

Multidimensional Poverty

Robert Walker
October 2015

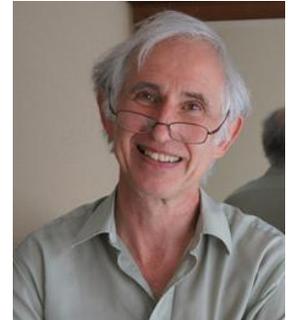
While people generally recognise poverty instantly when they encounter it, they often find difficulty in saying precisely what it is. Experts share the same difficulty and hence definitions frequently reflect what can most readily be measured. Poverty is commonly taken to be low income and, in global debates, is often indexed by income of \$1.25 or less per person per day, although this is soon set to increase to \$1.90.

Poverty is also a political construct. For many policy actors poverty cannot be justified, it must be tackled; others, however, interpret poverty as an unavoidable consequence of economic failure or, even, as a just reward for individual fecklessness. Much of the debate about poverty is framed by politics and fuelled by policy concerns with much research being driven by the desire for policy reform. Taking a dispassionate view of poverty is not easy and much that is taken for granted about the phenomenon is heavily contested.

Definitions

The concept of multidimensional poverty is no exception. It is now generally accepted that poverty is more than just the lack of income; the Open Working Group on the Sustainable Development Goals, for example, talks of ending 'poverty *in all its forms* everywhere' (emphasis added). Nevertheless, there is little agreement about what dimensions of poverty, other than income, should be included. It often seems that there is more discussion about whether poverty should be measured using a multidimensional index or via multiple indicators than about what multidimensional poverty actually is.

Poverty is not just the absence of income, money and/or money-like resources required to meet needs. It is also the multiple consequences of this absence that are simultaneously experienced by people in poverty. Some of these consequences – the non-monetary dimensions of poverty –



Robert Walker is Professor of Social Policy at University of Oxford and Fellow of Green Templeton College. He has published 22 books, over fifty research reports and more than 150 academic articles and chapters on poverty, social security, and research methodology. He has served in an advisory or expert role to over a dozen government and international organizations. Recently he led an international research project focusing on the individual and societal consequences of the shame that people experience as a result of poverty and is currently evaluating the effectiveness of policy initiatives designed to reduce stigma. He is also working with ATD Fourth World designing participatory research on the dimensionality of poverty.

Reading packs are commissioned by the UK Government's Department for International Development (DFID) for independent study and professional development use. They are intended to be thought-provoking introductions to emerging issues and debates within the subject areas they cover. The views expressed are those of the author, and do not necessarily reflect the opinions of GSDRC, its partner agencies or DFID. © DFID Crown Copyright 2015. Licensed under the Open Government Licence: www.nationalarchives.gov.uk/doc/open-government-licence

Suggested citation: Walker, R. (2015). Multidimensional Poverty. GSDRC Professional Development Reading Pack no. 22. Birmingham, UK: University of Birmingham.

serve to prolong poverty and can become causes of its perpetuation. This definition of multidimensional poverty embraces a diverse range of characteristics such as limited financial resources, material deprivation, social isolation, exclusion and powerlessness, and physical and psychological ill-being. However, these characteristics only focus lack of financial resources. Choosing to combine these scores on the different dimensions may characterise various types of poverty (e.g. income poor but asset rich; physically fit but financially stressed) that differ in the severity of their impact on future life chances. Defined in this way poverty is dynamic, with changes in people's 'scores' on each dimension indexing both the nature of the poverty experience and its trajectory.

While the above definition seems intuitive and reflects the accounts of people with direct experience of poverty, it rarely supports estimates of poverty, official or otherwise. This is partly due to data being both difficult and expensive to collect, especially over extended periods of time. As a result, definitions of poverty tend to be framed by available data rather than vice-versa. Practicalities are important too. Monitoring global and national trends may be achieved with comparatively crude indicators compared to those needed to better understand the causes of poverty. Disciplines and traditions also view poverty differently. Some view poverty simply as the absence (or the opposite) of well-being, expressed in terms of low utility, the failure to meet basic needs or constrained opportunities that deny people fulfilment of their potential capability. Others view poverty as a distinctive social experience different from the absence of well-being, a syndrome of structural and personal characteristics associated with lack of income.

