Poverty and the Psychosocial Competencies of Children: Evidence from the Young Lives Sample in Four Developing Countries

Stefan Dercon
University of Oxford

Pramila Krishnan
University of Cambridge

Abstract

Using unique data from four developing countries, this paper explores the relationship between material poverty and the psychosocial competencies of children. Within a cohort of 12-year-olds, we find that measures of self-efficacy, sense of inclusion, self-esteem and educational aspirations all correlate with measures of the material well-being of the family in which they are growing up. In short, material circumstances shape these wider dimensions of child well-being. As other evidence has shown, these measures of psychosocial competencies reflect important life skills that affect them as adults and shape their future socio-economic status. This suggests a mechanism by which poverty may be transmitted across generations. In addition, our evidence shows how a caregiver's education and school participation affects children's psychosocial competencies. This may indicate a possible means of overcoming such transmission of poverty over time.

Keywords: poverty, psychosocial competencies, cohort study

Introduction

Poverty has many dimensions and this is perhaps particularly true of child poverty. Simple material measures of poverty, such as the wealth of the family in which the child is growing up, omit key dimensions that effect the children's experience of poverty as well as the opportunities they will have later in life. At the same time, the lack of comparable data means that the measurement of child poverty in large scale data sets tends to be restricted to a relatively small number of specific indicators, usually related to material poverty, nutrition and access to basic services (e.g. Gordon et al. 2003). Other crucial dimensions of child poverty and the way it shapes children for later life remain largely unmeasured in standard quantitative data sources. This is despite the increased emphasis put on life skills that help children to "make informed decisions, solve problems, think critically and creatively, communicate effectively, build healthy relationships, empathize with others and cope with and manage their lives in a healthy and productive manner" (UNESCO 2007).

In this paper we try to address this gap by linking standard indicators of material circumstances and the context in which children are growing up to a number of indicators reflecting specific psychosocial competencies. These are collected in a comparable way across four countries using relatively large data sets. For this purpose, we focus on four survey-based indicators, each reflecting different competencies, that have been recognized as reflecting important non-cognitive dimensions of adolescent development and that correlate well with future social and economic opportunities. In particular, we focus on measures of self-esteem, sense of inclusion, agency and aspirations. We do not claim that this set of competencies offers a complete description of social and psychological development—rather, it is an opportunistic range of concepts for which sensible survey-based indicators can be derived.

We have data from two rounds of the Young Lives project—a long-term research project into child poverty—for a cohort of 4,000 children who were 12 years of age in the second round of interviews. We will not compare indicators across the countries, as we cannot claim any cross-country or cross-cultural validity in the way these measures have been collected, and the sample selection process differs somewhat between the countries involved. Nevertheless, as will be argued below, the samples still allow us to make comparisons across countries in terms of whether material poverty and other indicators relevant to social and material deprivation correlate with these psychosocial competencies in a similar way across contexts.

In the next section, we introduce the Young Lives data. We follow this with a brief review of the psychosocial concepts we utilize, and a discussion of the relevant correlates and the method used to explore them statistically. We then present the statistical analysis and its interpretation, followed by some brief conclusions.

The Young Lives Data

Young Lives is a long-term research program investigating the changing nature of childhood poverty in four developing countries—Ethiopia, Peru, India (the state of

Andhra Pradesh) and Vietnam—over 15 years.[1] The study follows two groups of children in each country: 2,000 children who were born in 2001-2 and 1,000 children who were born in 1994-5.[2] The younger children are being tracked from infancy to their mid-teens and the older children to adulthood, when some will become parents themselves. It collects a wealth of information not only about their material and social circumstances, but also their perspectives on their lives and aspirations for the future, set against the environmental and social realities of their communities.

Thus far, two rounds of data have been collected and are ready for analysis: a first round in 2002 and one in 2006. In this paper, we only use the data of the older cohort, as the younger cohort was still too young in the most recent round to be interviewed directly themselves. For the older cohort, detailed data is available from the children on their perceptions and experiences, and a great deal of socio-economic data is available from their main care givers, allowing us a unique insight into the factors shaping these children's lives.

The samples were chosen to reflect the diversity of children present in the country, with a distinct pro-poor bias. Two-stage sampling was used: first, a large number of clusters were selected and then a random sample of children of the particular age group in the cluster was chosen. While the samples (with the exception of Peru) were not selected to be statistically representative of the country or state as a whole, subsequent analysis has shown that the data reflect the diversity of children in the country across a wide number of variables very well indeed.[3] Attrition in the sample is exceptionally low: only 1.4 percent of the children were lost or dropped out between the two rounds on average, with the Peru sample facing attrition of 3.5 percent and the Vietnam sample only 0.5 percent. This is one of the lowest ever attrition rates of any longitudinal survey of this scale.

