Three perspectives on the mismatch between measures of material poverty

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Introduction

The two most prominent measures of material poverty within contemporary European poverty analysis are low income and material deprivation. Both feature in the European Union's overarching poverty reduction target, which seeks to remove 20 million people from poverty and exclusion by 2020. However, it is by now well-known that there is a significant 'mismatch' between these two measures: that they identify substantially different people as being poor.

In this research note, I seek to shed new light on this familiar problem. In particular, I seek to demonstrate that there are at least *three ways* to understand the mismatch between low income and material deprivation; that each of these perspectives tells a different story, and that they reflect three problems in identifying people in poverty, which is a task of considerable sociological importance and policy relevance.

The literature to-date has focused overwhelmingly on the extent to which low income and material deprivation identify different *individuals* or *households* as being poor. In contrast, I broaden the analysis by comparing three perspectives – the first perspective focuses on the identification of poor individuals or households; the second on identifying population subgroups at particular risk of material poverty; and the third on identifying trends in material poverty over time. Drawing on data from the British Household Panel Survey, I show that while low income and material deprivation identify very different households as being poor, and display distinct trends over time, in many cases they identify the same *groups* at being at risk of material poverty.

The two measures of material poverty

Peter Townsend's earliest work on the subject of poverty appeared in the pages of this *Journal* (e.g. Townsend, 1954; 1962; see Rosenfeld, 2010, for a recent discussion); work in which Townsend

outlined his relative deprivation approach, which has become dominant in contemporary European poverty analysis. Townsend pioneered the use of indicators of material deprivation in poverty measurement, using the deprivation index in his classic study, *Poverty in the United Kingdom* (1979), to calibrate an income poverty threshold, below which participation in social activities was, he suggested, rapidly withdrawn.

However, Townsend's study was not long published before it was observed that many of those on low incomes did not, in fact, experience material deprivation, while some deprivation was experienced by respondents with incomes far above Townsend's poverty line (Piachaud, 1981). This was the 'mismatch' between low income and material deprivation, which over the past three decades has been observed with remarkable consistency (e.g. Bradshaw and Finch, 2003), both over time and place. Many possible explanations for this mismatch have been suggested, including *inter alia* measurement error; that income may be a bad proxy for total household resources; that the deprivation items may not be representative of a broader set of lifestyle/consumption indicators; and that cross-sectional measures of either income and deprivation may not reflect longer-term experiences.

Moreover, in conceptual terms, there has in recent years been a shift towards understanding poverty as being multidimensional (e.g. Nolan and Whelan, 2011; Hick, 2012a). However, even if one accepts that poverty analysis should adopt a multidimensional perspective, successfully identifying people experiencing material dimensions of poverty continues to be of crucial importance.

The mismatch between low income and material deprivation matters because it raises real – and foundational – questions about how to identify people experiencing material poverty. One assumption which often underpins poverty analysis is that information about one of the measures (e.g. low income) can tell us something about the other (e.g. material deprivation). But the mismatch between these measures raises questions about whether such inferences can be drawn.

Rather than seeing low income and material deprivation as two ways to operationalise the same concept, however, there is an alternative argument which suggests that low income and material deprivation are not just two different measures, but that they relate to two different *concepts* of poverty – one focusing on households whose resources fall below a certain point (which sometimes results in low living standards), and another which focuses on households who experience low living standards (which is sometimes caused by low income) (Ringen, 1987; Berthoud and Bryan, 2011).

However, the existing literature focuses overwhelmingly on individuals or households as the unit of analysis, whereas I wish to argue that a plurality of perspectives is required in order to more fully understand the relationship between low income and material deprivation measures of material poverty.

Data

The analysis presented in this research note draws on data from the British Household Panel Survey (hereafter BHPS). The BHPS was a household survey which interviewed adult members (aged 16 and over) living in sampled households on an annual basis. The survey commenced in 1991 and in 2009/10 was subsumed into the larger Understanding Society survey. Perspectives One and Two draw on cross-sectional data from the 2006/7 wave, while Perspective Three focuses on poverty trends over time and draws on data between 1996/7 and 2006/7.