Multidimensionality is also viewed differently. Some view dimensions as the fundamental components of poverty that together define what poverty is; if one is omitted the definition is incomplete. However, if one understands these dimensions as manifestations of the complex nature of poverty then this is not necessarily so. In this latter case, the dimensions of poverty are likely to be highly correlated, whereas this would not generally be so if poverty were to be defined as the sum of its component parts. There is unresolved debate about which dimensions to include and how the selection might best be determined.

Measurements

Similarly, there is controversy as to whether it is preferable to devise indices of multidimensional poverty or to rely on multiple indicators. The latter strategy results in double counting if the dimensions are correlated, and denies policymakers the knowledge of how targeting one component of poverty might have an impact on other dimensions. The former strategy of multidimensional indices raises two issues: the appropriate weights to apply to the component dimensions in creating an overall multidimensional poverty 'score'; and the extent to which high deprivation on one dimension might be off-set by lower deprivation on another (substitutability). A variant of the second issue is whether, in order to be considered 'in poverty', a person must be below the poverty threshold on all dimensions (the 'intersection' definition), on just one (the 'union' definition), or with respect to a single composite multidimensional index that merges (and weights) the constituent dimensions. Further, there is part technical, but also normative debate about how best to fix poverty thresholds with regard to individual dimensions and to multidimensional indices.

The *UNDP's Human Poverty Indicator (HPI)* was perhaps the first influential multidimensional approach. The HPI was calculated at national level as the un-weighted sum of three indicators: rates

of mortality (by the age of 40); illiteracy and economic deprivation (measured by access to health care, safe water; and the incidence of child malnourishment). However, driven by data availability, the HPI captured neither the incidence nor nature of multidimensional poverty at an individual level and provided comparable national measures of something closer to low wellbeing than to poverty as defined above.

The *Multidimensional Poverty Index (MPI)* replaced the HPI in 2010 to provide assessments of multidimensional poverty at household level in upwards of 100 countries. The ten indices relate to three dimensions: education, health and living standard and deprivation cut-offs, or thresholds established normatively for each indicator prior to aggregation. Each dimension is arbitrarily accorded equal weight. As with the HPI, the lack of a direct income measure and ambiguous causal relationship between poverty, health and education mean that the MPI is perhaps best viewed as a measure of low wellbeing rather than poverty. The method used to calculate the MPI prevents substitution between dimensions; the fact a household is not deprived on one dimension is not taken to compensate for high deprivation on others.

Understanding the data

Interpreting lists of countries or regions ranked according to indices of multidimensional poverty requires care; it is vital to question how well the component indices capture the true dimensionality of poverty. While it may be tempting to treat the individual components as criteria for targeting policies or as potential performance targets, this can be inappropriate if they are merely convenient indices that correlate with more complex phenomena. International rankings are likely to be sensitive to the weights assigned to each dimension, and a country's rank may correspondingly vary according to the dimension chosen.

Similar issues – referred to as ‘dominance’ in the technical literature – are relevant when interpreting changes over time and in seeking to attribute change to individual dimensions of poverty or even to particular policies. Although weights are objectively likely to vary over time and across countries, they are typically fixed arbitrarily to facilitate comparison even though this limits the ability of policymakers to exploit the interrelatedness of dimensions in designing and targeting policy. The fact that such important technical considerations are often buried in mathematics and/or in footnotes may be a reason to complement multidimensional measures with a ‘dashboard’ of component indices. Certainly there is scope for improving the presentation of statistical indicators to fuel informed public debate and policy discourse about the dimensionality of poverty

Contrasting with approaches that seek comparable national estimates of multidimensional poverty rates are methods seeking instead to explore its structure, nature and extent. These latter methods can be divided into two:

- Methods which intend to identify the dimensionality of poverty from data such as *Latent Class Analysis (LCA)* which looks for groups of people within a population who share the same combination of deprivations. The groups identified will differ according to the variables included in the analysis but the dimensions of poverty that emerge and the groups formed are empirically determined – data driven – rather than normatively established.
- Methods which test theories against data. With *Structural Equation Modelling (SEM)*, the dimensions of poverty are specified in advance, ideally on the basis of theoretical reasoning,

and their existence is then tested against reality as captured by the available data. Weights assigned to dimensions are determined empirically and substitution between them is explicit, but normative decisions are still required in order to establish a multidimensional poverty threshold.