The two rounds of data used in this paper are quite distinct. The first round, the baseline, was a relatively short instrument, capturing living conditions of care givers and children without detailed child-specific interviews. During the second round, the children, who had reached about 12 years of age, answered detailed questions, including some that assessed psychosocial competencies.

Psychosocial Competencies: Measurement and Validation
Psychosocial competencies are captured by measures of agency and self-efficacy, self-esteem, aspirations and respect. With the exception of the aspirations measures, they all are constructs based on respondents' degree of agreement or disagreement with a number of statements. The degree of agreement is measured on a 4-point Likert scale that ranges from strong agreement to strong disagreement.[4] All the statements were drawn from the educational psychology

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[1] In the rest of the paper, we will refer to data as being from India, but it should be understood that the data only apply to one of its many states.
[2] In the case of Peru, only 700 children of the older cohort instead of 1,000 were included due to last-minute budgetary problems.
[3] See the technical notes on www.younglives.org.uk.
[4] In the case of Peru, and after piloting, the survey team settled on a 3-point scale.

literature, although they were adapted and extensively tested during piloting for use with children across different cultures. In Appendix 1, we discuss how we developed our survey instruments and outline issues regarding measurement.

The first concept used is self-efficacy, understood as a child's sense of agency or mastery. It is related to the concept of "locus of control," which concerns one's beliefs about the link between one's behavior and its consequences (Rotter 1966). Individuals may believe that outcomes are due to their own efforts or are the result of luck, fate or the intervention of others. Those who believe that outcomes are due to their own efforts have a high "internal" locus of control (Maddux 1991). Locus of control is thought to form during childhood and stabilize during adolescence (Sherman 1984). Carton and Nowicki (1994) review the research on the antecedents of individual differences in locus of control. They report, first, that parents appear to influence children's development of locus of control; consistent parental use of reward and punishment as well as parental encouragement of autonomy are associated with the development of internal locus of control. Second, experiencing stressful life events, particularly if disruptive and experienced when young, is associated with the development of external locus of control. Third, children with internal locus of control have parents who are more nurturing, emotionally supportive and warm. Skinner, Zimmer-Gembeck and Connell (1998) find that locus of control development is determined by parental involvement, family environment, teacher warmth and academic performance. Although the difference is not easy to pin down, self-efficacy is a related but more specific concept (Bandura 1977). Locus of control concerns general beliefs about control across situations, while self-efficacy concerns beliefs in one's capability to act so as to achieve desired outcomes. For example, a musician may believe that much daily practice would result in an improved performance, but not believe that she is capable of practicing that hard.

Locus of control or self-efficacy measures have been found to be associated with a variety of choices people make in their lives, including vocational and career decisions (Maddux 1991). Individuals who have a high internal locus of control are generally more active in trying to pursue their goals and improve their lives (Rotter 1966). Furthermore, through ingenuity and perseverance, they often figure out ways of exercising some measure of control, even in situations where there are limited opportunities and many constraints (Bandura 1989). There is considerable evidence for the relationship between self-efficacy and outcomes in terms of academic achievement, occupational achievement, and general physical and mental well-being (see Bandura 1997; Swartzer and Fuchs 1996). Coleman and DeLeire (2003) find that locus of control affects investment in skills and education, and hence earnings.

A large number of related, internally validated instruments are used to measure self-efficacy. These are based on aggregations of agreement and disagreement with specific statements concerning one's ability to affect outcomes or cope with a variety of stressors (Schwarzer and Fuchs 1996; Lambe 2006). In the case of Young Lives, the measure used is based on three statements related to self-efficacy: "If I try hard I can improve my situation in life," "I like to make plans for

my future studies and work," and "If I study hard at school I will be rewarded by a better job in the future." In this paper, we use the answers to these questions to construct an index of the average score on these different items, after first standardizing each item with mean= 0 and variance= 1. In statistical terms, this means we suppose the existence of a latent variable that cannot be directly measured but which we try to approximate via an index of different dimensions related to agency and self-efficacy.

A second concept refers to self-esteem and pride. Here, the focus is not on ability to affect outcomes (as in self-efficacy), but sense of worth in terms of one's personal experience of one's own position (see Appendix 1 for further detail). There is considerable, albeit controversial, literature on the importance of self-esteem (Baumeister et al. 2003; Crocker and Wolfe 2001). Trzesniewski, Donnellan and Robins (2003) find that self-esteem has substantial continuity over time, comparable to the stability of personality traits. Such stability suggests that self-esteem could be important for long-term psychosocial outcomes. Donnellan et al. (2005) examine the impact of self-esteem on behavior and find a robust relation between low self-esteem and high antisocial behavior. Furthermore, other studies using longitudinal data spanning from early adolescence (age 11) to early adulthood (age 26) find that adolescents with high self-esteem have better mental and physical health, better economic prospects and lower levels of criminal behavior during adulthood, compared to adolescents with low self-esteem (Trzesniewski, Donnellan and Robins 2003).