The measure of material deprivation employed in Perspectives One and Two is based on the nine deprivation indicators included in the 2006/7 wave of the BHPS, which are presented in Table 1. The measure employed in Perspective Three draws on the six deprivation indicators which were included in each wave between 1996/7 and 2006/7 – the first six indicators listed in Table 1. In each case, respondents are asked, first, whether they have each of the items and, second, if they do not, whether this is because of a lack of resources, following Piachaud's (1981) critique of the work of Townsend (this second question is known as the 'enforced lack' criterion). Households are classified as being materially deprived when they report an 'enforced lack' of one or more deprivation items.

The income variable that has been selected is an equivalised, post taxes and transfers, before housing costs (BHC) measure of current (i.e. weekly) income (Whhnetde2). This employs a Modified OECD equivalence scale, which allocates a weight of 1 for the first adult, 0.5 for additional adults and 0.3 for each child. Households are classified as being in low income where their income falls below 60 per cent of the median, which in 2006/7 equates to equivalised £170.99 per week.

The analysis in Perspectives One and Two is a completed case analysis of 3,551 households and, where appropriate, 2,294 households where the household head is aged under 60. Perspective Three uses all available cases (with positive household weights) in each year between 1996/7 and 2006/7. The data are in each case weighted using the cross-sectional household weight (Wxhwght).

Analysis

Table 1 shows the percentage of households who experience an enforced lack of each of the nine deprivation items contained in the BHPS, as well as those who experience low income and material deprivation using our overall measures (using the thresholds discussed above). The percentage of households experiencing an enforced lack of the individual deprivation items varies substantially depending on the item in question while, for the overall measures, 16.7 per cent of households experience an enforced lack of one or more deprivation items and 21.9 per cent of households fall below the low income line.

Table 1: Percentage of households experiencing enforced lack of deprivation items, and overall low income and material deprivation measures

material deprivation items	%
annual holiday	11.2
replace furniture	6.9
visitors once a month	2.9
new, not second hand, clothes	2.5
eat meat on alternate days	1.5
keep house warm	0.7
household contents insurance	5.2
house well decorated	4.3
two pairs of strong shoes	1.3
overall measures	
low income (60% median)	21.9
1+ material deprivation items	16.7

Source: BHPS 2006/7, household weights

Perspective One – Poor households

The intuitive – and widely held – assumption is that the households who experience a low income are also those who are deprived. But Tables 2 and 3 show that this is not the case. While 21.9 per cent of households fall below the low income line, fewer than one-third of these, 6.4 per cent, also experience material deprivation (given that fewer households experience material deprivation than income poverty, the maximum proportion of those on low income who could experience material deprivation using these measures would be three-quarters). Low income and material deprivation thus identify significantly different people as being poor: this is the familiar mismatch between low income and material deprivation.

The experience of material deprivation *is* related to income, but in a relatively weak way (Nolan and Whelan, 2011). As can be seen in Table 3, the probability of deprivation never rises above one-third, even in the bottom income decile, and some deprivation is experienced even by households in the upper end of the income distribution.

Table 2. Four-way material poverty classification

	Not materially deprived	Materially deprived
Not income poor	67.9	10.2
Income poor	15.4	6.4

Source: BHPS 2006/7, household weights

Table 3. Percentage of households experiencing material deprivation by household income deciles

ssion	bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	top		all
deprived (%)	32.2	27.1	23.5	22.9	18.8	12.9	11.6	6.4	3.6	3.8		16.7

Source: BHPS 2006/7, household weights

Perspective Two – Groups at risk of material poverty

But adopting individuals or households as the unit of analysis is just one perspective. A second would be to see whether these measures point to different *groups* as displaying pronounced risks of poverty.

Figure 1 plots the percentage of 54 sub-groups who experience low income (vertical axis) and material deprivation (horizontal axis) respectively. These groups reflect the variables: age and health status of household head; housing tenure; number of household members in employment; type of employment (i.e. whether any household employment is self-employment, or all employed members are employees); household composition; educational qualifications, marital status, sex, and occupational class of head of household; whether any household member is disabled; household size, and region. These groups have been selected to reflect a range of social and economic characteristics.

