WELLCHI WORKING PAPER SERIES

[*WP No. 2/2007*]

Beyond Child Poverty

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April, 2007

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Abstract

Child well-being at national level and international level (in the EU, OECD, UNICEF) has mainly been observed using poverty rates based on relative income measures. There are problems with the reliability and validity of such measures. The EU, OECD and UNICEF have begun to recognise this and we have contributed by developing multi dimensional indices of child well-being for the EU, OECD and CEE/CIS countries based on existing survey and administrative data.

This paper will review what the lessons of that work are. In particular it will explore 1. The relationship between relative child poverty and other domains of well-being. 2. Whether there is another single indicator which might represent international variations in child well-being better than child poverty. 3. Whether there is a simple limited set of indicators that could represent child well-being and make it easier to compare countries and monitor change in child well-being over time.

Keywords: child well-being index, child poverty, inequality, deprivation, risk and safety

Readers citing this document are asked to use the following form of words:
Bradshaw, J. (2007). 'Beyond Child Poverty'. Wellchi Working Paper Series No. 2/2007. Barcelona: Children's Well-being International Documentation Centre.

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Beyond Child Poverty

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This paper was presented as Keynote Speech at the Conference 'How can the well-being of children's society be ameliorated? Convergence and divergence patterns from a European perspective"; Final Conference of the EU project on 'The well-being of children: the impact of changing family forms, working conditions of parents, social policy and legislative measures" financed under the 6th Framework Programme, Barcelona, 8th-10th February 2007

Background

At the Second Wellchi conference in Hamburg, I presented a paper that was critical of the EU, because the so called Laeken primary and secondary indicators of social inclusion only contain two indicators that relate to children. This was despite the fact the children in poverty had been named by the European Union as target groups in the Common Outlines and Common Objectives of the National Action Plans for Social Inclusion, and also in the March 2005 EU Presidency Conclusions. Also despite the fact that Professor Tony Atkinson and colleagues prepared a report for the Luxembourg Presidency (Marlier et al 2007), which included a proposal that children should be 'mainstreamed'.

As a response to the cautious approach to indicator development of the Indicators Sub Committee of the EU Social Protection Committee, we have made a first attempt at an index of child well-being for the EU 25 (Bradshaw, Hoelscher and Richardson 2007), drawing on existing survey and administrative data.

The EU has now become much more actively involved in exploring indicators of child well-being. The Social Protection Group Indicators Sub-committee has established a task-force on child well-being and child poverty, which is due to report in October 2007. The EU group of experts on the National Action Plans for Social Inclusion are to focus on child poverty and well-being in their programme of work for 2007, and child poverty is to be the special focus of the Portugal Presidency of the European Union.

The purpose of this paper is to explore what indicators might be introduced to take our understanding of child well-being in the EU beyond child poverty.

Index of child well-being

We have now produced three separate indices of child well-being. The first was for the EU25 (Bradshaw, Hoelscher and Richardson 2007). Then we produced an index for the OECD countries, which is to be published on 14 February 2007 as UNICEF *Innocenti Report Card 7*. Then we were commissioned by UNICEF Geneva to produce something similar for the CEE/CIS countries, and the results of that are being presented by Richardson and Hoelscher in a paper at this conference. This paper will be based on the results of the EU25 index.

Our index of child well-being is based on a multidimensional understanding of well-being, informed by a view of children's rights as outlined in the UN Convention on the Rights of the Child, and draws on national and international experiences of indicator development. Where possible the unit of analysis is the child and the data is about children, if not provided by children. There are 51 variables, used to make 23 domains, which are organised into 8 clusters:

Material situation.
Housing.
Health.
Subjective well-being.
Education.
Children's relationships.
Civic participation.
Risk and safety.

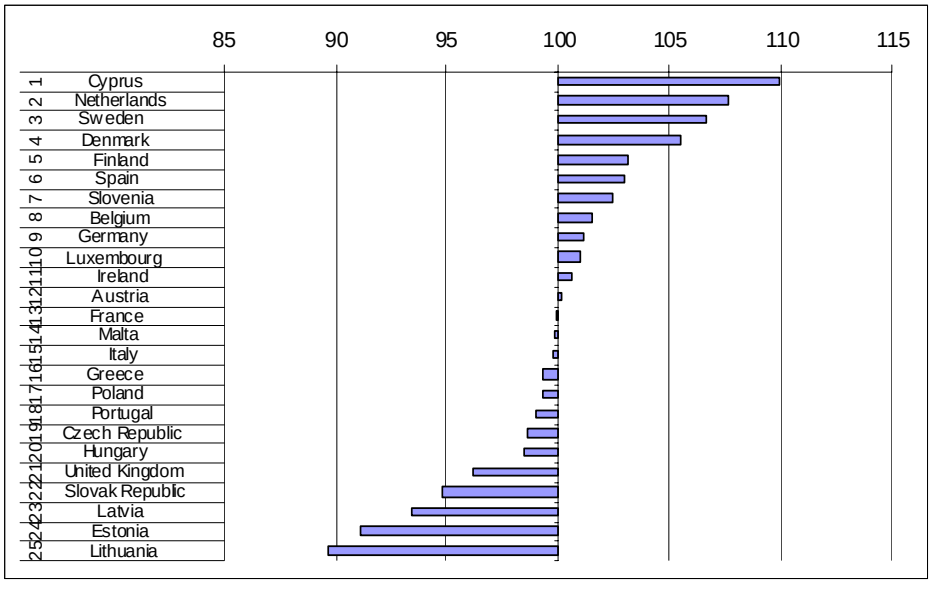
The index is inevitably constrained by the data that is available on a comparable basis. There were two main sources of data - surveys and series. The **surveys** used included the WHO Health Behaviour of School Aged Children (HBSC) at 2001; the OECD PISA Survey at 2000 and 2003; the CIVED 1999 and EUYOUPART 2005 surveys; and the EU Quality of Life Survey (EQLS) 2003. The **series** included the WHO Mortality Data Base, World Bank World Development Indicators, OECD *Education at a Glance*, Eurostat Population and Social Conditions, the Labour Force Survey and the World Bank Health, Nutrition and Population data.

