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Social and Political Indicators of Human Well-being

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Abstract

A plethora of what are loosely described as social and political indicators of well-being exist. Both the range and country coverage of these indicators has increased appreciably in recent years. In this paper we ask what contribution these indicators can make towards our understanding of human well-being. There is currently a vast array of political and social indicators of development. These measures include information on access to services, housing, environmental degradation, income, social participation, inequalities, and time use; while political indicators include measures of political participation, civil liberties, and human and labour rights. While some of these indicators reflect the progress countries are making towards attaining fundamental developmental goals, with several being used to assess progress towards the Millennium Development Goals (in particular measures of income, health, and education status) others act as more intermediate indicators of progress. This paper critically surveys the range of social and political indicators of development currently available focussing particularly on non-income based social and political indicators of well-being.

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While many of these indicators exhibit wide variations across countries, the interpretation of these differences is not always clear. Here sources of cross-country variations are examined, with differences in data availability and measurement being examined. Finally the paper examines the links and correlations between these various indicators of development across countries and their interpretation as measures of development.

1   Introduction

Quality of life bears a complex relationship to a wide range of social and political indicators of development. Over recent years the availability of data has increased appreciably in both the range and number of countries covered. In this paper we ask what contribution these indicators can make towards our understanding of human well-being. This paper is structured as follows. In section 2 the conceptualization of 'well-being' and development is discussed. Section 3 then looks at how these concepts may be applied to multidimensional approaches to welfare analysis. In section 4, issues surrounding the choice of indicator variables, data quality and availability are reviewed. In section 5 the interpretation of social indicators is discussed, and section 6 then goes on to look at issues surrounding aggregating and disaggregating social indications. Section 7 then reviews the literature on political indicators of well-being before finally concluding.

2   Conceptualizing human well-being and development

Since the 1990s the United Nations Development Programme's *Human Development Report*s (hereafter UNDP and *HDR*) have argued that 'human development', and not economic growth, should be the objective of development policy. Indeed it is now widely accepted that measures of income and poverty do not adequately measure human well-being. Instead income has increasingly become seen as a means towards achieving an end, rather than as an end in itself, and this has led to a substantial shift in emphasis in poverty analysis. Instrumental to this shift have been the 'basic needs' approach, developed in the 1970s (ILO 1976, Seers 1972), and Sen's (Sen 1993) 'capabilities' approach. The basic needs approach placed emphasis on the fact the poor require access to certain basic goods and services, and that income may not be a necessary or sufficient condition for their provision. For Sen, on the other hand, development implied expanding the choices available to individuals, or their capabilities. As measurement of the capability space is problematic (as the set of choices available to individuals cannot be observed), Sen also distinguishes 'functionings' (or actual 'states of being and doings', such as being healthy) which may be measured. He suggests that the capabilities most essential for a good life are: adequate nourishment, leading a long and healthy life, literacy, and shelter. Other factors that influence the ability of individuals to participate in society, for example gender or race, are also important determinants of capabilities.

The commonality of these approaches is their emphasis on the multi-dimensional nature of well-being. The UNDP's *HDR*s have attempted to quantify some of these non-monetary aspects of development. While these reports have been subject to considerable criticism by authors including Sen (1998) and Ravallion (1996*b*), they have helped focus attention on broader concepts of welfare. In particular the development of composite indicators of development, such as the Human Development Index (HDI), has helped raise awareness of the multidimensional nature of poverty and have been instrumental in bringing non-income based measures of development to the fore of policy analysis. These increasingly multidimensional approaches to development have been mirrored in Europe, with concepts such as 'social exclusion' gaining increased

credence since the 1990s. Atkinson (1998) identifies three key characteristics of social exclusion: relativity (i.e. exclusion occurs relative to some societal norm), agency (i.e. exclusion results from the actions of agents), and dynamics (i.e. future prospects are as relevant as current situation). While some have argued that this concept is of less relevance to developed countries (Saith 2001), its focus on identifying groups of the socially excluded and on the role of social circumstances in generating social exclusion is an area as yet little explored by development economists.

These developmental approaches all aim to improve human well-being, the ultimate goal of which is to maximise happiness or satisfaction. Yet each of these approaches to social development focus on objective (or material) measures of living conditions and tended to ignore subjective measures of welfare (Anand and Ravallion 1993). More recent approaches to measuring well-being, particularly in developed countries, have taken improvements in happiness or satisfaction as the ultimate goal of economic development, and examined the correlations of economic and social factors with these measures. Easterlin's (1974) seminal paper showed that happiness varies little across countries, and that in the US has increased little over time. This, he argues, suggests that subjective well-being does not increase with income but is instead dependent on individuals relative economic position (Easterlin 1974, 2003). More recent studies link subjective measures of well-being to family status, health and social support, and employment (Easterlin 2003, Berkman and Glass 2000, Blanchflower and Oswald 2000). Sen (1993, 1998) makes a similar point for developing countries. He notes that rates of morbidity (self-reported health status) are higher in the US than those reported in the Indian state of Kerala, and concludes that high life expectancy and high morbidity move together and not in opposite directions. This, he suggests, is because well-being depends on 'positional objectivity'. A recent EU report by Berger-Schmitt and Noll (2000) on well-being concluded that subjective evaluations of well-being are 'dependent on the level of aspirations, and according to this approach do not represent appropriate criteria for guiding social policy which is considered as the primary function of welfare measurement' (see Veenhoven 2004 for a further discussion of these issues).

3   Application of multidimensional approaches to poverty

While multidimensional approaches to conceptualizing poverty have helped researchers understand the nature of poverty, attempts to objectively measure progress towards improving human development have been harder. The HDI, which is a weighted sum of three measures of deprivation (income, health and education), is perhaps the best known and most widely used aggregate indicator of well-being. While composite indices provide a useful way of summarising complex measures of development, they (and in particular the HDI) have been subject to considerable criticism (see, for example, Sen 1997 and Kanbur 2002). It has been argued that the index is conceptually weak (Srinivasan 1994), that interpretation of these indicators is unclear, that the aggregation of disparate measures of development does not lead to a meaningful index, and that the choice of components and weights attached to these components is value laden. How for example should a change in the index be interpreted if it rises because one indicator has gone up and another down? Are cross-country or time-series comparisons meaningful? Alternative approaches to poverty, and in particular analysis of chronic poverty in developing countries, and of 'social exclusion' in developing countries, have used multidimensional indicators of development to assess poverty using 'union' and

'intersection' approaches. 'Union' measures of poverty define an individual as poor where they fall below some critical threshold in *any* of the measured dimensions of poverty, while 'intersection' measure define poverty on the basis of a some combination of well-being scores (Atkinson *et al*. 2002). For Hulme (2001), such an approach is particularly important; as it is the multidimensional nature of poverty typically experienced by the chronically poor that prevents their escape.