In the left-hand figure, which includes all households, we can see a clear relationship between rates of low income and material deprivation for the different groups (correlation = .54). But there is also some dispersion around the trend line, and amongst this dispersion are some groups who are known to display very different risks of low income and material deprivation – in particular, respondents who are self-employed and older respondents (e.g. Hick, 2013). Indeed, the latter pose a particular difficulty, since a number of other sub-groups contain high concentrations of older people (e.g. owner occupiers without mortgages; workless households; widow/ers, etc.).

That there are discrepancies between the low income and material deprivation rates of self-employed respondents and older people is by now relatively well-understood. Both groups display (relatively) high probabilities of experiencing low income, given their (relatively) low probability of experiencing material deprivation. For self-employed respondents, suspicion is typically levelled at the income indicator (e.g. Nolan and Whelan, 2011: 113); in contrast, for older people it is more often pointed at the deprivation indicators, since older respondents are less likely to report the absence of deprivation items as being because of an 'enforced lack' than their younger counterparts, despite their lower average incomes (e.g. McKay, 2004; Hick, 2013).

To account for this, in the right-hand figure we focus only on those households where the household head is under sixty years of age (which leaves us with fifty-two subgroups). The relationship between the average low income and material deprivation rates is now very much

stronger – the correlation between the two measures is .88. So while low income and material deprivation identify very different households as being poor, on many occasions they identify the same *groups* as being at risk of material poverty (see also Devicienti *et al.*, 2012), especially when older people are excluded from the analysis. For example, workless households, households where the head is in very poor health and lone parent households experience an elevated rate of material poverty irrespective of the measure of material poverty employed (see especially the right-hand figure).