In developing indices the best is always the enemy of the good. However we should recognise some weaknesses in our index

- Some of the data is old;
- Not all indicators are available for all countries;
- The surveys tends to include only older children (PISA 15 year olds); HBSC 11, 13 and 15 year olds) – younger children are underrepresented;
- Minorities, including particularly vulnerable children, are not highlighted.

We have produced an overall index of child well-being in the EU by averaging the z scores for the 23 domains. The results are shown in Figure 1. Cyprus, the Netherlands, Sweden and Denmark are at the top of the league table of child well-being. The Slovak Republic, Latvia, Estonia and Lithuania are at the bottom of the league table of child well-being. For four of these countries Cyprus, Malta, Luxembourg and the Slovak Republic more than 25 per cent of the indicators making up the index are missing, so it is probably safer to ignore them.

Figure 1: Index of child well-being in the EU25. Distribution of average domain z scores around a mean of 100



Source: Bradshaw et al 2007

Figure 2 presents a summary of each country's performance on each of the domains. It can be seen that there is no country that comes in the top or the bottom thirds of the distribution on all the clusters.

Figure 2: Summary of child well-being by cluster

Country	AVERAGE RANK	HEALTH	SUBJECTIVE WELL-BEING	CHILDRENS RELATION-SHIPS	MATERIAL	RISK AND SAFETY	EDUCATION	CIVIC PARTICIPATION	HOUSING
Cyprus	4.6	5			1	2		1	14
Netherlands	5.1	2	1	5	10	5	6		7
Sweden	5.8	1	6	15	2	3	2	14	3
Denmark	6.5	3	9	10	6	15	3	4	2
Spain	8.9	13	3	9	8	1	15		13
Finland	9.8	7	12	17	3	7	4	18	10
Germany	10.0	10	7	12	12	12	9	10	8
Slovenia	10.4	15	8	3	4	18		13	12
Belgium	10.8	20	15	6	18	16	1	5	5
Ireland	12.4	19	5	8	19	20	7		9
Greece	12.5	25	4	11	17	8	16	2	17
Italy	12.5	16	11	4	15	6	19	11	18
Austria	12.6	21	2	16	7	19	17		6
Luxembourg	12.6	11	20	19	5	9	20		4
Hungary	12.9	22	10	7	14	14	12	3	21
Poland	12.9	6	19	13	23	11	5	6	20
France	13.0	14	13	14	11	10	14		15
Portugal	13.0	9	16	2	13	17	18	7	22
Malta	13.5	24	17	1	24	4			11
Czech Repu	14.1	4	14	22	9	21	10	17	16
United Kingd	16.0	23	18	23	20	22	13	8	1
Slovak Repu	16.6	17	22		25	13	11	9	19
Latvia	17.5	18	21	18	16	23	8	12	24
Estonia	19.9	12	23	21	21	24		15	23
Lithuania	20.0	8	24	20	22	25		16	25

The EU indicators

The latest results for two child indicators currently in use: the proportion of children in households with equivalent income less than 60 per cent of the median; and the proportion of children living in workless households are presented in Figures 3 and 4.

Figure 3: Child poverty rate (<60% median) 2003/4 (Eurostat 2007)

