0.009	-0.038
Hong Kong	0.199**	0.148**	0.164**	-0.055*	Hong Kong	0.092**	0.104**	0.089**	-0.068**
Croatia	0.182**	0.210**	0.197**	-0.132**	Croatia	0.000	0.024	0.009	0.013
Hungary	0.146**	0.186**	0.120**	-0.094**	Hungary	0.031	0.041	0.018	-0.117**
Indonesia	0.173**	0.162**	0.173**	-0.083**	Indonesia	0.032**	-0.007	0.053**	-0.044**
Israel	0.102**	0.105**	0.040*	0.012	Israel	0.121**	0.078**	0.069**	0.027
India	0.117**	0.102**	0.115**	-0.076**	India	0.054*	0.044	0.012	-0.077**
Italy	0.182**	0.214**	0.180**	-0.147**	Italy	0.083**	0.120**	0.078**	-0.055*
South Korea	0.144**	0.143**	0.119**	-0.044**	South Korea	0.075**	0.055*	0.031	-0.049*
Sri Lanka	0.148**	0.229**	0.179**	-0.114**	Sri Lanka	0.044**	0.049**	0.043**	-0.013
Malta	0.185**	0.171**	0.168**	-0.107**	Malta	0.068*	-0.007	-0.014	-0.002

Table 13 (continued)

	Deprivation Scale				Family Affluence Scale (FAS)				
	OLS	SWBS	Feeling Happy	Feeling Sad		OLS	SWBS	Feeling Happy	Feeling Sad
Malaysia	0.130**	0.191**	0.146**	-0.071*	Malaysia				
Namibia	0.230**	0.236**	0.233**	-0.088**	Namibia				
Norway	0.128**	0.095**	0.109**	-0.037	Norway	0.018	0.052*	-0.009	-0.059*
Nepal	0.116**	0.123**	0.127**	-0.058*	Nepal	-0.001	0.072**	0.077**	-0.039
Poland	0.204**	0.218**	0.161**	-0.120**	Poland	0.066**	0.061**	0.024	-0.017
Romania	0.228**	0.275**	0.198**	-0.154**	Romania				
Russia	0.222**	0.269**	0.214**	-0.155**	Russia	0.045	0.047*	0.057*	-0.056*
Taiwan	0.173**	0.168**	0.146**	-0.033	Taiwan	0.080**	0.065**	0.049**	-0.008
Vietnam	0.184**	0.256**	0.173**	-0.032	Vietnam	-0.055	0.269**	-0.082	0.051
Wales	0.325**	0.325**	0.290**	-0.152**	Wales	0.074**	0.098**	0.051*	-0.064**
South Africa	0.182**	0.241**	0.179**	-0.101**	South Africa				

*$p < 0.05$. **$p < 0.01$

Affect—feeling happy were not significantly associated with any of the material well-being measures at the country level. Neither did we find an association of these for the 12-year-olds. This may be because fewer countries completed the survey for 12-year-olds or related to the known general decrease in children's subjective well-being with age (Casas & González-Carrasco, 2019). This adheres with a former study in the Children World's second wave which did not find a significant association at the macro-level using the personal well-being measure (Main et al., 2019). Thus, it seems at the macro-level, still more research is needed to further understand the connection between material well-being and subjective well-being. Generally, it should be noted the different results we find using different subjective well-being scales suggest that it is important to use multiple measures of subjective well-being. This seems especially critical when using an international sample with such a diverse range of countries, as some of the scales show different sensitivity to sociocultural contexts (Casas & Gonzalez-Carrasco, 2019).

Within countries, at the individual-level, the picture is more consistent and significant across all material well-being measures with all subjective well-being measures, though associations are fairly weak. The results at the micro-level are also similar for the 12-year-olds. These findings support the known association at the individual-level (Kern et al., 2020; Levin et al., 2010; Main et al., 2019).