Numerous studies have examined specific indices of well-being. Choice of individual indicator variables, measurement and interpretation are discussed in more detail in the following section. Dasgupta (1990) suggests categorisation of these variables into 'input' and 'output' measures of well-being. He suggests that the basic needs approach may be perceived as a production process, with the consumption of commodities, including nutrition, clean water and medicine, health facilities and education, being perceived as inputs, while outputs measure the 'achievement of vital interests of people', such as adult literacy rates, infant and child survival rates and life expectancy. These output measures should, he argues, be conceived of as a different class of social indicator to those measuring inputs. Dasgupta, like Sen, also places importance on the 'environment of the production process which converts commodity inputs into outputs'. The extent to which people are able to play an active and critical role in the choice of leaders, are able to express opinions, to be protected from abuse and other environmental factors are, he argues, crucial in shaping individual well-being.

Sen's capability approach has been criticised on the grounds that it does little to enable comparative analysis. While Sen distinguishes between 'functionings' and 'capabilities', it is capabilities, rather than functionings that relate to concepts of well-being. Srinivasan (1994) suggests that the importance of Sen's approach for applied analysis of well-being is limited, and reports Sudgen's critique of Sen:

> Given the rich array of functioning that Sen takes to be relevant, given the extent of disagreement among reasonable people about the nature of the good life, and given the unresolved problem of how to value sets, it is natural to ask how far Sen's framework is operational. Is it a realistic alternative to the methods on which economists typically rely – measurements of real income, and the kind of practical cost-benefit analysis which is grounded in Marshallian consumer theory? (Sugden 1993: 1,953, reported in Srinivasan 1994: 239)

While Srinivasan suggests that income may be as good a measure of well-being as any alternative, Anand and Ravallion argue that this is in fact an empirical question:

> if only a weak link exists between 'income poverty' and 'capabilities', relative to other factors, then the human development approach would clearly imply less emphasis on private incomes, except insofar as growth facilitates the financing of public support. On the other hand, if private incomes are a powerful instrument for expanding capabilities, then a focus on income poverty may be justified from either perspective. An empirical question needs to be addressed fully before an assessment can be made of the policy implications of the human development approach. (1993: 137)

The empirical evidence does not however lead to a conclusive answer. Ravallion notes that although several studies have used household or individual data to look at the relationship between income and health or educational outcomes, the 'methodologies and data used have differed greatly among these studies'. The results from these studies have been inconclusive; some have found income to improve health and educational outcomes while others have found little or no effect. The results on public spending are similarly inconclusive (Anand and Ravallion 1993: 137) Nor is it clear that other indicators of well-being are well correlated; indeed as Ravallion (1997) emphasizes non-income measures of well-being, although showing 'considerable congruence' are 'not so congruent that any of them will do'. He therefore argues that there is a need to retain a focus on individual indicators of well-being. Other studies, such as those of Atkinson and Bourguignon (1982) and Laderchi, Saith, and Stewart (2003), also suggest that a lack of overlap between multidimensional indicators of deprivation is common and in the context of examining social exclusion in Europe, Atkinson (2002) concludes that that there is no justification for placing primacy on one indicator over another.[1] A similar conclusion is drawn by Saith and Harriss-White (1998), who argue that the way in which the problem of human well-being is conceptualised is instrumental in shaping the choice of indicator because the 'considerable lack of overlap' between them means that targeting based on one indicator will mean serious mis-targeting on others.

For developing countries, the Millennium Development Goals (MDGs) have been accepted as a gauge for measuring progress towards achieving human development. Many of these goals are compatible with Sen's 'functioning approach' to well-being, which suggests that the minimum requirements for individuals to function are that individuals should be healthy, educated, and nourished. The MDGs' targets and the indicator variables used to assess progress towards these goals are reported in Table 1. Of the eight goals, the first six in particular have substantial bearing on the debate on human well-being.[2] For each of the goals, targets have been set for achievement by 2015 based on a set of indicator variables.[3] While the goals have been ratified by the 189 member states of the United Nations, the choice of indicator variables remain the subject of debate. The Task Force on Education and Gender Equality, for example, has criticised the use of enrolment data rather than school completion rates as an indicator of educational attainment[4] because they believe this to be a more appropriate indicator of educational 'output'. Other indicators, such as literacy, have been criticised on the grounds of the poor quality of data availability. Issues concerning the choice of indicator variables, data availability, quality, and comparability are explored in greater detail in the following section.

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[1] In the case of the EU, unemployment rates have typically been prioritised as indicators of deprivation.

[2] The final goal of 'developing a global partnership for development' is viewed as a means of achieving the first seven goals as many poor countries will require international assistance in achieving these (via ODA, debt relief, access to markets, etc.).

[3] The set of indicators remain under consultation.

[4] They argue that enrolment rates should be seen as an input into the schooling process, while completion rates are the outcome.

Table 1 The Millennium Development Goals, targets and indicators

	Goals	Targets	Indicators
1	**Eradicate extreme poverty and hunger**		
	Poverty	Halve between 1990 and 2015 the proportion of people with income below $1 a day.	Proportion of population below $1 per day (PPP values). Poverty gap ratio (incidence*depth). Share of poorest quintile in consumption.
	Hunger	Halve between 1990 and 2015 the proportion of people who suffer from hunger.	Proportion of underweight children (under 5s). Proportion population with inadequate energy intake.
2	**Universal Primary Education**		
		Ensure universal primary schooling for boys and girls by 2015.	Net enrolment ratio in primary school. Proportion pupils starting grade 1 reaching grade 5. Literacy rate of 15-24 year olds.
3	**Promote gender equality and empower women**		
		Eliminate gender inequality in education.	Ratio of girls to boys in primary, secondary and tertiary education. Ratio of literate females to males 15-24 years. Share of women in wage work in non- agricultural sector. Proportion of seats held by women in national parliament.
4	**Reduce child mortality**		
		Reduce the under-5s mortality rate by two-thirds by 2015.	Under-5s mortality rate. Infant mortality rate. Proportion of one year olds immunized against measles.
5	**Improve maternal health**		
		Reduce by three-quarters maternal mortality ratio by 2015.	Maternal mortality ratio. Proportion of births attended by skilled health personnel
6	**Combat HIV / AIDS, malaria and other diseases**		
	HIV / AIDS	Halt and reverse spread of HIV / AIDS.	HIV prevalence among 15-24 year old pregnant women. Condom use rate of contraceptive prevalence rate. Number of children orphaned by HIV / AIDS.
	Malaria and other diseases	Reverse incidence of malaria and other major diseases.	Prevalence and death rate of malaria. Proportion of population using effective malaria prevention and treatment measures. Prevalence and death rate from TB. Proportion TB cases detected and cured under Directly Observed Treatment Short Course.
7	**Ensure environmental sustainability**		
		Integrate principles of sustainable development into country policies and programs and reverse the loss of environmental resources.	Change in land area covered by forest. Ratio of area protected to retain land area diversity. Energy use per $1 GDP. Carbon dioxide emissions and consumption of ozone depleting CFCs. Proportion of population using solid fuels.
		Halve by 2015 the proportion of people without sustainable access to safe drinking water.	Share population with sustainable access to an improved water source.
		Achieve by 2020 significant improvement in the lives of at least 100 million slum dwellers.	Proportion of population with access to improved sanitation. Proportion of population with access to secure tenure.
8	**Develop a global partnership for development**		

4 Measuring well-being: data availability, data quality, and the choice of indicator variables

Over the last decade there have been vast improvements in the quality of data available for developing countries on multidimensional indicators of well-being. In particular the increased availability of large scale microeconomic datasets, such as the Living Standards Measurement Surveys (LSMS), which record indicators of social well-being, have considerably improved the potential for conducting high quality empirical research on developing countries. However, considerable data limitations remain particularly where researchers want to conduct comparative research either across countries or within countries over time. Loup, Naudet, and DIAL (2000), Ravallion (1996*a*) and Bidani and Ravallion (1997) all discuss in depth the data constraints that exist in applying multidimensional approaches to poverty analysis. Data problems arise both in terms of data availability and data quality. Table 2 summarises the availability of key indicators of development from 1990-95, as reported by Loup, Naudet, and DIAL (2000). While this table reveals that considerable data gaps exist, these problems are even greater when it is considered that data is most frequently missing for the poorest counties. Data coverage for the world's poor is therefore considerably worse than suggested by this table.