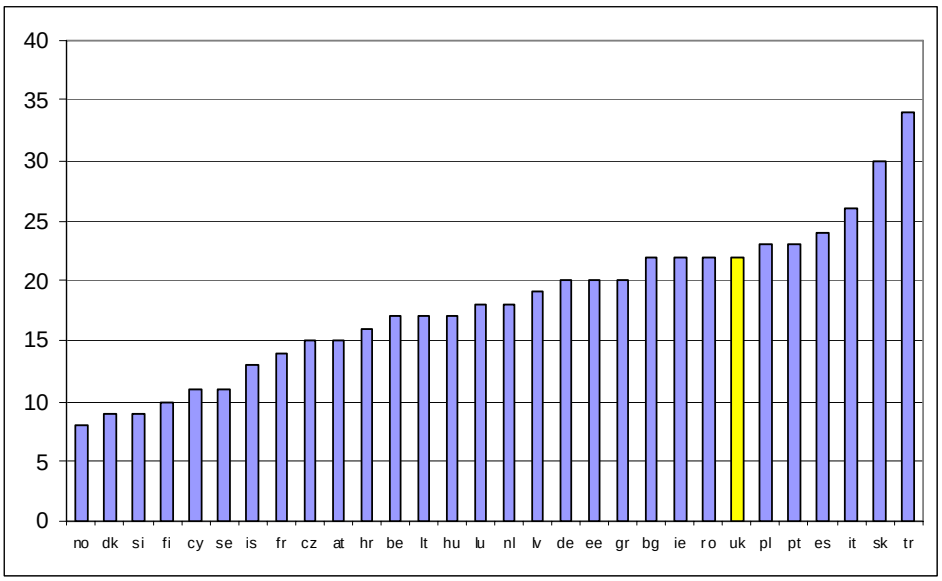
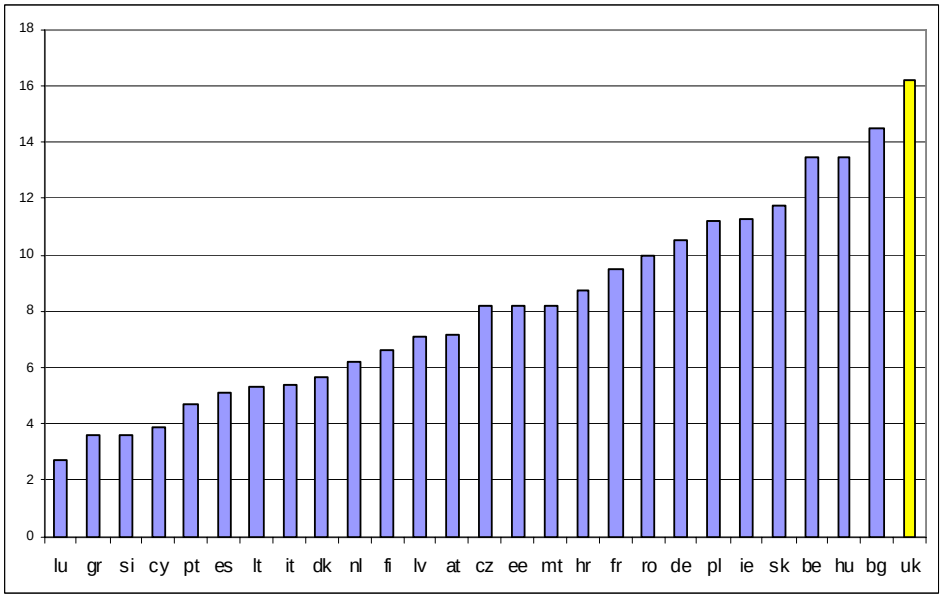
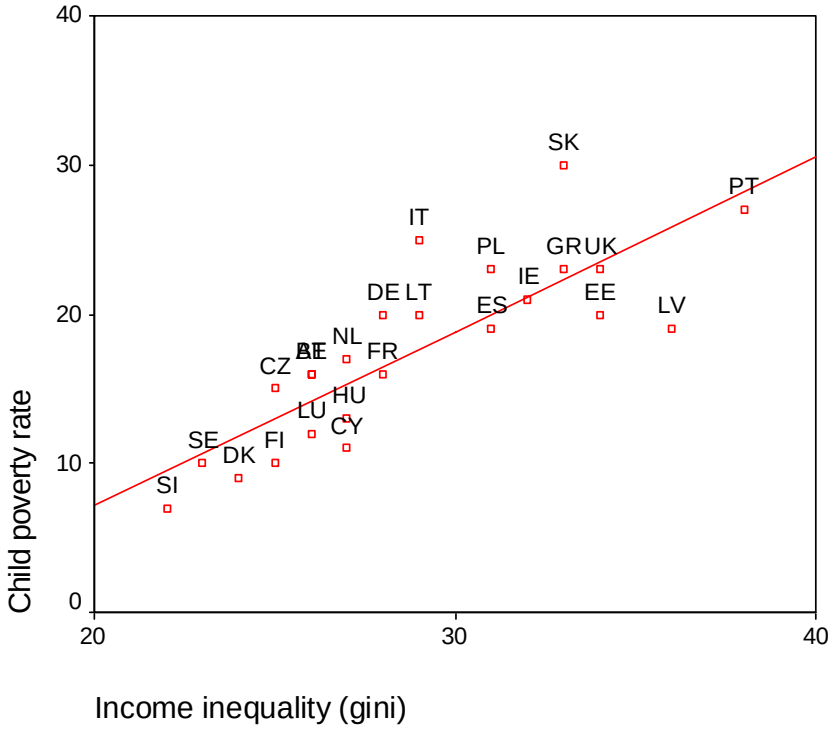


Figure 4: % children 0-17 living in workless households 2006. (Eurostat 2007)



My Hamburg paper criticised these for being too narrowly economistic. The relative child poverty rate has (inevitably) a very close association with inequality (see Figure 5), and among the other objections to it, the threshold is arbitrary and the equivalence scale has no basis in science (Bradshaw 2007).