A further issue is how self-esteem is formed, with theories emphasizing the influence of peers and close friends' perceptions. However, the importance of genetic differences in temperament has not been ruled out. Trzesniewski and colleagues use a sample of twins aged between 5 and 7 years to examine the development of self-esteem. Their findings suggest that it has a moderate genetic component, like most other individual differences, but also a substantial amount of variance due to environmental factors. Goldsmith, Veum and Darity (1997) use data from the U.S. National Longitudinal Survey of Youth (from 1978-87) to examine the effect of self-esteem on wages and find that an increase in self-esteem engenders a greater increase in wages than does an increase in education.

The statements explored in the Young Lives survey focused largely on positive and negative dimensions of pride and shame. The measure is effectively an adapted version of the Rosenberg Self-Esteem Scale (Rosenberg 1965), tailored to specific dimensions of the children's living circumstances (e.g., housing, clothing, work, school). By adapting the measure to suit a context of child poverty we move away from a strict scale. The items used are: "I feel proud to show my friends or other visitors where I live," "I am ashamed of my clothes," "I feel proud of the job done by the head of household," "I am often embarrassed because I do not have the right books, pencils or other equipment for school," "I am proud of my achievements at school," "I am embarrassed by/ashamed of the work I have to do," "I am ashamed of my shoes," "I am worried that I don't have the correct uniform," and "the job I do makes me feel proud." Our measure is again the simple average of these questions, based on the standardized value of each item.

The third concept explored in this study refers to perceptions of respect and inclusion. This is related to the self-esteem measure, but has a stronger social element. Most measures of social inclusion are proxy measures that aim to describe "objective" circumstances of inclusion. For example, in a review of measurement in the European Union, Atkinson et al. (2002) summarize social exclusion as relating to a combination of poverty, income inequality, low educational qualifications, labor market disadvantage, joblessness, poor health, poor housing or homelessness, illiteracy and innumeracy. While such measures could be explored in the Young Lives sample, our focus is on the psychosocial dimension of inclusion: to what extent do children feel respected and included in their environment? The statements relating to this include: "When I am at the shops/market I am usually treated by others with fairness and with respect," "Adults in my community treat me worse than other children my age," "The other children in my class treat me with respect," "Other pupils in my class tease me at school," and "My teachers treat me worse than other children." Answers to each of the questions are again added to form an index of respect and inclusion, after first standardizing each item to have mean= 0 and variance= 1.

Finally, we included a specific question to address the children's hopes and aspirations. Each child is asked how far they hope to progress in educational terms. Inequalities in actual educational achievement have been found to be linked to differences in initial levels of aspiration, even though it is not always clear exactly how this works, nor what shapes these aspirations (Saha 1997). It is quite possible that aspirations are shaped by self-efficacy, mediated through parental and material circumstances (Bandura et al. 2001). A distinction should be made between aspirations and expectations, as the former tend to be unconstrained hopes while the latter reflect the economic, social and other constraints upon their fulfillment. Seginer (1983) distinguishes between realistic and idealistic expectations, whereby aspirations more closely reflect the latter. Young Lives explores both, but for the purposes of this paper, we focus on the latter only in relation to education, in terms of the highest grade the child hopes to complete.

Even though all the measures are based on existing instruments and measures, it is useful to explore their validity further (see Appendix 1). While the practice of validation tends to differ across disciplinary traditions, the cross-cultural validity of measures remains a crucial issue in social science research. Despite the assurances of some of the key authors in this field, it remains an issue that is hard to resolve, and is unlikely to be settled using quantitative data alone. The Young Lives instruments have not been designed to provide comparative measures across countries: there are key contextual differences between countries, and even basic issues such as translation render comparisons of results rather meaningless. Therefore, an equal score should not be interpreted as being equivalent across countries. In any case, in this paper, we will not pool data across countries in any of the analysis. This does not mean that a comparative perspective is not possible. In fact, by using a similar statistical methodology across countries, it is possible to make statements on the nature of the correlates of these measures.

Exploring the Correlates of Psychosocial Competencies

In this section, we explore some possible correlates of the psychosocial competencies measured. Many factors shape children's perceptions of themselves and their opportunities, and it is beyond the scope of this paper to present a full causal analysis. However, our longitudinal data allow us to cautiously explore some of the factors that may determine these things. Among these, we focus specifically on the home environment of the child in contrast to the overall local and school environment. In particular, we aim to isolate the impact of the family's material circumstances from other factors. To measure material wealth we use a number of variables describing the family's housing circumstances (an index based on type of roof, floor and walls) and access to utilities (such as electricity, good sanitation and clean water in the dwelling). Since in all countries studied, national material poverty figures are based on household-level consumption data, we also use total household consumption expenditure per capita (including consumption from production at home).