Even more problematic for comparative research is the issue of data quality. As Srinivasan (1994) has noted, for many countries data collected on key social indicators is old, measurement biases and errors abound, many indicators are estimated, and data is often incomparable both over time within countries and at a point in time across countries.[5] Even within official international organisations publications inaccuracies and inconsistencies in the data abound. As Loup, Naudet, and DIAL note, quoting from the 'Africa Poverty Status Report' (1999), prepared for the SPA Working Group on Social Policy:

> different numbers can be given for the same series. Maternal mortality, which for Ghana jumped from 400 to 1,000 from one issue of the World Development Report to the next, is often mentioned in this regard. Mauldin (1994) showed that, although they both used the same source, the WDR reported from 56 developing countries and the HDR for 55 of these, and a further 48. Counting differences of less than 50 points as the same, HDR gave higher values than the WDR for 26 countries, lower for 12 and about the same for 17. Some differences are substantial e.g.; Benin at 800 and 161, Mali at 850 and 2,325 and Malaysia at 120 and 26. The correlation coefficient between the two sets of figures is only 0.7, dropping to only 0.4 for high mortality countries. (Loup, Naudet, and DIAL 2000: 13)

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5   As examples, Srinivasan reports that Sen's (1998) study has used unreliable data on infant mortality, while Barro and Lee's (1993) influential growth study relied on unreliable schooling, investment and life expectancy data.

Table 2 Data coverage for core development indicators (1990-95)

	No countries with data (out of 171)	Proportion of countries with data (out of 171)	Percentage of population represented
Economic well-being			
1. Incidence of extreme poverty: population below $1 per day	59	35	79
2. Poverty gap ratio: incidence times depth of income poverty.	51	30	72
3. Inequality: poorest fifth's share of national consumption	74	43	85
4. Child malnutrition: prevalence of underweight under 5s	117	68	93
Social development			
Universal primary education			
5. Net enrolment in primary education	102	60	61
6. Completion of fourth grade primary education	101	59	79
7. Literacy rate of 15-24 year-olds.	77	45	84
Gender equality			
8. Ratio of girls to boys in primary and secondary education.	126	74	87
9. Ratio of literate females to males (15-24 year-olds)	77	45	84
Infant and child mortality			
10. Infant mortality ratio	126	74	87
11. Under-five mortality rate	77	45	84
Maternal mortality rate			
12. Maternal mortality ratio	162	95	100
13. Births attended by skilled health professionals	163	95	100
Reproductive health			
14. Contraceptive prevalence rate	159	93	99
15. HIV prevalence in 15-24 year-old pregnant women.	124	73	98

Source: Hammond (1998).

In spite of these weaknesses the data recorded in official publications is commonly used to monitor developmental goals and to evaluate policies.[6] Several authors have argued that there is an urgent need to improve the data collection capabilities of countries, that weaknesses in reported data should be more clearly noted, and that where data is weak either conceptually because of wide differences in definitions or because data availability is poor and based on projections it should be omitted from the tables.[7]

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[6] For example, data on infant mortality and life expectancy is commonly used as an indicator of development in spite of the immense problems with data availability and quality.

[7] Fields (1994) criticises the use of inappropriate and inconsistent data for analysis of income, inequality and poverty. He suggests that three criteria should exist for data admissibility:
  i.   Data should come from actual household survey or census data.
  ii.   It should be national in coverage.
  iii. For comparisons over time the income concept (whether income or expenditure) and recipient unit (household, individual or per capita) must be constant.
While these criteria are not stringent, Fields argues, 'what is lamentable however is that even these three are often not fulfilled' (1994: 97). In the context of income distribution data, Fields suggests that of 70 countries with income distribution estimates, half fail to meet these minimum criteria.

Although the UN has recently made an attempt at standardising concepts and methods of data collection, as Loup, Naudet, and DIAL note:

> there are currently no international methodological norms in the area of human development statistics (except possibly the DHS methodology for health and population surveys and the LSMS for surveys on living standards). In this regard the situation differs greatly from most other statistical fields, where such norms exist. One can mention, for instance, the UN methodology for national accounts, the GDDS and SDDS standards of the IMF for financial and economic statistics or the EUROTRACE method for external trade statistics, among others.

> In spite of this gap, there is at present to our knowledge no attempt to initiate work in this direction. This appears paradoxical given the high priority now given to human development statistics as well as the existing problems of data quality and comparability. (Loup, Naudet, and DIAL 2000: 50)

The last decade has also seen a rapid increase in the availability of micro-economic household datasets for developing countries. However, Ravallion (1996*a*) notes that common data problems for research and policy application are 'lack of survey integration (some surveys get health data, some get incomes, but fewer get both)' and 'too small a sample to capture low-frequency events (such as infant death)' (Bidani and Ravallion 1997). Moreover, in the past difficulties have arisen in making cross country comparisons because data across developing countries has varied widely in terms of sampling and information collected, leading to varying conclusions about relationships between variables and limiting the generality of conclusions that can be drawn.

Even among high quality micro data sets problems of comparability remain. Strauss and Thomas (1996) compare actual and measured heights of children recorded in the United States' National Longitudinal Survey of Children and Mothers (NLSCM) and conclude that 'reported height of children is prone to systematic errors that render it of questionable value even in a high-quality socio-economic survey conducted in a well-educated society, like the NLSCM in the United States'. The problems of cost effective collection of socio-economic data therefore remain large. The rest of this section details the problems attached to demographic, health, and education indicators of development and then goes on to review recent data developments.

4.1 Health and demographic data

Sen (1998) has argued that mortality data is a key indicator of human well-being because life has 'intrinsic value' (a longer life is desirable in own right), 'enabling significance' (as life necessary to function), and 'associative significance' (as life expectancy is linked with other aspects of welfare). However, as Chamie (1994) has noted, international data on life expectancy is particularly weak with the data required for estimating life expectancy at birth being available for only 30 out of 117 less developed countries. Moreover mortality data is most likely to be missing in countries where mortality is highest, and for these countries where vital registration is absent (80 per cent of African and Asian nations) mortality rates have to be estimated from other sources. While the information available on infant mortality rates is better, substantial

gaps in the data exist particularly for African countries where data is missing for around 30 per cent of countries. It is Chamie's conclusion that 'the repackaging of population data has greatly increased, and as a consequence, confusion regarding the original source and nature of the data has become widespread among users' (Chamie 1994: 145). While less concerned with data quality, Sen (1998) and Saith and Harriss-White (1998) have called for information of life expectancy to be disaggregated and for age specific life expectancies to be recorded.