Testing a prior understanding of poverty against empirical data is generally thought to be a more secure approach than fishing in data to find out what poverty is. However, the lack of agreement as to the nature of multidimensional poverty means that the choice of dimensions is often contentious, and can lead to the possibility of redundancy and a confusion of concepts. It is a moot point who is best placed to determine the dimensions of poverty: people with direct experience of poverty; policy makers and analysts – the elite; or citizens without experience of poverty whose goodwill and resources need to be tapped if poverty is to be sustainably addressed.

Key readings

The readings chosen discuss the competing rationales and operation of the concept of multidimensional poverty. It would be premature to suggest a preferred approach and the reader should be both sceptical and enquiring. Where the readings are chapters from books, readers may find the other chapters also to be of interest. Please note, some of these readings are not openly accessible.

Reading 1: Walker, R. (2014). Poverty research and measurement. In R. Walker, *The Shame of Poverty* (pp. 15-31). Oxford: Oxford University Press.
<http://ukcatalogue.oup.com/product/9780199684823.do>

By way of introduction, this book chapter discusses the various conceptualisations of poverty, including multidimensionality, and briefly summarises what is known about poverty globally. It emphasises the political construction of poverty and the ideological bases of some of the various measures. The book from which the chapter is extracted focuses on one dimension of poverty, the shame that Amartya Sen argues lies at the absolutist core of poverty, and explores how this is implicated in the dynamics of poverty.

Reading 2: Anand, S. & Sen, A. (1997). Concepts of human development and poverty: A multidimensional perspective. *Human Development Report 1997*. Papers: Poverty and Human Development. New York: United Nations Development Programme.
<http://clasarchive.berkeley.edu/Academics/courses/center/fall2007/sehnbruch/UNDP%20Anand%20and%20Sen%20Concepts%20of%20HD%201997.pdf>

In this ground-breaking contribution that accompanied and justified the introduction of the Human Poverty Index (HPI), the authors summarise the criticisms of poverty measurement based exclusively on income and elucidate the reasons for adopting a multidimensional approach. The HPI is one of the first examples of a multidimensional poverty index although it is defined at an aggregate country level. This reading includes a technical appendix explaining the properties of the measure.

Reading 3: Alkire, S. & Santos, M. E. (2014). Measuring acute poverty in the developing world: Robustness and scope of the multidimensional poverty index. *World Development*, 59, 251–274.
<http://www.sciencedirect.com/science/article/pii/S0305750X14000278#>.
An alternative open access version is available at <http://www.ophi.org.uk/wp-content/uploads/ophi-wp-59.pdf>

This article succinctly describes the highly influential Multidimensional Poverty Index (MPI) and demonstrates its use. It additionally offers a detailed justification for the underlying adjusted head count ratio methodology including some evidence of its robustness. The reader is encouraged to reflect on what the MPI fails to achieve, its contribution and also its potential for further development.

Reading 4: Nolan, B. & Whelan, C. T. (2007). On the multidimensionality of poverty and social exclusion. In S. P. Jenkins and J. Micklewright (eds.), *Inequality and poverty re-examined* (pp. 146-165). Oxford: Oxford University Press.
<http://ukcatalogue.oup.com/product/9780199218110.do>

The authors in this book chapter first set out the arguments for considering poverty as a multidimensional concept and then use latent class analysis to identify the population at risk on grounds of low income, material deprivation and the perceived difficulty of making ends meet, first in Ireland and then across the European Union. They conclude that the dimensions of disadvantage are additive rather than common manifestations of an underlying condition, and that the extent of multiple deprivation is 'quite limited' in Europe. The reader may wish to consider the suitability of the indicators chosen and the extent to which the analysis lives up to the promise offered by their initial review of multidimensionality.

Reading 5: Wagle, U. (2008). Multidimensional approach to poverty. In U. Wagle, *Multidimensional poverty measurement: Concepts and applications* (pp. 55-85). New York: Springer.
<http://www.springer.com/gp/book/9780387758749>

This book chapter presents the conceptualisation and operationalisation of a multidimensional model of poverty that integrates ideas of economic well-being, capability and social inclusion as separate, yet related, dimensions. The technical section on operationalisation, which introduces structural equation modelling (SEM) and uses matrix algebra, could be omitted by readers who find this style of exposition difficult; the virtues of the technique are summarised briefly on pages 84-5. The analysis is driven by a theoretical understanding of poverty not by data, but readers may wish to consider whether the unification of the many sub-concepts as dimensions is logical. Elsewhere in the book the basic model is tested empirically in the context of Kathmandu (Nepal) and the United States resulting in different, though related, structures of poverty – beware, though, the computer generated diagrams unduly exaggerate the differences.