In order to isolate these factors, we use a multivariate regression model in which, besides variables describing the material wealth of the household, we control for child characteristics (such as age, sex and schooling) and caregiver characteristics (including age, schooling and whether the caregiver is the mother and/or disabled). We also control for some demographic characteristics of the household, such as whether the household is female-headed, its size and the birth order of the child.

Local circumstances beyond those measured at the level of the household may also influence the child's psychosocial competencies. For example, the extent to which the locality is connected to other areas, including in terms of roads or public goods, or through local political circumstances, could be relevant. Although the Young Lives data has access to some data associated with these factors, the key aim of this paper is to illuminate the links between households' material circumstances and children's psychosocial competencies. Furthermore, the number of localities studied in each country (in most cases not many more than 30) make the data set more suited to studying within-locality variation than variation between localities. With this in mind, the superior statistical technique is to use a model with cluster fixed effects, by including a full set of dummy variables, which take on the value of 1 if a given child lives in a particular locality (or cluster) and 0 otherwise. This means that we identify the impact of household and child-level variables according to variation *within* localities, with all variation across communities captured by locality-level dummies. The statistical model is described in more detail in Appendix 1.

Table 1 offers descriptive statistics of the household and child socio-economic and demographic correlates. Some of them are worth commenting on. First, it is striking that virtually all 12-year-olds in the data set are at school: the percentages are above 97 percent in Peru, Vietnam and Ethiopia, and nearly 90 percent in India. For Ethiopia especially, this reflects a remarkable improvement on the case only a decade ago. For Vietnam and India, the data also reflect recent advances. Nevertheless, enrolment figures in Round 1 of the survey show the persistent problem of late enrolment in Ethiopia, while dropout rates in India are still rather high, especially for girls. In Ethiopia and India, these figures show that 12-year-olds

now typically have higher grade completion rates than their caregivers; in Peru and Vietnam, they are close to the level of their caregivers. Other striking features suggest little female headship in households in India, but a higher percentage of households that are female-headed in Ethiopia. However, one must be careful with the latter statistic, and bear in mind that in Ethiopia, this factor is not associated with loss of resources as it may be elsewhere: even in traditional rural "highlands" society, divorce is acceptable for women, and offers them some access to land and assets.

In terms of wealth, we have data on three types of indicator, two of which can to some extent be compared between countries. First, housing quality is measured either by an average index or its constituent parts (roof, wall and floor quality, with 0 referring to poor quality and 1 to acceptable quality). Ethiopia is clearly the poorest in the sample, followed by India, with Vietnam and Peru at relatively similar levels. Similarly, access to utilities—including water, electricity and sanitation facilities in the dwelling—is poorest in Ethiopia, followed by India. The Peruvian families score higher here than those in Vietnam, where much investment appears to be needed in the rural areas (although population density and the possibility of managing water and sanitation outside the dwelling safely would urge one to be careful in interpreting these differences too strictly). The index for housing quality and access to utilities refers to the data gathered in 2002. For the third measure, household consumption expenditure per capita, only data for 2006 are available. This statistic offers a simple means of assessing monetary dimensions of the standard of living, as it adds up, in a specified period, all expenditure and consumption, including consumption on self-produced commodities. It is also the basis for most monetary poverty calculations across the world. While often criticized, its key advantage in our context is that it offers a comprehensive measure of spending power beyond dimensions relating just to housing and utilities. A further advantage over other possible measures is that it uses more detailed data, making it a more continuous measure overall. Differences in prices and currencies imply that one should not try to compare the data reported in Table 4 across countries. Nevertheless, a simple inspection of standard deviations relative to the mean confirms well-known inequality patterns between these countries. As the standard deviation in Peru is relatively large in comparison to the mean, the data for this country reflect a higher level of inequality than for the other countries studied. This is shown by the greater range at both the "rich" and "poor" ends of the indicators. The Vietnam data, meanwhile, show higher inequality than India and Ethiopia, respectively.