Figure 5: Child poverty and income inequality r=0.82



Furthermore the relative child poverty rate only has a fairly weak correlation with overall child well-being as measured by our index (r=-0.55** see Figure 6), and the percentage of children in workless families has an even weaker correlation which is not statistically significant (r=0.36ns see Figure 7).

Figure 6: Child well-being by child poverty

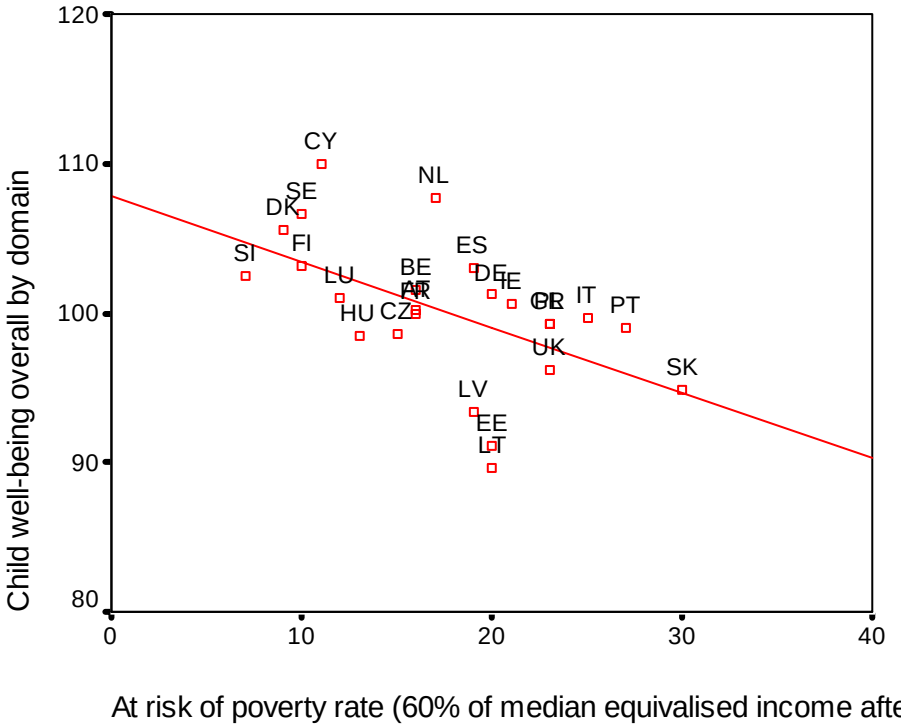
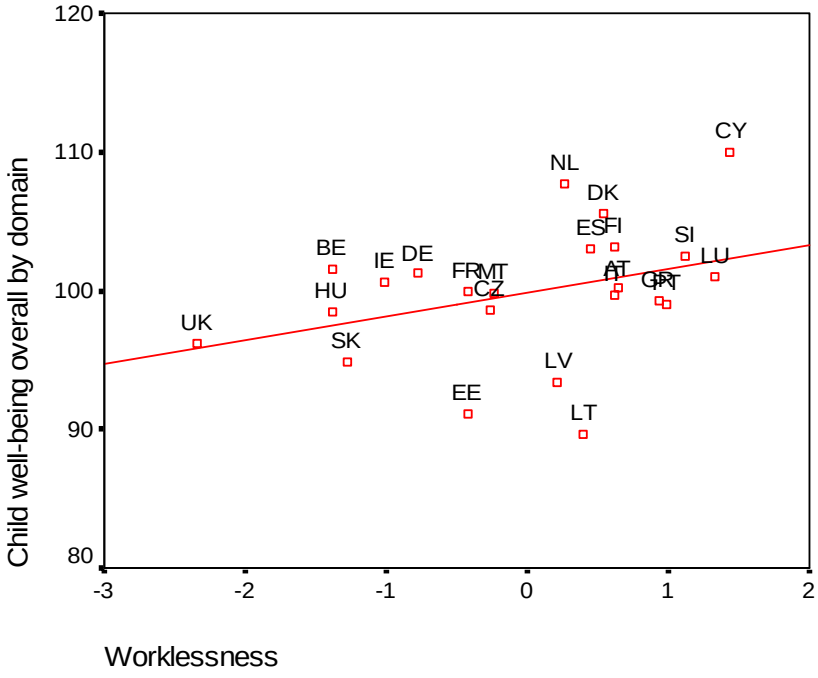