Figure 1. Scatterplot of rates of low income and material deprivation for different population sub-groups, all households, and where head of household is under age 60
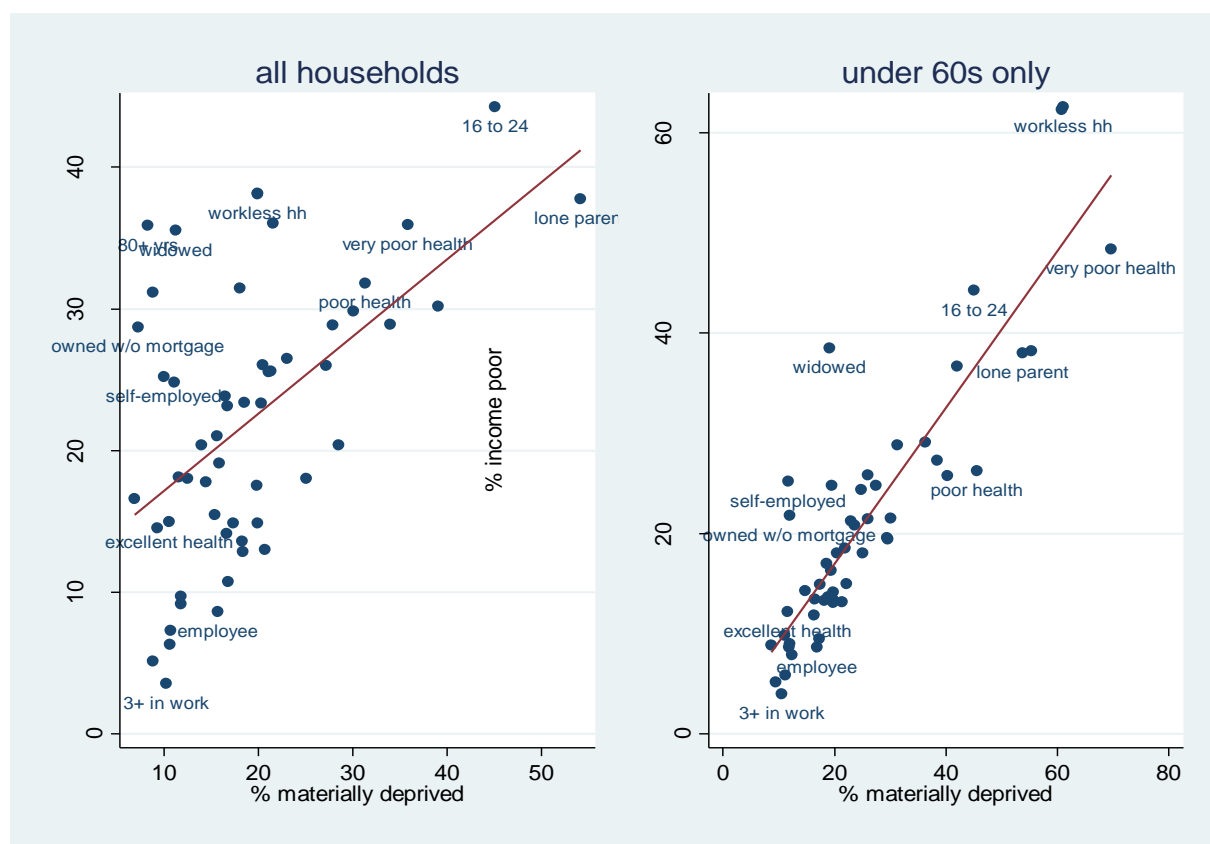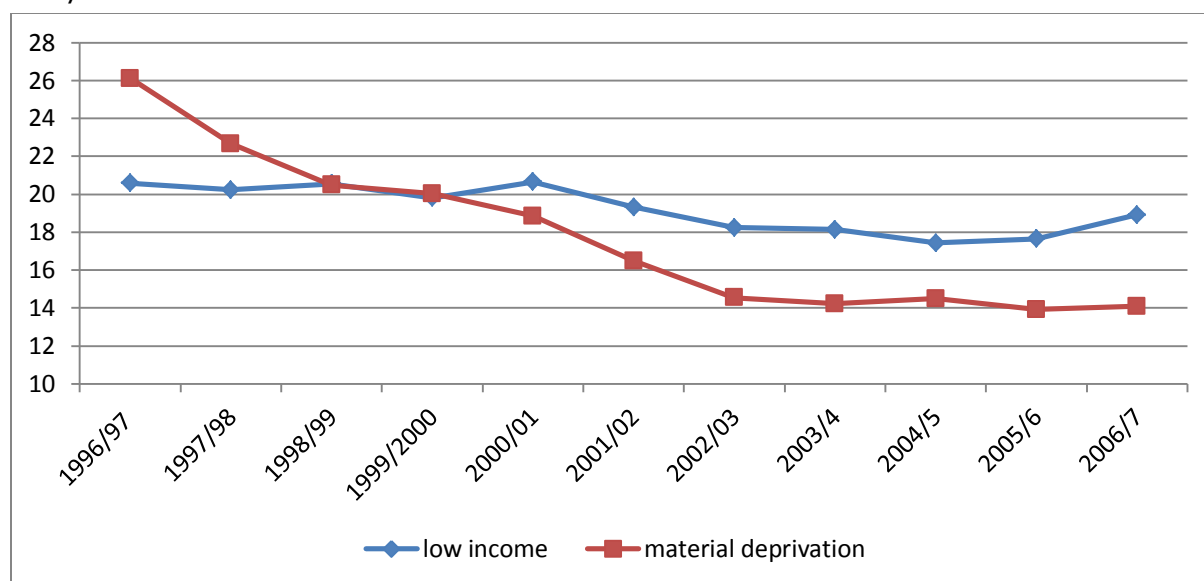

Source: BHPS 2006/7, household weights

Perspective Three – Trend in material poverty over time

The third perspective focuses on the trend in material poverty over time. This is of considerable policy importance given the desire of policymakers and, indeed, the wider public to know whether poverty is rising or falling. Do low income and material deprivation display the same trends in material poverty?