Table 1. Descriptive statistics of household and child socio-economic and demographic correlates

	PERU		VIETNAM		ETHIOPIA		INDIA	
	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev
Child's characteristics								
Child's age (R2)	12.357	(0.477)	12.297	(0.328)	12.101	(0.316)	12.370	(0.353)
Child's sex is female	0.465	(0.499)	0.500	(0.500)	0.494	(0.500)	0.508	(0.500)
Child attended school (R1)	0.994	(0.077)	0.988	(0.110)	0.674	(0.469)	0.997	(0.055)
Child is in school (R2)	0.991	(0.094)	0.969	(0.175)	0.976	(0.154)	0.897	(0.304)
Child's grade at school (R2)	5.930	(1.080)	6.606	(0.768)	4.232	(1.644)	6.721	(1.010)
Caregiver's characteristics								
Caregiver's age (R1)	34.954	(8.093)	35.119	(7.262)	35.221	(9.103)	31.023	(6.386)
Caregiver's highest grade (R1)	7.295	(4.214)	6.379	(3.687)	2.020	(3.353)	2.341	(3.899)
Caregiver is the mother (R1)	0.931	(0.254)	0.953	(0.211)	0.886	(0.318)	0.958	(0.200)
Caregiver is disabled (R1)	0.096	(0.294)	0.000	(0.000)	0.100	(0.301)	0.027	(0.163)
Household demographic characteristics								
No. children born before child (R1)	2.006	(2.319)	1.306	(1.558)	2.933	(2.568)	1.552	(1.719)
Head of household is female (R1)	0.181	(0.385)	0.161	(0.368)	0.242	(0.429)	0.080	(0.272)
Household size (R1)	5.697	(1.978)	4.931	(1.529)	6.458	(2.163)	5.548	(2.046)
Household Material Wealth characteristics								
Housing Quality Index (0-1) (R1)	0.487	(0.267)	0.544	(0.309)	0.245	(0.189)	0.403	(0.286)
Walls are brick/concrete R1	0.369	(0.483)	0.588	(0.493)	0.199	(0.399)	0.587	(0.493)
Floor is cement/tiled/laminated (R1)	0.407	(0.492)	0.590	(0.492)	0.096	(0.295)	0.275	(0.447)
Roof is iron/concrete/tiles/slate (R1)	0.843	(0.364)	0.735	(0.442)	0.495	(0.500)	0.527	(0.500)
Access to Utilities Index (0-1) (R1)	0.725	(0.307)	0.423	(0.281)	0.177	(0.235)	0.380	(0.291)
Household has electricity (R1)	0.737	(0.441)	0.886	(0.318)	0.350	(0.477)	0.818	(0.386)
Drinking water: piped/tubewell (R1)	0.846	(0.362)	0.349	(0.477)	0.100	(0.301)	0.250	(0.433)
Toilet facility: flush toilet (R1)	0.481	(0.500)	0.204	(0.404)	0.012	(0.111)	0.199	(0.399)
Log Household expenditure per capita in local currency per month (R2)	4.817	(1.088)	5.945	(0.634)	7.115	(0.581)	6.586	(0.529)

Evidence from the Young Lives Sample

Using the variables described above, we explored in each country the correlates of the four measures of psychosocial competencies: aspirations, self-efficacy, self-esteem and sense of inclusion. In Appendix 2, we give detailed results for different specifications for each country and measure. We report on four specifications: first,

a model in which consumption per capita is included, as well as a set of dummy variables as controls for each locality (model 1). In other words, this model explores whether there is any correlation between the material circumstances in which the child lives and her psychosocial competencies, controlling for all factors common to children living in a specific locality. Therefore, the effect of material circumstances on these outcomes is statistically identified using only within-cluster variation, i.e., exploiting inequality between families. Of course, there are multiple factors that may play a role in shaping psychosocial competencies, of which a possible list is given in Table 1. The second model specification in column 2 augments the first specification by adding those factors that might plausibly be considered predetermined by Round 2 of the survey (i.e., family and child circumstances in Round 1), as well as the variables reflecting the language spoken at home, caste (for India) and ethnicity (for all other countries). Note that some of these variables might be positively correlated with household consumption as well, and the expectation is that coefficients reflecting a positive relationship between consumption and the dependent variables found in model 1 will be lowered in this specification. In other words, this specification tests the robustness of the association established in the first set of results by adding other possible correlates.

The family and community environment is likely not to be the only context in which children's psychosocial competencies are shaped. We explore further models in which we control for whether the child is still in school and the grade she has already attained (i.e., capturing drop-out and grade repetition). The school environment and success and failure within education are bound to affect children's psychosocial competencies, not least their self-esteem and educational aspirations. Model 3 therefore explores these associations. It has to be stressed that the interpretation of the link between psychosocial competencies and the child's current educational experience must be done very cautiously, as the causality may go both ways: aspirations or self-esteem may well be affected by educational success, but they may also cause this success. Finally, a fourth model is presented that repeats model 2 but also includes the index of housing quality and of access to utilities on top of consumption per capita. As housing and utilities are not well measured in consumption aggregates, it may be possible that a different or additional correlation exists between the competencies and these indicators of material circumstances.