Figure 7: Child well-being by proportion of children in workless households

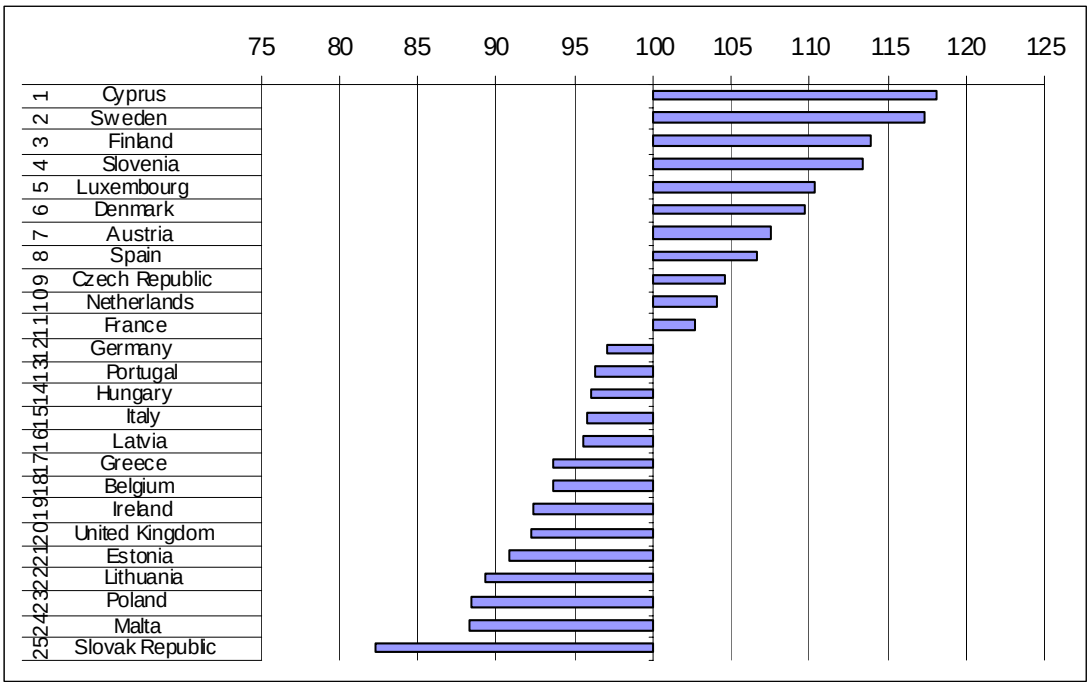


In the EU 25 index we developed a material situation cluster made up of the following indicators

- **Relative child income poverty domain** combining
  - Child poverty rate and
  - Child poverty gaps
- **Child deprivation domain** combining
  - Lacking car, own bedroom, holidays last year, a computer
  - Lacking a desk, quiet for study, a computer, calculator, dictionary, text books
  - Less than ten books in the home
- **Parental worklessness domain**.

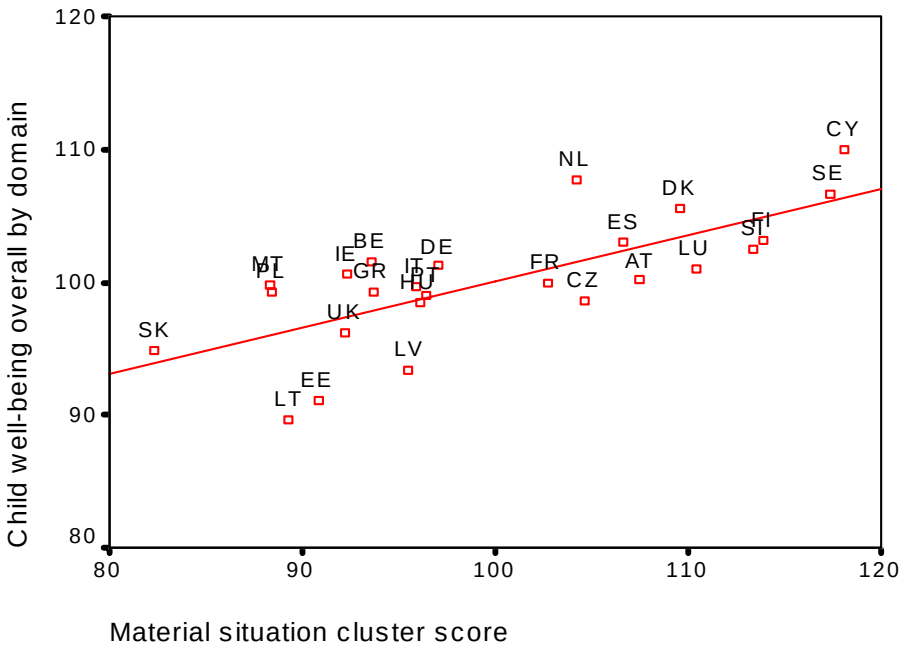
Figure 8 shows the distribution of this cluster and Figure 9 shows that this has a closer overall relationship with child well-being (r=0.73***). This is the consequence of adding child poverty gaps and a deprivation domain.

Figure 8: Material situation cluster



Source: Bradshaw et al (2007)

Figure 9: Overall child well-being by material well-being (r=0.73*)**



However the material situation cluster is still not a very good representation as it only explains about half of the variation in overall well-being. Is there a single cluster that could represent overall well-being adequately? It can be seen in Table 1 that both subjective well-being and risk and safety have a closer association with overall well-being than does material situation.