Most recently authors of the 'Task Force on Child Health and Maternal Health' have suggested that the maternal mortality ratio, one of the key indicators for achievement of the MDGs, is very hard to measure. They suggest that even in the US maternal death rates are underreported by as much as 50 per cent, while in many LDCs a 'sisterhood method' of recording maternal death (which asks interviewees to recall deaths over the last 10-12 years) is even more unreliable (Freedman *et al*. 2003). In the 2002 *HDR* maternal mortality rates were reported for only 27 out of 36 low human development countries. As an indicator variable for measuring progress towards achieving the MDGs, therefore, this indicator is weak. The number of births attended by skilled health professionals has therefore been included as a proxy for maternal deaths. However this variable too is the subject of some criticism: Srinivasan (1994*a*) suggests that there are differences in defining health professionals, while Freedman *et al*. (2003) note that such indicators are subject to disintermediation because once countries know which statistic is to be used for measuring development progress, resources may be shifted towards achieving these goals (for example, if the number of health professionals attending births are monitored resources may be diverted towards achieving this goal at the expense of other areas of the health system, even though these areas may also have a substantial impact on maternal mortality rates).

Other indicators of health and well-being include data on morbidity, nutritional intake and anthropometric measures of health status. Morbidity data, because of the subjective nature of the data, has been subject to considerable criticism with several authors suggesting that such data is useless of policy analysis.[8] The use of nutritional intake data, one of the key MDG indicator variables, has also been subject to considerable attack. Authors such as Ravallion (1994) have argued that the use of nutritional data as a measure of developmental outcomes is conceptually flawed because of its focus on consumption rather than outcomes. This he argues has led to problems with studies on the impact of income on nutrition finding conflicting results.[9] Moreover Srinivasan (1994) is critical of the data used to measure consumption, and in particular argues that collecting data on calorie intake over a short time period is inappropriate as it is long term nutritional intake that effects well-being. Conceptual flaws and shortcomings in measurement are therefore argued to limit the value of data on nutritional status as an indicator of development. Measures of outcomes are seen as conceptually superior to data on food intake and have led more recent studies, such as that of Micklewright and Ismail (2001), to focus on anthropometric measures of outcomes. While the interpretation of adult indicators well-being, such as Body Mass Indices and height, are subject to criticism because genetic factors may have an impact on the data, indicator

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[8] Most studies show that self-reported health status tends to get worse as income rises.

[9] He cites the Behrman and Deolalikar's (1987) study of the impact of income on nutritional intake that finds that calorie intake does not respond to increases in income even among poor.

variables measuring children's health status are accepted as conceptually appropriate measures of well-being. However, the criticisms of Strauss and Thomas (1996) on errors in measurement on self-reported data on child height suggest that cost-effective collection of anthropometric data remains.

4.2 Education data

Attainment of universal primary education is a key target of the MDGs. The three indicators selected to monitor progress towards attainment of this goal are: (i) net enrolment in primary school, (ii) proportion of pupils reaching grade 5, and (iii) literacy rate of 15-24 year olds. Most analysts concur that educational 'flow' variables are more informative measures of progress towards attaining human development than assessments of 'stocks'. The Task Force of Gender and Education moreover concurs with the focus of the MDG on the completion of primary schooling (as defined by World Bank). The quality of data on literacy is generally thought to be of poor quality. Grown, Gupta, and Khan (2003) point out that there is no universal meaning of literacy,[10] that many countries are unable to provide even basic information on literacy. Behrman and Ronsenzweig (1994) note that much of the data on literacy is very old: that 1991 data on literacy is based on data from the 1970s for 60 out of 145 countries. While the accuracy of enrolment data may be better, differences in quality of schooling, dropout rates and so on may mean inconsistencies in measurement remain. Moreover, as enrolment data is a measure of inputs into the educational process, it is often regarded as a poorer indicator variable than school completion rates. However the 2002 *HDR* records data on completion rates for just 11 out of 36 countries with low human development.

4.3 Developments in data collection, reporting and analysis

While the quality of development data has been subject to considerable criticism, there have been considerable efforts to improve the quality of data over recent decades. From the mid-1980s there has been a significant increase in the availability of comparable large-scale micro economic data sets for developing countries, in part thanks to the development of LSMS data sets. These data sets are household surveys which include detailed information on welfare, including data on consumption, income savings, employment, health, education, fertility, nutrition, housing and migration (Grosh and Glewwe 1996). Currently LSMS data is available for 40 countries, about half of which are for Eastern European countries. Kanbur (2002) notes that in spite of these data improvements, there are still many countries for which data does not exist or is dated. Moreover sample sizes in the LSMS are variable, with sample sizes being as small as 780 households in the Chinese survey, and smaller than 2000 households in several of the other surveys.

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[10] Three alternative indicators of literacy are generally accepted. Some of these are however relatively poor measures of actual literacy. UNESCO for example suggests, 'a person is literate if s/he has completed five or more years of schooling'. However some individuals with fewer years of schooling may be functionally literate, while some of those with five or more years of schooling may not have attained functional literacy.

There have also been changes in the availability and reporting of aggregate data. In particular in the 2002 *HDR* 'the indicator tables have been streamlined to focus on indicators that are most reliable, meaningful and comparable across countries' (UNDP 2002: 141). The process has reduced the number of indicator tables—removing some tables altogether and consolidating others.

Meanwhile data availability for other indicators has improved, with new surveys on literacy and crime meaning that comparable data should soon be available in future editions. Yet the 2002 HDR notes that: 'despite these strides in measuring human development, many gaps and problems remain. Sufficient and reliable data are still lacking in many areas of human development. Gaps throughout the tables demonstrate the pressing need for improvements in both the quantity and quality of human development statistics' (UNDP 2002: 143). In particular they note that in 2002 29 countries were excluded from the main indicator tables, reducing the total number of countries for which data is available by 12 over a period of just one year, so that data for only 162 countries was recorded.