The results are striking. First, for all countries and for most of the psychosocial competencies, we observe a strong correlation between the material circumstances in which a child lives and her perceived psychosocial competencies. In all countries, educational aspirations and self-esteem are strongly and significantly correlated with the consumption per capita of the household in which the child is living. This is the case in all specifications, although the coefficients are slightly lower (as expected) in specifications 2 to 4 than in 1, suggesting that some of these characteristics (such as caregiver's education or household size) are also correlated with material circumstances. Consumption per capita is the clearest correlate of material circumstances. Exploring the role of housing quality and access to utilities, we find only a few significant correlates with the psychosocial competencies once consumption expenditure is included as well (i.e., the correlation between physical conditions and psychosocial competencies is not apparent once we control for

consumption). The exception is India, where all indicators are significantly affected by access to utilities. The lack of additional effect may seem surprising, but it should be acknowledged that utilities and housing are not necessarily well measured in the data, as the variables used are crude indicators of housing quality and the benefits of utilities. Measurement error may reduce coefficients and thus precision in estimation. Nevertheless, in the Indian context, the impacts are highly significant and (as will be seen) rather large. Secondly, and controlling for material circumstances, we also found a systematic correlation between the educational level of the caregiver and these competencies, especially (and in all countries) for self-esteem. This remained so when we controlled for educational experience. This may suggest that caregiver's education may contribute to a higher quality of care for the child, at least as reflected in the psychosocial competencies explored.

There is also a systematic link in all countries except India between self-esteem and the grade of education attained, and unsurprisingly, a link between the grade completion of the child and her educational aspirations in all countries. In terms of other possible correlates, the characteristics of the child, caregiver and household characteristics are less systematically linked. For example, there are only limited correlations between the gender of the child and psychosocial competencies, despite commonly perceived biases against girls in these societies. For example, girls in Peru have a greater sense of being included in society, and there are no differences for other indicators. In Ethiopia, there were no gender effects, while in Vietnam, girls have higher educational aspirations. In India, a larger gender impact can be detected in terms of educational aspirations: boys aspire to approximately one grade higher (which is a lot given the relatively high aspirations found across countries). Nevertheless, there is a greater sense of inclusion among girls compared to boys in India as well.

The indicator with the least clear-cut correlates is self-efficacy. As discussed in Appendix 1, it may be that this measure has more problems in terms of applicability in our settings and is measured with less precision. Nevertheless, it does correlate highly with other indicators. For example, in each country, self-efficacy was highly correlated with aspirations, even after controlling for self-esteem. Being a reflection of optimistic future beliefs about what is possible, this indicator may simply be less affected by current absolute circumstances. For example, it may be that children defined it *relative* to current circumstances (i.e., a belief that one can do better, as opposed to a belief that one can get "rich"). If so, the results should not necessarily come as a surprise as, among children with equal levels of wealth or parental income, some may believe they can do better while others do not. An alternative explanation may be linked to the cross-cultural meaning of concepts such as self-efficacy, as they do appear to be better defined in societies in which individual-based progress is more valued.

Finding an association between psychosocial competencies and other characteristics that deviates statistically from zero does not necessarily mean that the effects are relevant, as they may be too small to be meaningful. In order to explore this, we present four tables of marginal effects calculated from the results in Appendix 2. A marginal effect is defined here as the size of the impact on particular psychosocial

competencies from a small (or "marginal") increase of some key independent variable. The measurement units of dependent variables (with the exception of grade aspirations) do not have a clear direct meaning, making the reporting of marginal effects more complicated. Consistent with common practice, we express all marginal effects as percentages of the standard deviation in the dependent variable. In particular, the marginal effects show the impact of a one standard deviation increase in an independent variable on psychosocial competencies, expressed as the percentage of the standard deviation of this psychosocial competencies measure. For example, the standard deviation of the logarithm of consumption per capita in Peru is 1.07, and in the regression of educational aspirations (Appendix 2), the coefficient on consumption per capita for Peru is 0.227. Multiplying these two numbers gives about 0.24. The standard deviation of the educational aspirations measure is 1.80 (see Table 3 in the Appendix). Dividing the former by the latter gives 0.133 percent or 13.3 percent. This is the size of the effect as reported in the tables below, providing a unit of measurement that is comparable between countries and measures. We only report those marginal effects that were based on coefficients significant at 10 percent or less in the regression results.

Table 2 shows the impact of an increase in consumption expenditure per capita on the different psychosocial competencies. We use model 2 in Appendix 2, so that besides consumption and cluster fixed effects, a large number of other control variables are included. The most significant impacts are on grade aspirations and self-esteem, and the extent of these is surprisingly similar across countries. For example, a 1 percent increase in consumption expenditure (keeping other factors constant) tends to increase self-esteem by about 10 to 17 percent of the standard deviation. Grade aspirations also increase with consumption expenditure, typically to a greater extent: in India and Vietnam, the increase is more than a quarter of a standard deviation.