Table 1: Correlation between clusters and overall well-being

Cluster	Correlation coefficient (r)
Subjective	0.83
Risk and safety	0.79
Material situation	0.73
Housing and environment	0.65
Children's peer relations	0.47
Education	0.47
Civic participation	0.45
Health	0.40

In order to explore the relationship between the clusters in more detail and to help us decide whether any of them can represent the others as an alternative to a multi-dimensional index, Table 2 presents a correlation matrix of the clusters. The cells highlighted in yellow indicate that the coefficients are not statistically significant. Civic participation is not significantly associated with any other cluster. Education is only associated with health. Health is also associated with material situation, but nothing else. Subjective well-being and risk and safety are each associated with four other clusters. If we are to choose a cluster to represent well-being they seem the ones to go for.

Table 2: Correlation matrix of cluster scores

	Health	Subjective	Relationships	Material	Risk & safety	Civic Participation	Housing	Education
Health	1.00	0.04	-0.05	0.49	0.17	-0.21	0.03	0.48
Subjective		1.00	0.45	0.52	0.62	0.33	0.55	0.14
Relationships			1.00	0.02	0.51	0.27	0.01	0.00
Material				1.00	0.43	0.15	0.44	0.19
Risk & safety					1.00	0.41	0.47	0.00
Civic Participation						1.00	0.09	-0.26
Housing							1.00	0.29
Education								1.00

So subjective well-being or risk and safety might be the best candidates to represent all the other clusters. However subjective well being is based on the following domains and indicators.

- **Personal well-being**
  - Young people with scores above the middle of a life satisfaction scale 11, 13 and 15 years (%) - HBSC 2001/02
  - Students who agree or strongly agree to 'I feel like an outsider (or left out of things)', 15 years (%) - PISA 2003
  - Students who agree or strongly agree to 'I feel awkward and out of place', 15 years (%) - PISA 2003
  - Students who agree or strongly agree to 'I feel lonely', 15 years (%) - PISA 2003

- **Well-being at school**
    - Young people feeling pressured by schoolwork 11, 13 and 15 years (%) - HBSC 2001/02
    - Young people liking school a lot 11, 13 and 15 years (%) - HBSC 2001/02
- **Self defined health**
    - Young people rating their health as fair or poor 11, 13 and 15 years (%) - HBSC 2001/02

All these indicators are derived from survey data – either HBSC, which is undertaken every four years (and takes a long time to reach the public domain – 2001/02 is the latest available) or PISA, which is undertaken every three years. It is unlikely that the EU would be satisfied with an index that could be uprated so rarely.

Risk and Safety is derived from the following:

- **Risk & Safety**
    - Young people who were involved in physical fighting at least once in the previous 12 months 11, 13 and 15 years (%) - HBSC 2001/02
    - Young people who were bullied at least once in the previous couple of months 11, 13 and 15 years (%) - HBSC 2001/02
- **Child deaths**
    - All child deaths: All under 19 deaths per 100,000 children, WHO mortality database, 3 year averages, MRD
- **Risk behaviour**
    - Teenage pregnancy (adolescent fertility rate), adolescent fertility rate, births per 1000 women 15-19 - WDI, 2003.
    - Young people who have had sexual intercourse, 15 years (%) - HBSC 2001/02
    - Young people who used a condom during their last sexual intercourse, 15-year-olds (%) - HBSC 2001/02
    - Cigarette smoking: Lifetime use 40 times or more 16 years (%) - ESPAD, 2003
    - Drunkenness: Lifetime 20 times or more 16 years (%) - ESPAD, 2003

- Cannabis: Experience of use in Lifetime 16 years (%) - ESPAD, 2003
- Inhalants: Experience of use in Lifetime 16 years (%) - ESPAD, 2003

All but two of these indicators are derived from survey data with the same constraints on uprating.

So instead of clusters is there a single (iconic) indicator that is related to overall well-being? In Table 3 we have selected those indicators from our set of 51, which correlate, most highly with the index of overall child well-being. The selection is restricted to those with coefficients in excess of r=0.6 and which are statistically significant at least the 95 per cent level. They are presented in rank order.

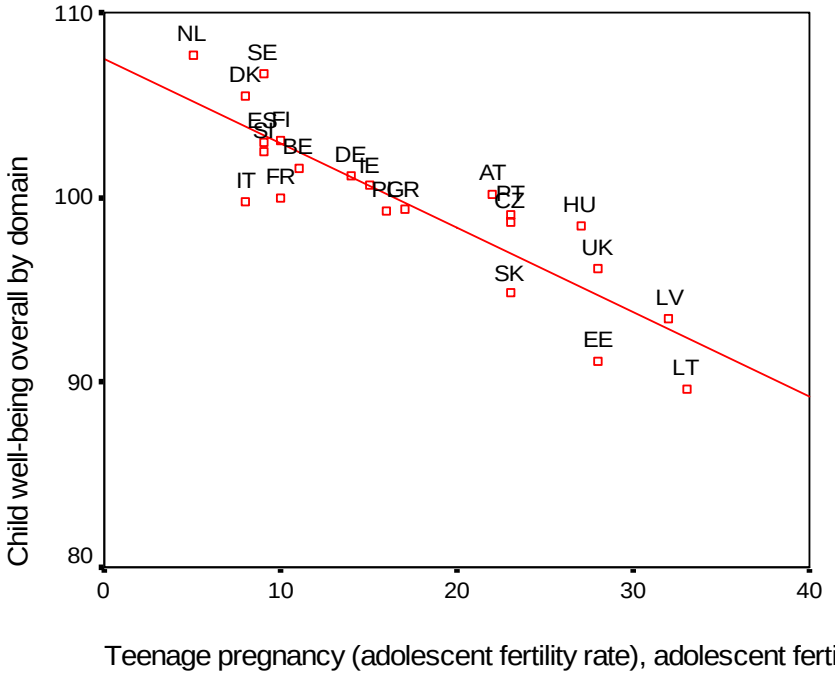
Table 3: Best matches between single indicators and overall child well-being