At both levels, macro and micro, the Family Affluence Scale is much lower or not significantly associated with most of the subjective well-being measures, possibly suggesting it does not reflect usefully material well-being in the context of children. This is an important issue for consideration as the Family Affluence Scale is quite extensively used in international surveys informing social policy. It seems the material Deprivation Scale and the Multi-dimensional Deprivation Index are more informative and relevant for children's subjective well-being, supporting the claim that the child-derived method is more effective in predicting children's SWB compared to the parent-derived approach (Bradshaw et al., 2017; Lau & Bradshaw, 2018; Rees & Bradshaw 2018). The Multi-dimensional Deprivation Index might also have benefits in providing a more complex understanding of stronger and more sensitive dimensions in specific countries. For example, we can find Malaysia to be ranked low in most dimensions except for Autonomy where it is ranked high, while we can find Brazil to be middle ranked across most dimensions but ranked very low in the Autonomy dimension. However, while some have found the multi-dimensional scales to be more strongly related to SWB (Crous & Bradshaw, 2017; Gross-Manos, 2015), in our study we find the multi-dimensional Deprivation Scale and the simpler Deprivation Scale show similar results in their association to SWB. These findings point to which measures might be more reliable for the use of social policymakers who are interested in an international comparison of material well-being as an indicator of child poverty.

In terms of international comparison, there is no clear trend to the variations in the correlations between countries. We can generally find, perhaps not surprisingly, that developing countries have higher deprivation and also report low subjective well-being. But other than that, there is no pattern between richer and poorer countries, nor between countries from different regions, dominant religions, nor government ideologies. We find South Korea is a unique outlier reporting low subjective well-being despite very high material well-being. We can identify some countries which show lower associations between deprivation and SWB, such as Switzerland, India, and Israel. However, eventually, it seems the reason for the international variation can only be explained by understanding local national patterns. For example, in Israel children living in the rural-periphery of Israel were found to be poorer but happier than their urban comparators (Gross-Manos & Shimoni, 2020), and that might explain low association.

The analysis has a few limitations that need to be acknowledged. First, this has been a bivariate association analysis focused on material well-being measures, which did not include control variables. Further studies are needed to expand more deeply the analysis. Second, while one of the great benefits of the Children's Worlds sample is that it covers diverse countries, this also brings challenges both in terms of the material well-being measures and in terms of the SWB. The list of items, which children are being asked whether they have or not, might be more relevant in some countries' contexts, while less so in others. It is also not possible to know for sure in such deprivation scale, whether the child's negative answer necessarily reflects an inability to afford the item, or perhaps a specific preference. Moreover, the comparability of means between the countries for many of the subjective well-being measures was found to be limited (Casas, 2020). However, we do maintain it is important to still try to understand these associations with the most suitable measures, as we have attempted to do in this investigation.

In conclusion, this analysis has been one of the first to explore the findings of the third wave of the Children's Worlds study, including a diverse sample of countries coming from different continents and cultures. It involved a comparison of the bivariate association between two classes of variables – material and subjective well-being, using several different measures for each. While our findings do indicate which child material well-being measure might be more informative in the context of the child's well-being, there is no clear international pattern in terms of the correlation with subjective well-being. It seems understanding the association between these two variables should be further untangled by analyzing data at the local level in a multi-variate framework. The current analysis using various measures for both dependent and independent variables can perhaps inform such an attempt.

Appendix

Table 14 Ranked order of mean Overall Life Satisfaction (OLS)

	Mean	N	Std. Deviation
Albania	97.9	1169	8.8
Greece	97.1	817	9.0
Croatia	95.4	1226	13.0
Romania	95.2	1217	13.0
Spain	94.9	2042	13.1
Hungary	93.1	1016	14.9
Norway	92.9	759	15.3
Malta	92.7	598	17.9
Poland	92.7	1164	16.7
Italy	92.6	1060	16.0
Estonia	92.3	998	16.7
Russia	91.7	953	16.6
Germany	91.5	792	15.3
Malaysia	91.4	992	18.3
Finland	91.4	1050	18.4
Algeria	91.3	1110	19.6
India	91.3	946	19.7
Chile	91.0	894	19.2
France	90.9	2129	16.8
Israel	90.8	1555	21.7
Namibia	90.4	1052	21.2
England	90.3	655	20.2
Wales	89.8	911	22.3
Belgium	89.7	1029	17.0
South Africa	88.6	3350	23.7
Taiwan	88.4	1326	19.6
Vietnam	88.0	941	19.2
Brazil	88.0	878	23.5
South Korea	87.5	3144	18.8
Hong Kong	86.5	703	18.5
Sri Lanka	85.3	1137	26.2
Indonesia	85.0	7556	21.9
Bangladesh	83.8	933	22.0
Nepal	82.1	999	23.7
Total	89.8	47,101	19.6

Table 15 Subjective Well-Being (SWBS)