While authors such as Srinivasan have painted a gloomy picture of the quality of data available on social indicators of development. Srinivasan argues that unreliable and biased data could seriously distort analyses and policy conclusions. Poor data quality is not exclusive to the analysis of developing countries, and other authors such as Atkinson (2002) and Griliches (1986) have examined the importance of the quality of data to econometric research. Atkinson examines ways in which economists have chosen to deal with data deficiencies, and in particular examines the views that (i) 'the quality of the data does not matter', (ii) 'the data are not that bad' and (iii) 'we have learned to adjust for data deficiencies'. He concludes respectively that (i) the quality of data does matter and should be examined carefully to assess 'fitness for purpose' before it is used; (ii) while data is improving, there remains considerable room for improvement,[11] and (iii) that while economists are getting better at dealing with data deficiencies, more investment is needed in this area.[12] Atkinson concludes that:

> 'in my view we need a constructive approach to the very real problems
> of data deficiencies. We should not ignore them, nor should we paint a
> picture of total disaster. But to make further progress, issues of data
> quality should be higher in the priorities of the economics profession'.
> (2002: 25)

Ravallion (1996*a*) reaches a similar conclusion to Atkinson arguing, 'closer scrutiny of sampling and survey methods is needed'. While clearly good data is highly desirable for informing policy, in reality data inadequacies are common. Ravallion continues, 'measurement errors can have profound implications for empirical poverty analysis'. Although methods of dealing with error, such as the construction of dominance tests to assess the robustness of poverty comparisons to certain structures of measurement errors, have improved he notes that obtaining a robust ordering for poverty

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[11] In particular he suggests that the availability of long run data series would be a considerable improvement over examining single years or short time periods.

[12] In particular he notes that one commonly used method for correcting for differences in definitions, the inclusion of dummy variables, is not satisfactory on the field of economic inequality.

identification may be elusive. Cowell and Victoria-Feser (1998) have also proposed advances in methods for dealing with data problems, such as 'trimming' and data censoring or truncation. Ravallion (1996*a*) has also argued that the methods used to correct for measurement errors are rarely tested. He suggests that experiments to test the robustness of the data and the conclusions drawn should be implemented. While such improvements clearly improve the quality of research findings available to us Ravallion concludes, 'substituting method for data is a long way from being perfect'. Srinivasan (1994) and Atkinson (2002) have also made similar points about the importance of checking the robustness of data by checking it against other sources.

Authors such as Atkinson (2002) and Srinivasan (1994) have called for greater transparency and discussion of the limitations of the data available. One further way in which the debate could be moved forward would be to pay greater attention to the *precision* of the indicators available. As Ravallion (1996*a*: 1339) notes 'current practice in poverty analysis typically ignore the statistical imprecision of the measures used', yet for many of the indicators available computations of standard errors would be a relatively straightforward process (particularly where data is obtained form household survey data). The inclusion of standard errors would allow analysts to be more confident in attaching rankings to countries for individual indicators, and would also guide policy makers by helping focus greater attention on variables whose values are relatively certain.

5   Interpreting social indicators

While studies abound on the relationship between individual indicators of human development and income and economic growth, the relationship between other indicators of well-being are less well understood. The 1993 *HDR* reported very high correlations between HDI indicators, but goes on to argue that there is no automatic link between GNP and human development. Ravallion (1997) has argued that the *HDR*s pay too much attention to trying to explain outliers (such as Sri Lanka which has high life expectancy and low income although on average life expectancy increases with income). Ravallion (1994) points out that those countries with high per capita income tend to do better on social indicators of development. His 1994 study therefore aims to 'inquire as to whether the fact that richer countries tend to have better social indicators implies that economic growth should be centre stage in discussions of how to promote human development'. However if 'social expenditures and the reduction in income poverty are the main forces driving human development, rather than economic growth per se, then policy intervention can play a role in promoting human development independently of the promotion of aggregate influence' (1994: 144). He finds that the impact of economic growth on life expectancy and infant mortality depends on the way that the benefits from growth are distributed across people, in particular on the extent to which it leads to a reduction in poverty and its impact on raising public health expenditures. Similar findings are reported in Anand and Kanbur (1991) and Anand and Ravallion (1993). One caveat he notes however relates to causality: it may be that improved health and reduced income inequality has led to improved economic growth. Bruno, Ravallion, and Squire (1996) support this evidence, suggesting that the higher income inequality the smaller the impact of economic growth on human development.

The impact of growth on other social indicators of development is also examined by other studies. Laderchi (1999) finds that in Peru factors other than money income affect individuals' outcomes, and she argues that this challenges the assumption of a correlation between income and other indicators of development. She calls for greater direct action to affect social development, including public spending for the weakest groups. Laderchi, Saith, Stewart (2003) suggest that micro-economic studies of Indian and Peruvian data show that the overlap between capabilities and monetary measures of poverty are limited, with large proportions of the population being capability poor but not monetary poor, and vice versa.

Sen (1998) suggests that longer life expectancy is associated with improved adult literacy, female education, and lower fertility rates. This is illustrated by the following rank correlations for 'low income' and 'lower middle income' countries with life expectancy: total adult literacy, 0.88; female adult literacy, 0.82; lowness of birth rate, 0.88; lowness of fertility rate, 0.89; and 0.95 with the HDI. As mortality is influenced by the availability of health care, the nature of medical insurance, as well as the availability of social services including basic education, the 'orderliness of urban living' and 'access to modern medical knowledge in rural communities' he also suggests that analysis of mortality data can draw attention to these policy issues. Sen's analysis shows that while mortality rates are correlated with economic growth, economic growth is not the only cause of falling mortality. He illustrates these points with examples from the US and UK. In the UK he reports that age specific death rates fell rapidly over the decade of the Second World War in spite of a decline in total food supply per head. He argues that this was because of an increase in the public delivery of food, which led to a decline in the incidence of severe under nutrition.[13] On the other hand, in the US age-specific mortality rates among blacks have fallen behind those in many LDCs in terms of survival to old age, and Sen identifies lack of national medical coverage as part of the reason for this.

Some researchers have suggested that the relationship between health and income works in the opposite direction. Dasgupta (1997) provides a review of studies that relate nutritional intake and anthropometric measures of health status to wages and income. Some of these studies have suggested that the link between income and food expenditure is weak (Subramanian and Deaton 1996, Behrman and Deolalikar 1987), and hence dispute Dasgupta's thesis that nutrition is linked to wages (via 'efficiency wages'). However, Dasgupta (1997) argues that timing is central to this result and finds that malnutrition, especially in early childhood, scars and that this leads to lower adult wages.

Sen (1997) argues that capability expansion not only has a direct impact on well-being, but may also raise productivity (by expanding human capital), and encourage social development. The expansion of educational opportunities for girls in particular is correlated with reduced gender inequalities, declining fertility rates, and reductions in child mortality. Such associations are also note by Levine *et al.* (2003) who note that child health and educational outcomes are related, while mothers' education is associated with improvements in child health and child nutrition.

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[13] The emergence of the National Health Service also contributed to this change.

6 Aggregation, disparities and dynamics

6.1 Aggregate and individual level data

Social indicators are typically used for one of two purposes, to *identify* those in need, or to provide an *aggregate* indicator of a country' development progress. The MDGs, for example, use aggregate indicators as means of measuring the progress of countries towards attaining human development. Construction of a single index of development may, in this context, be neither appropriate nor possible. Ravallion (1996*a*: 1340) argues that 'implementing a genuinely multi-dimensional approach will often make the welfare rankings of social states ... more difficult, but that fact points to the non-robustness of low dimensional rankings, and it may also have important policy implication in its own right, given that there can be some degree of correspondence between policy instruments and welfare objectives'. He argues that the complexity of the relationships between variables, and their dynamics, however, offer a new line of attack on poverty and escape routes. Where researchers care about *identifying* needy groups, however, the ability to rank observations[14] according to need is important for targeting. Multiple indicator frameworks, which allow the assignment of ranks to families using multidimensional measures of poverty, have been suggested for targeting (see Abul Naga 1994).