Indicator	Correlation coefficient r
Teenage fertility rate	-0.88***
Feeling unsafe in neighbourhood	-0.82***
Life satisfaction score	0.81***
Low family affluence (deprivation)	-0.78***
Infant mortality rate	-0.74***
Under 19 mortality rate	-0.67***
Bullied last month	-0.67**
Self rated health	0.64**
At least two household problems	-0.63**
Low educational possessions	-0.60**
Peers kind and helpful	0.61**

The relationship between the Teenage fertility rate and overall well-being is shown in Figure 10. It is a quite remarkable association. Those countries that are able to prevent their young women getting pregnant (actually giving birth) are those with the highest overall well being. Of course the closeness of the association does not determine cause and effect. A country

with low child well-being may lead young people to want to get pregnant earlier. Nevertheless it is a powerful finding - and unexpected.

Figure 10: Child well-being and teenage fertility rate r=0.88***



But the EU might be reluctant to rely on one indicator to represent child well-being. There is a danger that it might become a target. So next we decided to investigate whether there was a set of indicators that could be used to represent each cluster. To take health as an example - Table 4 presents the correlation coefficients between the individual indicators in the health cluster and the overall cluster score. It can be seen that low birth weight is the indicator with the highest correlation (though it is not very high and only just significant.)

Table 4: Correlations of health indicators and health cluster score

	N	*Correlation coefficient*	*p value*
Mortality rate, infant (per 1,000 live births) - WDI, 2003	25	-0.212	0.308
Low birth weight, as a percentage of total live births lower than 2500g - OECD Health data, MRD	24	-0.577	0.003
Immunization, measles (% of children ages 12-23 months) - WDI, 2003	25	0.482	0.015
Child immunization rate, DPT3 (% of children ages 12-23 months) - WDI HNP, 2002.	25	0.574	0.003
Child immunization rate, Pol3 (% of children ages 12-23 months) - WDI HNP, 2002.	25	0.552	0.004
Young people who brush their teeth more than once a day 11, 13 and 15 years (%) - HBSC 2001/02	22	0.418	0.053
Young people who eat fruit every day, 11, 13 and 15 years (%) - HBSC 2001/02	22	-0.103	0.647
Young people who eat breakfast every school day 11, 13 and 15 years (%) - HBSC 2001/02	22	0.517	0.014
Mean number of days when young people are physically active for one hour or more average of previous week and typical week 11, 13 and 15 years (%) - HBSC 2001/02	22	0.124	0.583
Young people who are overweight according to BMI, 13 and 15-year-olds (%) - HBSC 2001/02	22	-0.503	0.017

This procedure was repeated for all the domains, and for each, one indicator was selected that best represented the overall domain score. The selected variables are listed in Table 5 with their correlation coefficient for the domain, which as would be expected are high and significant for all but health. The Table also shows the correlation between the selected indicator and the overall index of child well-being. There is, not unexpectedly some non significant correlations – this is the case for health, relationships, education and civic participation. These were the domains with lower correlations with overall well-being in Table 1.

Table 5: Selected indicators to represent each domain

Cluster	Indicator	Corr. with cluster	sig.	Corr. with overall well-being	sig.	n
Health	Low birth weight,	-0.58	0.003	0.06	0.764	24
Subjective	Young people with scores above the middle of a life satisfaction scale	0.88	0.000	0.81	0.000	22
Relationships	Young people living in 'single parent' family structures	-0.75	0.000	-0.25	0.256	22
Material	At risk of poverty rate	-0.83	0.000	-0.55	0.006	24
Risk& safety	All under 19 deaths per 100,000 children,	-0.81	0.000	-0.67	0.000	23
Education	Participation rates 15-19	0.73	0.000	0.35	0.141	19
Civic	Political interest	0.86	0.000	0.24	0.328	18
Housing	Households with children reporting at least two household problems -	-0.89	0.000	-0.63	0.001	25

How well do these selected indicators represent overall well-being when they are combined into a single measure using the average of their z scores. Figure 11 shows the relationship with overall well-being. The correlation is high 0.88 but using the selected indicators produces some changes in the rank order of countries. These are summarized in Table 6. This audience will be interested to note the Spain moves down the league table as a result of using single indicators.