	Mean	N	Std. Deviation
Albania	96.9	1161	7.4
Romania	95.0	1206	11.4
Greece	93.9	815	11.9
Spain	92.3	1191	13.6
Croatia	92.2	2057	12.1
Malta	91.8	612	15.4
Hungary	91.2	987	14.3
Algeria	91.0	1121	17.1
Sri Lanka	90.7	1074	16.8
India	90.5	945	15.1
Norway	90.4	781	16.2
Switzerland	89.7	1185	14.8
Chile	89.7	873	17.7
Italy	88.8	1064	16.0
South Africa	88.6	3246	17.4
Brazil	88.3	941	20.0
Poland	88.1	1153	18.4
Finland	88.1	1052	17.8
Wales	87.9	699	19.5
Israel	87.8	1585	20.7
Namibia	87.8	819	18.6
England	87.4	1042	18.1
Germany	87.4	953	19.6
Russia	87.3	786	17.9
Estonia	86.9	977	19.1
Bangladesh	86.7	7486	17.2
France	86.6	892	15.8
Indonesia	86.5	2093	18.7
Belgium	86.3	1052	18.3
Malaysia	85.1	983	18.3
South Korea	84.1	3156	19.4
Taiwan	83.7	1312	21.0
Nepal	82.2	975	19.3
Vietnam	82.1	895	20.4
Hong Kong	81.4	702	20.6
Total	88.1	47,871	17.6

Table 16 Positive Affect – Feeling Happy

	Mean	N	Std. Deviation
Albania	98.0	1170	8.8
Greece	94.2	822	12.7
Croatia	93.5	1217	13.8
Malta	92.7	607	15.6
Romania	92.0	1220	15.7
Spain	91.9	2024	14.5
India	91.7	946	17.2
South Africa	91.4	3329	21.2
Algeria	90.9	1104	20.1
Italy	90.5	1059	15.6
Brazil	90.1	865	20.4
Malaysia	90.1	990	18.4
Sri Lanka	89.4	1142	22.3
Poland	89.2	1159	18.8
Hungary	89.1	1011	17.3
Estonia	88.5	1000	19.2
Switzerland	87.7	1182	16.2
Wales	87.7	916	20.5
France	87.6	2130	18.6
England	87.4	659	19.2
Belgium	87.3	1042	18.5
Chile	87.0	888	20.9
Israel	86.6	1528	24.3
Nepal	86.1	998	21.4
Russia	86.0	953	21.5
South Korea	85.8	3160	19.5
Finland	85.6	1051	18.3
Indonesia	85.3	7562	23.2
Norway	85.1	775	17.0
Germany	85.0	802	19.5
Namibia	84.7	1060	27.2
Vietnam	84.3	938	22.1
Taiwan	83.1	1329	23.5
Bangladesh	82.1	942	24.0
Hong Kong	81.8	707	23.4
Total	88.0	48,287	20.3

Table 17 Negative Affect – Feeling Sad

	Mean	N	Std. Deviation
Albania	18.0	1162	32.2
Algeria	23.6	1041	33.1
Romania	24.2	1185	29.3
Croatia	24.8	1194	28.1
Malta	26.0	603	30.8
Switzerland	26.0	1169	27.4
Spain	26.1	2006	29.0
Norway	26.8	763	24.5
Estonia	27.9	986	28.5
Poland	28.0	1148	30.3
Greece	28.3	817	28.5
Hungary	28.4	997	29.4
Chile	28.7	879	30.2
Wales	29.1	888	29.5
Germany	29.3	785	27.8
India	29.4	946	31.8
Italy	29.7	1053	29.9
France	30.0	2088	30.4
Israel	31.3	1500	33.6
England	32.2	644	30.8
Brazil	32.4	845	33.1
Belgium	33.3	1021	29.5
Finland	33.9	1042	30.1
Sri Lanka	33.9	1132	37.2
Nepal	35.0	992	34.5
Taiwan	36.5	1321	33.0
Hong Kong	36.5	704	32.4
Russia	37.7	952	31.4
South Korea	39.5	3158	29.2
Vietnam	40.1	925	33.5
South Africa	40.2	3259	39.3
Bangladesh	44.2	905	34.9
Namibia	44.9	1051	38.4
Indonesia	48.4	7549	37.2
Malaysia	53.8	991	34.2
Total	35.1	47,701	33.9

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Code Availability Codes are available in SPSS.

Data and Materials Availability Data is available in SPSS.

Declarations

Ethics Approval Each participating country research team obtained needed ethical approval from the relevant academic institute, and the Ministry of Education if necessary.

Consent to Participate and for Application Parents and children were asked for consent in a procedure explained in the method section (consent letters are available in Hebrew).

Conflicts of Interest None.

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