Ravallion (1994) has drawn a distinction between the findings of research using nutritional data at an aggregate rather than individual level. Ravallion suggests that studies that have looked at the relationship between consumption and income have found conflicting results in part because they are looking at the wrong indicator variable (inputs rather than outcomes).[15] Ravallion reports however that *aggregate* undernutrition (i.e. the number of individuals with nutritional intake below requirement) is very responsive to income gains.

> In Indonesia reasonable measures of aggregate undernutrition ... have been found to respond quite strongly to income gains, even though intakes at the individual level show relatively small responses. (1994: 138)

The work of Micklewright and Ismail (2001) suggests a similar conclusion. They argue that average measures of child anthropometry may provide a useful guide for the allocation of government funds at a regional level. However, at an individual level they provide a poor guide for targeting as 'genetic source of variation in body size implies that this would result in substantial errors of both inclusion and exclusion (although the same is true of other imperfect measures of well-being)'.

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14 The unit of observation may range from individuals or families to regions.

15 These studies have found income to have little impact on nutritional intake. See Ravallion 1996*a* for a review.

6.2 Disparities

Aggregate indicators of social development may mask large disparities by gender, region, racial group, rural/urban areas or between the rich and poor. The 1993 *HDR* notes that making adjustments for gender has a large impact on the HDI ranking of countries. Similarly, adjusting for inequality can have a large impact (for Brazil they report that adjusting for inequality reduces the HDI by 14 per cent). However, as Ravallion notes, although most indicators can now be relatively easily adjusted for inequality, most are not.

Gender differences in social indicators have been extensively researched (see Sen 1997, Saith and Harriss-White 1998). Achieving a reduction in gender inequality is a priority of the MDGs, and this is reflected in the relatively good availability of disaggregated social indicators of development by gender. Less attention is however paid to other aspects of disparity, including racial and regional differences. One reason for this may be that disaggregation of data is difficult for different population subgroups. This may arise because only aggregated data is available, or because the information required for disaggregation is only available in disparate data sets. Where data availability is poor, Bidani and Ravallion (1997) suggest decomposing socioeconomic indicators, using information on the distribution of the population across sub-groups, to get estimates for different socioeconomic groups. However he goes on to add that the accuracy of sub-group decompositions will depend on the extent to which other relevant variables (correlated with sub-groups shares) have been controlled for. Bidani and Ravallion suggest a model that disaggregates health indicators for the poor and non-poor. They find that life expectancy of the poor[16] is nine years lower than that for the non-poor, and that infant mortality is 50 per cent higher. Moreover there results suggest important implications for policy as they find that social spending has a differential effect on these two groups, with social spending having a smaller impact on the health of the non-poor who are better placed to substitute public for private spending.

Finally, while significant attention has been paid to gender differences in social indicators, less attention has been paid to the welfare of children. Children are rarely used as a unit of analysis, and while child health and education data are commonly recorded, this data is generally regarded as an inadequate measure of well-being (Ben-Arieh *et al.* 2001). Moreover the tendency to regard child literacy rates as a 'flow' variable suggests that the fact that the data is recorded for children is incidental. In assessing the well-being of children, it is also useful to ask whether the conceptualisation of child well-being should differ to that of adults. In particular, the importance of childhood poverty and malnutrition to adult outcomes (or 'scarring') suggest that a separate analysis of the processes of poverty is warranted.

The current focus of social indicators in developing countries has been at the level of the individual (looking at nutritional intake, measures of health, education, employment and income), household (examining income, assets, fertility), and community (reporting data on crime, drugs, infrastructure and services, community and planning, governance). More recent indicators also include dimensions such as social cohesion, social exclusion, social capital and human development and sustainability.

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16 Defined as living on less than $2 per day

6.3 Chronic poverty and income dynamics

A common critique of static indicators of well-being is that they do little to distinguish between those who are transiently poor and chronically (or persistently) poor. Yet distinguishing the chronically poor is critical for targeting assistance to the most needy. As Saith (2001) notes, time has been seen as an increasingly important dimension of poverty within Europe, with policy initiatives increasingly focussing on long-term unemployment and those facing recurring poverty (Saith 2001). However, cross-sectional data can do little to help our understanding of chronic poverty and dynamic approaches to the analysis requiring panel data are increasingly called for. For Hulme (2001), such an approach is particularly important, as it is the multidimensional nature of poverty typically experienced by the chronically poor that prevents their escape. According to Hulme chronic poverty is most common among the young, the old, those facing discrimination (minorities), and those with health problems, and suggests that they should be the subjects of policy focus. Baulch and Masset (2002) find that monetary poverty is less persistent than malnutrition among children and school enrolment among children. Such findings may suggest that, in the absence of panel data, there may be some classes of non-monetary indicators of poverty that perform better at targeting the chronically poor than others.

The increasing availability of panel data in developing countries also presents opportunities for future analysis of poverty dynamics, and will allow improvements in the identification of periods of risk when individuals may be at particular risk of falling into poverty. In developed countries life course events, such as births, deaths, divorce and changes in health have been identified as particular times of risk. Improvements in the quality of data available may help identify further risk factors.

7 Political indicators of development

Political and civil rights have a fundamental impact on individuals' well-being. As Sen has argued, the ability of people to play an active and critical role in their choice of leaders, to express opinions, and to be protected from abuse and other environmental factors is critical in shaping welfare. Indeed, Sen (1999) has gone so far as to claim that the spread of democracy has been the greatest achievement of twentieth century. Recent *HDR*s have also taken increasing note of the impact of freedom and participation on well-being. In the 2002 report they argue that democracies improve economic and social well-being by increasing accountability and political participation, and expanding the choices available to individuals. Where women have no access to the vote, for example, they argue that the choices available to them are restricted and their well-being reduced. Sen, who argues that a famine has never occurred in a democratic country with a free press and regular elections, has also noted the protective power of democracy.

The construction of political indicators of development is however fraught with difficulties. The 2002 HDR notes that the problem with attempting to construct such an indicator lies in the fact that there is no unambiguous, uncontroversial measure of political and civil rights. The 2002 HDR reports a range of subjective and objective measures of political rights. These include indices on civil liberties, political rights, press freedom, voice and accountability, political stability and lack of violence, law and order, rule of law, government effectiveness, and corruption. The objective indicators

included are the years of the last election timing, voter turnout, the year that women got the right to vote, the share of seats held by women in parliament, trade union membership, and the ratification of rights instruments. However, it also goes on to note that:

> Truly democratic governance requires widespread substantive participation—and accountability of people holding power. Objective measures fail to capture such concepts. Subjective measures should, in principle, capture more of what is meant buy the concept of democracy. But being subjective, they are open to disagreement and perception biases. (UNDP 2002: 36)

The 1992 *HDR* had also introduced a freedom index, which was subsequently abandoned because the index was based on judgements and was not therefore quantitatively verifiable. It was also concluded that summarising complex issues into single statistics did not help improve understanding of the sources of inter-country differences in indices, or help explain their change. The disaggregated nature of the subjective data presented in the 2002 report appears to represent some improvement. It should be noted however that data on human rights abuses and other restrictions on freedoms are not reliably recorded. This, together with problems of measurement, leads the *HDR* to conclude that an exclusive focus on quantitative measure of political freedom should not be relied on.