Table 2. Consumption expenditure (based on model 2)

	Grade Aspirations	Self-efficacy	Self-esteem	Inclusion
Peru	13.3		17.0	
Vietnam	26.2	12.0	14.8	
Ethiopia	17.6		9.7	
India	27.9		11.4	10.6

Note: All reported marginal effects are expressed in percentage terms following the increase in the independent variable by one standard deviation. The marginal effects show the impact of a one standard deviation increase in consumption expenditure on psychosocial competencies, expressed in terms of the percentage of the standard deviation of this measure. For example, 13.3 means that a one standard deviation increase in consumption increased grade aspirations by 13.3 percent of the standard deviation in the observed distribution. We only report those marginal effects that were based on coefficients significant at (at least) 10 percent in the regression results.

The impact of the caregiver's education (in terms of completed grades) can also be expressed using this model. Table 3 shows the marginal effects, and it is notable that they are similar in size to those reported in Table 2. Caregiver's education has significant impacts on all psychosocial measures in India, and on three out of the four in Vietnam, while self-esteem is affected in all countries by maternal education. The marginal effects are again surprisingly similar across countries. Table 4 shows the implied size of the association between the child's completed grades and the psychosocial measures. As discussed before, it is hard to establish any causal link from completed grades to competencies, but the association is still sizeable after controlling for a variety of factors, including material circumstances and maternal education. The large size of the association between grade aspirations and grades completed is probably the least surprising (but hard to interpret in causal terms). The additional impact of education on self-esteem and sense of inclusion in Peru, Ethiopia and (for self-esteem only) Vietnam is noticeable, albeit somewhat smaller than impacts on maternal education and consumption.

Table 3. Caregiver's education (based on model 2)

	Grade Aspirations	Self-efficacy	Self-esteem	Inclusion
Peru			14.0	
Vietnam	24.1		16.1	15.8
Ethiopia			10.5	
India	21.3	15.9	10.9	10.8

Note: All reported marginal effects are expressed in percentage terms. The marginal effects show the impact of a one standard deviation increase in caregiver's education on psychosocial competencies, expressed in terms of the percentage of the standard deviation of this measure. For example, 24.1 means that a one standard deviation increase in caregiver's education increased grade aspirations by 24.1 percent of the standard deviation in the observed distribution. We only report those marginal effects that were based on coefficients significant at (at least) 10 percent in the regression results.

Table 4. Child's education (based on model 3)

	Grade Aspirations	Self-efficacy	Self-esteem	Inclusion
Peru	29.5		13.3	14.9
Vietnam	49.1		6.3	
Ethiopia	25.8		9.8	10.9
India	24.9			

Note: All reported marginal effects are expressed in percentage terms. The marginal effects show the impact of a one standard deviation increase in child's education on psychosocial competencies, expressed in terms of the percentage of the standard deviation of this measure. For example, 29.5 means that a one standard deviation increase in the educational attainment of the child at present increased grade aspirations by 29.5 percent of the standard deviation in the observed distribution. We only report those marginal effects that were based on coefficients significant at (at least) 10 percent in the regression results.

Finally, Table 5 explores whether the link between material circumstances and psychosocial competencies is restricted to measures of consumption per capita, or whether other dimensions of material circumstances have a significant impact. As mentioned earlier, model 4 in the Appendix only showed clear additional effects for India and (for self-efficacy) Vietnam. However, the size of the marginal effect is in these cases rather large: a one standard deviation increase in the access to utilities index is associated with an increase in the self-efficacy measure by 60 percent of its standard deviation in both countries. For India, the impact on the other indicators in Table 5 is also high. This suggests that in this state in India, and given that the regressions control for cluster-wide effects (i.e., for common factors in the locality), living with less access to utilities than others in these localities is associated with considerably lower psychosocial competencies in terms of all four measures used. It is difficult to generalize on the reasons for this from our data, but the causes of different experiences across countries deserve further exploration in future work.

Table 5. Access to utilities (based on model 4)

	Grade Aspirations	Self-efficacy	Self-esteem	Inclusion
Peru				
Vietnam		35.9		
Ethiopia				
India	60.3	36.4	34.9	60.9

Note: All reported marginal effects are expressed in percentage terms. The marginal effects show the impact of a one standard deviation increase in the access to utilities index on psychosocial competencies, expressed in terms of the percentage of the standard deviation of this measure. For example, 35.9 means that a one standard deviation increase in the access to utilities index increased grade aspirations by 35.9 percent of the standard deviation in the observed distribution. We only report those marginal effects that were based on coefficient significant at (at least) 10 percent in the regression results.