The short answer is: no. While the rate of material deprivation fell from 26.1 per cent in 1996/7 (95% CI: 24.7 – 27.5) to 14.1 per cent in 2006/7 (CI: 12.8 – 15.3), the percentage of households experiencing low income was far more consistent, falling from 20.6 per cent to 18.9 per cent of households between 1996/7 and 2006/7 (differences n.s.: 1996/7 CI: 19.3-21.9; 2006/7 CI: 17.5 – 20.3). Thus, our understanding of whether material poverty is falling or not is very much dependent on the measure we employ, and there is a considerable inconsistency between the trends in the two measures.

Figure 2: Trends in material deprivation and income poverty in Great Britain, 1996/7 to 2006/7

Source: BHPS 1996/7 – 2006/7, repeated cross-sections, household weights

Sensitivity analysis

It may legitimately be asked whether the findings from each perspective are substantially influenced by the particular income threshold adopted or the inclusion of particular material deprivation items. To assess this, the analysis was repeated using both the 50 and 70 per cent median income thresholds, with a material deprivation measure with 'annual holiday' and 'replace furniture' – the two most prevalent items – omitted and, subsequently, for each of the indicators individually (this analysis is not presented here for reasons of brevity, but is available from the author). To some extent inevitably, the material deprivation indicators which are more prevalent (see Table 1) play an important role in determining the overall material deprivation trend presented in Perspectives One and Three. Nonetheless, in each of the three perspectives the findings are robust to the selection of alternative income thresholds or the exclusion of particular deprivation items.

Conclusion

In this research note, I have argued that the 'mismatch' between low income and material deprivation, which is now an established finding within the field of poverty analysis, should be seen in *plural* and not *singular* terms. The mismatch between the two measures of material poverty creates problems in identifying people in poverty, and the three perspectives advanced here reflect three distinct problems of identification.

I have shown that while low income and material deprivation measures identify very different households as being poor, and display very different trends over time, in many cases they identify the same *groups* as being at risk – and where this picture diverges, as it does with households with self-employed members and with older people, the deviations are by now relatively well-known, if non-trivial. We can therefore have some confidence in our ability to identify the groups with a pronounced risk of material poverty.

For the two other perspectives, there remains the question as to which of the two measures is the more valid, and here I do not claim to provide a conclusive answer; only to offer some observations, drawing on the existing literature. Recent evidence has suggested that it is deprivation indicators which are particularly useful in identifying individuals who are at risk of multiple forms of deprivation – dimensions we might expect to be associated with material poverty, such as physical and mental ill-health, housing deprivation, subjective wellbeing, autonomy and self-reported financial stress, if not unemployment (Hick, 2012b; see also Nolan and Whelan, 2011). Further research is required to validate these findings, but they suggest that deprivation indicators are relatively successful in identifying vulnerable individuals and households.

Conversely, we may expect deprivation indicators to be less useful in providing a trend in material poverty over time. While the 60 per cent of median income measure is often criticised for being *arbitrary* (e.g. Spicker, 2012), at least over time it delivers a trend broadly in line with what would be expected from the Townsendian perspective (i.e. the poverty line rises in line with household incomes and not just prices). The claim in favour of deprivation indicators, on the other hand, is typically that they represent 'socially perceived necessities' (e.g. Mack and Lansley, 1985), thus appearing to overcome the challenge of arbitrariness. But the use of a fixed set of deprivation indicators over time will fail to account for changes in need over a period – an unintended outcome of such a measurement approach. These contrary arguments suggest that it cannot be assumed that an advantage in terms of one type of identification (e.g. identifying vulnerable households) would favour the same measure of material poverty as that of another (e.g. identifying trends in material poverty over time).

The relationship – or 'mismatch' – between low income and material deprivation measures of material poverty should be understood in *plural* rather than *singular* terms, reflecting the identification of poor households, groups with elevated risks of material poverty and trends in material poverty

over time. These three perspectives, taken together, can allow one to more clearly understand the nature of the two measures, and their ability to identify people experiencing material poverty.

Acknowledgements

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