Dasgupta (1990) notes that political rights (the right to participate in the governance of a country) and civil rights (press freedom and judicial independence) are rare in poor countries. He goes on to note that there is a 'temptation to suggest that very poor countries cannot afford the luxury of political and civil rights'. Dasgupta argues these rights are not however luxuries, but crucial in shaping the environment in which people live. He reports that political and civil liberties are positively and significantly correlated with per capita income and its growth, with improvements in infant survival rates and increases in life expectancy. In a later study Dasgupta and Weale (1992) find similar correlations for the worlds poorest countries. These studies however note the important caveat that correlation does not imply causality. Levine and Renelt (1992) test the robustness of the cross-country statistical relationship between long-run average growth, and find that the link between it and 'every other policy indicator' is fragile with small changes in one explanatory variable overturning past results. They find that indices of political stability are not robust in determining growth. The conclusions of the 2002 *HDR* are more muted, arguing that 'statistical studies find that neither authoritarianism nor democracy is a factor in determining either the rate of economic growth or how it is distributed' (UNDP 2002: 4), which they suggest challenges the assumption that there is a trade-off between economic and political rights.

8 Conclusion

The last decade has seen multidimensional indicators of welfare taking increasing precedence over monetary measures of welfare. This shift in focus has been accompanied by greatly improved efforts to collect and monitor socio-economic data. However substantial challenges for the future remain in terms of both conceptual development and data collection and analysis. Kanbur (2002) has argued that while

alternative measures of well-being are increasingly being analysed, they are being examined separately, one-by-one, often within country-specific settings. This increasing micro-economic approach to data analysis leaves development economists with limited scope to draw generalized conclusions. Kanbur concludes that the primary conceptual challenge for the future will be to develop an overall framework for dealing with multidimensional indicators of poverty. However, it may also be argued that attempting to unite data into a single policy goal may be inappropriate. Instead, increasing micro management of targets within countries, and of specific rather than general targets, may be a more appropriate policy response.

Assessing the conceptual appropriateness and improving comparability of socio-economic data is a further key area for future development. In particular the purpose for which data is being collected needs to be made clear, and a distinction should be made between the data needs for aggregate reporting and those for identification of the poor. The data needs for these two purposes may be quite different. For aggregate data, the *HDR* 2000 notes 'neither governments nor the public can wait 20 years to find out whether policies have promoted human development and helped realize human rights'. In order to assess policy impact therefore, socioeconomic indicators must be responsive to policy change and be up-to-date. Thus focal indicator variables should be sensitive and quick to respond to policy change, allowing economic policies to be adjusted appropriately over time. As Sen's (1998) study has shown, this does not mean that indicators should be ruled out too quickly. He shows that although life expectancy may have been predicted to respond slowly to policy change (in the absence of famine or disaster), in Russia life expectancy declined dramatically from 1989 as the availability of medical and health facilities, and the social security system declined.

This paper has also outlined some of the weaknesses in currently reported data. Authors including Atkinson (2002) and Srinivasan (1994) have called for greater transparency and discussion of the limitations of the data, and the most recent HDR have responded to some of these criticisms by deleting from the reports some of the less reliable data. One further way in which the debate could be moved forward would be to pay greater attention to the *precision* of indicators. The reporting of standard errors would allow analysts to be more confident in attaching rankings to countries for individual indicators, and would also guide policy makers by helping focus greater attention on variables whose values are relatively certain. Data needs for targeting purposes may be quite different. In order to ensure data is appropriate for this purpose, ensuring adequate sample sizes and adopting an appropriate sampling framework will be crucial for the identification of the needy. This paper has highlighted the inadequacies of currently existing data. Future research will rely on improvements in data quality.

References

Abul Naga, R. M. (1994), 'Identifying the Poor: A Multiple Indicator Approach', DARP Discussion Paper No. 9, June.

Anand, S. and R. Kanbur (1991), 'Public Policy and Basic Needs Provision: Intervention and Achievement in Sri Lanka', in J. P. Dreze and A. Sen (eds) *The Political Economy of Hunger*, Vol. 3, Oxford: Oxford University Press.

Anand, S. and M. Ravallion (1993), 'Human Development in Poor Countries: On the Role of Private Incomes and Public Services', *Journal of Economic Perspectives*, 7(1): 133-150.

Anand S. and A. Sen (2000), 'Human Development and Economic Sustainability', *World Development*, 28(12): 2029-49.

Atkinson, A. (2002a), 'Data Matter', mimeo, Nuffield College, Oxford.

Atkinson, A. (2002b), 'Multidimensional Deprivation: Contrasting Social Welfare and Counting Approaches', mimeo, Nuffield College Oxford.

Atkinson, A. and F. Bourguignon (1982), 'The Comparison of Multi-Dimensional Distributions of Economic Status', *Review of Economic Studies*, 49: 183-201.

Atkinson, A., B. Cantillion, E. Marlier, and B. Nolan (2002), *Social Indicators: The EU and Social Inclusion*, Oxford: Oxford University Press.

Barro, R. and Lee, J.-W. (1993), 'International Comparisons of Educational Attainment', *Journal of Monetary Economics*, 32(3): 363-94.

Baulch, B. and E. Masset (2002), 'Do Monetary and Non-Monetary Indicators Tell the Same Story about Chronic Poverty? A Study of Vietnam in the 1990s', Working Paper No 17, Chronic Poverty Research Centre, Manchester.

Behrman, J. and A. Deolalikar (1987), 'Will Developing Countries Nutrition Improve with Income? A Case Study form Rural South India', *Journal of Political Economy* 95: 492-507.

Behrman, J. and M. Ronsenzweig (1994), 'Cross Country Data on Education and the Labour Force', *Journal of Development Economics*, 44(1): 147-71.

Ben-Arieh, A., N. H. Kaufan, A. B. Andrews, R. M. George, B. J. Lee, and J. L. Aber (2001), 'Measuring and Monitoring Children's Well-Being', *Social Indicators Research* Vol. 7, Kluwer.

Berger-Schmitt, R. and H.-H. Noll (2000), 'Conceptual Framework and Structure of a European System of Social Indicators', EU Reporting Working Paper No. 9.

Berkman, L. and T. Glass (2000), 'Social Integration, Social Networks, Social Support and Health' in L. Berkman and I. Kawachi (eds) *Social Epidemiology*, Oxford: Oxford University Press: 137-73.

Bidani, B. and M. Ravallion (1997), 'Decomposing Social Indicators Using Distributional Data', *Journal of Econometrics*, 77: 125-139.

Blanchflower, D. and A. Oswald (2000), 'Well-being Over Time in Britain and the USA', NBER Working Paper No. 7487, Cambridge MA: NBER.