Figure 11: Child well-being by domain by child well-being by indicator

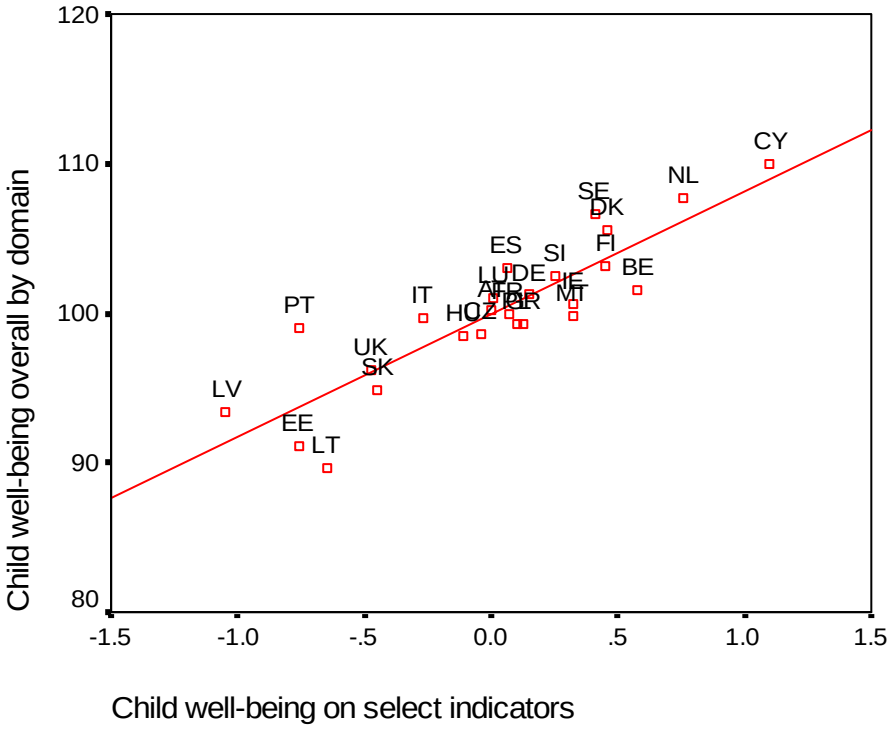


Table 6: Comparison of rankings using selected indicators and domains

Well-being by domain	Well-being by selected indicators
CY	CY
NL	NL
SE	BE
DK	DK
FI	FI
ES	SE
SI	IE
BE	MT
DE	SI
LU	DE
IE	GR
AT	PL
FR	FR
MT	ES
IT	LU
GR	AT
PL	CZ
PT	HU
CZ	IT
HU	SK
UK	UK
SK	LT
LV	EE
EE	PT
LT	LV

It is probable that with further investigation we could do better in terms of consistency with a different selection of indicators. The indicator children in lone parent families is not a good representation of relationships on either theoretical or empirical grounds, and it, and subjective well-being, rely on the HBSC which is undertaken every four years and slow to emerge.

Nevertheless the selected indicators give us a more parsimonious picture of how countries perform on the different clusters and it is the cluster performance rather than the overall index that it is most useful to focus on if national governments are to learn lessons for policy from these kinds of comparisons.

Conclusion

This paper has sought to assist the EU in its admirable work to develop indicators of child well-being. The overall index that we derived may be useful as an academic exercise but it probably contains too many indicators to be useful for EU to handle as a practical policy tool. The paper has explored some ways in which the task might be simplified. In our view performance on the clusters is more important than the overall index score – not least because policy makers are going to be able to understand, interpret and respond to cluster and domain rankings more than they can an overall index. Nevertheless academics may try to interpret the overall index. We have undertaken some analysis of the of the possible drivers of overall well-being. We find that –

- child well-being is a related to GDP per capita,
- social expenditure as a percentage of GDP and
- the proportion of GDP going on family benefits and services.

Thus it looks as though wealth and policy matters to children.

What about the future? Fresh evidence will come with the EU SILC survey this year – though it is not going to produce child based data. Euroqual and the European Social Survey have potential though both should think more about asking questions about children. PISA is a wonderful resource but limited by being school based and preoccupied with achievement. It is

extraordinary that the best source of information on what children think and feel in most of our countries comes, not from national surveys, but the WHO HBSC. We should all be grateful for the team involved in HBSC. However (speaking as a user) it is extremely frustrating that the data is never released until the next survey is published. We need a new EU survey of children.

References

Bradshaw, J. (2007) Some problems in the international comparison of child income poverty in Wintersberger, H. , Alanen, L., Olk, T. and Qvortrup, J. (eds) *Childhood, Generational Order and the Welfare State: Exploring Children's Social and Economic Welfare*. Vol. 1 of COST A19: Children's Welfare. University Press of Southern Denmark: Odense.

Bradshaw, J., Hoelscher, P. and Richardson, D. (2007) An index of child well-being in the European Union 25, *Journal of Social Indicators Research*, 80, 133-177.
http://springerlink.metapress.com/content/f3642p2x00hn5h01/fulltext.pdf

Marlier, E., A B. Atkinson, B. Cantillon, and B. Nolan (2007) *The EU and Social Inclusion: Facing the Challenges*. Bristol, The Policy Press.

UNICEF (2007) *Child poverty in perspective: An overview of child well-being in rich countries*, Innocenti Research Centre Report Card 7. UNICEF: Florence.