Reading 6: Ningaye, P., Alexi, T. Y. & Virginie, T. F. (2013). Multi-poverty in Cameroon: A structural equation modeling approach. *Social Indicators Research*, 113(1), 159–181.
<http://link.springer.com/article/10.1007%2Fs11205-012-0087-8>

This article is perhaps best considered to be supplementary reading since it is not easy to follow. However, its strength is that it seeks to explore the nature of multidimensional poverty using structural equation modelling as in the previous reading but in the context of development, namely in Cameroon. It proposes five dimensions of poverty and, having determined that lack of access to health services is the most prevalent form of poverty irrespective of the level at which the poverty threshold is pitched, explores how their importance varies regionally and between urban and rural areas. The article also demonstrates that in reality poverty dimensions are related and shows, albeit via statistical simulation, that policy effectiveness could be enhanced by exploiting this phenomenon in the regional targeting of interventions. Some readers may initially wish to skip the more technical material (especially Sections 3 and 4) and focus on the study results in Section 5.

Reading 7: Tomlinson, M. & Walker, R. (2009). Poverty and childhood wellbeing. In M. Tomlinson and R. Walker, *Coping with complexity: Child and adult poverty* (pp. 71-86). London: Child Poverty Action Group.
http://www.cpag.org.uk/sites/default/files/coping_with_complexity.pdf

This book chapter is unusual in that it begins to question whether different forms of poverty, characterised by an individual's scores on different dimensions, might have different consequences and could be amenable to targeted policy responses. It shows that, in Britain, various aspects of child wellbeing are differentially associated with specific dimensions of household poverty. The

analysis which is suggestive rather than definitive, with identified associations not necessarily causal (the data are cross-sectional relating to a single year), and the analysis of potential policy actions derived from running statistical models 'backwards' not from policy experiments. Elsewhere in the book, the analysts investigate the dynamics of multidimensional poverty exploring how the poverty that people experience can change over time.

Reading 8: Ravallion, M. (2010). *Mashup Indices of Development*. Policy Research Working Paper No. 5432. Washington DC: World Bank.

<http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-5432>

This is a working paper on multidimensionality that takes the Multidimensional Poverty Index (MPI) as a critical example. While acknowledging that poverty is multidimensional, the author is sceptical about the added value of employing multidimensional indicators in lieu of series of unidimensional ones. The reader should bear in mind that this is a polemical piece that is eclectic in its coverage and not necessarily conclude from it that all multidimensional indicators are fatally flawed. However, the author's plea for better theory and clearer thinking are points well taken.

Questions to guide reading

1. What distinguishes poverty from low well-being? Why is this distinction important?
2. Why might it be better to think of poverty in multidimensional terms rather than simply as a shortfall in income? Are there occasions when it might be legitimate to ignore the multidimensionality of poverty – or, indeed, to deny it?
3. What dimensions would you include in a measure of poverty and why? How important is it to include indices relating to dimensions such as exclusion, powerlessness, stigma, social isolation and physical and psychological ill-being alongside income and material deprivation?
4. Consider whether it is preferable to use a single multidimensional index of poverty or to employ multiple indicators of poverty? Reflect on whether your answer would differ according to whether you are interested in better understanding the nature and causes of poverty, designing policies to address poverty or monitoring the effectiveness of anti-poverty policies that have been implemented.
5. What are the competing advantages and disadvantages of the differing methods of measuring multidimensional poverty – for example, the adjusted head count ratio used in the Multidimensional Poverty Index (MPI), latent class analysis and structural equational modelling (SEM)?
6. Should the conceptualisation of multidimensional poverty vary as the unit of analysis shifts from the individual to the household, neighbourhood and nation state and, if so, why and how?
7. What are the dangers of taking an indicator of multidimensional poverty at face value?
8. Consider why it is important never to ignore time and timing in defining and measuring multidimensional poverty. Reflect on why it is that time is so frequently forgotten in discussions of poverty and think about the consequences of this omission.
9. Examine the contention that choosing the dimensions of poverty is too important a matter to be left to the experts.