Bruno, M., M. Ravallion, and L. Squire (1996), 'Equity and Growth in Developing Countries: Old and New Perspectives on the Policy Issues', Policy Research Working Paper 1563, Washington DC: World Bank.

Chamie, J. (1994) 'Population Databases in Development Analysis', *Journal for Development Economics*, 44(1): 131-146.

Cowell, F. and M. Victoria-Feser (1999), 'Statistical Inference for Welfare Under Complete and Incomplete Information', DARP Discussion Paper no. 47, STICERD, LSE.

Dasgupta, P. (1990), 'Well-being and the Extent of its Realisation in Poor Countries', *The Economic Journal*, 100(Conference): 1-32.

Dasgupta, P. (1997), 'Nutritional Status, Capacity for Work and Poverty Traps', *Journal of Econometrics*, 77: 5-37.

Dasgupta, P. and M. Weale (1992), 'On Measuring the Quality of Life', *World Development*, 20(1): 119-131.

Easterlin, R. (1974), 'Does Economic Growth Improve the Human Lot', in P. A. David and M. W. Reder (eds) *Nations and Households in Economic Growth: Essays in Honor of Moses Abromavitz*, New York, Academic Press.

Easterlin, R. (2003), 'Building a Better Theory of Well-Being', Discussion Paper No. 742, March. Bonn: IZA.

Fields, G. (1994), 'Poverty and Income Distribution: Data for Measuring Poverty and Inequality Changes in the Developing Countries', *Journal of Development Economics*, 44: 87-102.

Freedman, L., M. Wirth, R. Waldman, M. Chowdhury, and A. Rosenfield (2003), 'Background Paper of the Task Force on Child Health and Maternal Health', Washington DC: World Bank.

Griliches, Z (1986) 'Economic Data Issues', in Z. Griliches and M. Intriligator (eds) *Handbook of Econometrics*, Vol. 3, Amsterdam: Elsevier: Chapter 25, 1466-1514.

Grown, C., G. Gupta, and Z. Khan (2003), 'Background Paper of the Task Force on Education and Gender Equality', Washington DC: World Bank.

Hammond, B. (1998) 'Measuring Development Progress', INTERSTAT, October, reported in J. Loup, D. Naudet, and DIAL (2000).

Hulme, D., K. Moore, and A. Shepherd (2001), 'Chronic Poverty: Meanings and Analytical Frameworks', Chronic Poverty Research Centre Working Paper No. 2, Institute of Development Policy and Management, University of Manchester.

ILO (1976) *Employment Growth and Basic Needs: A One World Problem*, ILO, Geneva.

Kanbur, R. (2002), 'Conceptual Change in Poverty and Inequality: One Development Economist's Perspective', Introductory comments at the Cornell Conference on Conceptual Challenges in Poverty and Inequality, April 16-17, http://www.arts.cornell.edu/poverty/kanbur/CCPI.pdf

Laderchi, C. R. (1999), 'The Many Dimensions of Deprivation in Peru: Theoretical Debates and Empirical Evidence', Working Paper 29, Oxford: Queen Elizabeth House.

Laderchi, C. R., R. Saith and F. Stewart (2003), 'Does it Matter that We Don't Agree on the Definition of Poverty? A Comparison of Four Approaches', *Oxford Development Studies*, 31(3): 243-74

Levine, R. and D. Renelt (1992), 'A Sensitivity Analysis of Cross-Country Growth Regressions', *American Economic Review*, 82(4): 942-63.

Levine, R., N. Birdsall, A. Ibraahim and P. Dayal (2003), 'Background Paper of the Task Force on Education and Gender Equality', Washington DC: World Bank.

Loup, J., D. Naudet, and Developpement et Insertion Internationale (DIAL) (2000) 'The State of Human Development Data and Statistical Capacity Building in Developing Countries', Human Development Report Office Occasional Papers, New York.

Micklewright, J. (2002), *Social Exclusion and Children: A European View for the US Debate*, Florence: UNICEF.

Micklewright, J. and S. Ismail (2001), 'What can Child Anthropometry Reveal about living standards and public policy? An Illustration from Central China', *Review of Income and Wealth*, Series 47, Number 1, March.

Ravallion, M. (1994), 'Measuring Social Welfare with and without Poverty Lines,' *American Economic Review*, 84(2): 359-64.

Ravallion, M. (1996a), 'Issues in Measuring and Modelling Poverty', *The Economic Journal*, 106(438): 1328-43.

Ravallion M. (1996b), 'How well can method substitute for data? Five experiments in Policy Analysis' *World Bank Research Observer*, 11(2): 199-221.

Ravallion, M (1997), 'Good and Bad Growth: The Human Development Reports', *World Development*, 25(5): 631-8.

Saith, R. (2001), 'Social Exclusion: the Concept and Application to Developing Countries', Working Paper 72, Oxford: Queen Elizabeth House.

Saith, R. and B. Harriss-White (1998), 'Gender Sensitivity of Well-Being Indicators', Working Paper 10, Oxford: Queen Elizabeth House.

Seers, D. (1972), 'What are we trying to Measure', *Journal of Development Studies*, 8(3): 21-36.

Sen, A. (1999), 'Democracy as a Universal Value', *Journal of Democracy*, 10(3).

Sen, A. (1998), 'Mortality as an Indicator of Economic Success and Failure', *Economic Journal*, 108(January): 1-25.

Sen, A. (1993), 'Capability and Well-being', in M. Nussbaum and A. K. Sen (eds) *The Quality of Life*, Oxford: Clarendon Press.

Sen, A. (1993), 'Positional Objectivity', *Philosophy and Public Affairs*, 22.

Sen, A (1997), 'Editorial: Human Capital and Human Capability', *World Development*, 25(12): 1959-61.

Srinivasan, T. (1981), 'Malnutrition: Some Measurement and Policy Issues', *Journal of Development Economics*, 8: 3-19.

Srinivasan, T. (1994a), 'Data Base for Development Analysis: An Overview', *Journal of Development Economics*, 44: 3-27.

Srinivasan, T. (1994b), 'Human Development: A New Paradigm or Reinvention of the Wheel', *American Economic Review*, 84(2): 238-43.

Srinivasan, T. (1994), 'Destitution: A Discourse', *Journal of Economic Literature*, 32(4): 1842-55.

Strauss, J and D. Thomas (1996), 'Measurement and Mismeasurement of Social Indicators', *American Economic Review (Papers and Proceedings)*, 86(2): 30-4.

Subramanian, S. and A. Deaton (1996), 'The Demand for Food and Calories', *Journal of Political Economy*, 104(1): 133-62.

Sugden, R (1993), 'Welfare, Resources, and Capabilities: A Review of Inequality Reexamined by Amartya Sen', *Journal of Economic Literature*, 31(4): 1947-62.

UNDP (1993, 1997, 2001, 2002), *Human Development Report*, Oxford and New York: Oxford University Press for the United Nations Development Programme.

Veenhoven, R. (2004), 'Subjective Measures of Well-being', WIDER Discussion Paper 2004/07, Helsinki: UNU-WIDER.