Conclusion

This paper has explored data on four measures of the psychosocial competencies of 12-year-old children: self-efficacy, sense of inclusion, self-esteem and educational aspirations. The sample consisted of 3,700 children from four countries: Ethiopia, India (Andhra Pradesh), Peru and Vietnam. We asked whether the material circumstances of households are associated with these psychosocial competencies, controlling for a large number of other child, household and community factors. For this cohort of 12-year-olds, we find that measures of self-efficacy, sense of inclusion and especially self-esteem and educational aspirations all correlate with measures of material well-being for the family in which they are growing up. In short, material circumstances as proxied by consumption contribute to shaping these wider dimensions of child well-being. These effects are substantial and surprisingly similar across the countries studied.

As other evidence has shown that these psychosocial competencies have a sustained effect into adulthood and affect socio-economic status, they may represent a mechanism by which poverty is transmitted across generations. Furthermore, our evidence shows that caregivers' education and school participation are also correlated with children's psychosocial competencies, suggesting a possible mechanism for overcoming transmission of poverty over time.

The methods used do not allow us to infer causality as to how these psychosocial competencies are shaped, whether by poverty or otherwise. However, the presence of strong and systematic associations between the material circumstances in which the child is growing up and child psychosocial competencies across a number of countries is suggestive of a mechanism by which poverty is reproduced across generations. As the Young Lives survey aims to follow these children into adulthood, these longer-term impacts can be further assessed in due course. This is only the beginning of a longer engagement with the questions posed here.

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Appendix 1. Collecting Data and Constructing Measures of Psychosocial Competencies with the Young Lives Data: Some Methodological Reflections

While the ideal of integrating the measurement of psychosocial competencies into a large-scale data collection project to study child poverty can hardly be disputed, putting it into practice proves to be a complicated task. As the literature review showed, there are plenty of studies with sets of questions linked to the concepts we aimed to explore. Few if any of these took place in cross-cultural settings on children of the same age in the context of a large survey.

One crucial early decision had to do with the way we would measure psychosocial competencies. In some methodological traditions, not least in psychology, the questions required are part of a defined and validated scale. An example would be the Rosenberg Self-Esteem Scale (Rosenberg 1965), a self-report measure consisting of ten statements relating to feelings of self-worth or self-acceptance. Such an approach assumes that the psychosocial competency researched is an empirically well-defined and effectively unidimensional construct. This particular scale is widely used, but its validity—not least with children—may be disputed. Its rather strong "positivist" connotations add to its contentious nature. Similar problems arise with most alternative scales, especially those related to self-efficacy and self-esteem. An alternative approach would be to accept that it is unlikely that one would be able to define a unidimensional global concept across these different settings for this age group, or at least to acknowledge the difficulties in this.

Measures of inclusion as used in this paper have rarely been developed with the intention of measuring a well-defined unidimensional construct. For example, the asset index collected in many Demographic and Health Surveys across the world are based on a small number of specific questions on whether or not a household owns an asset, such as a television, radio, refrigerator or bicycle. Using a weighting procedure, the results are used to create an asset or wealth index, with a higher number reflecting greater wealth. However, few would confuse this with a global, unidimensional concept of wealth: even within a small country or a region, its meaning may not be constant. For example, a bicycle has different worth according to whether or not one lives in a mountainous area; the value of owning a refrigerator, meanwhile, may depend on whether there is regular electricity. However, given the problems with collecting convincing data on differences in socio-economic status, it provides a useful index for differentiating between richer and poorer people, albeit imperfectly.

In not purporting to measure a unidimensional construct, but rather using an index of potentially diverse elements, linked to a well-defined concept, our approach is more pragmatic and was therefore chosen for the Young Lives data collection. A large number of scales and questions were adapted to provide questions that were deemed intelligible by the subjects of the study. They were designed to correspond to different dimensions of the concepts explored and to reflect different strata of children's lives, including family, school, workplace and broader community. We piloted these questions and those judged suitable for inclusion in a relatively long instrument (in terms of time taken) were implemented by a well-trained survey team. After this process, we retained a narrower set of questions. Even so, some of

the non-quantitative researchers on the team were skeptical about some items, not least in terms of cross-cultural validity. One set of questions which was criticized were the "self-efficacy" questions. For example, positive answers to questions such as "other people in my family make all the decisions of how I spend my time" will not in all contexts reflect a lack of self-efficacy for a 12-year-old, depending on who makes these decisions and what they are. Furthermore, reports from the field suggested that some of the questions included proved rather time-consuming, despite their seemingly simple nature, which suggests that their subjects had difficulty interpreting them. In general (and the results in this paper would support this), the mapping of questions onto the concept of self-efficacy may well be weak.

Once collected, we processed the data as described above. In line with the methodological approach taken, our measures form an index based on a score on items related to the concepts used. The concept measured is multidimensional, and not all dimensions need to be fully correlated with each other. For example, a child could have limited self-efficacy in some spheres, such as future marriage or educational opportunities, but a stronger sense of mastery over his or her destiny in terms of future work opportunities. Likewise, the child could feel unashamed of her clothes at school, but would not like her friends to meet her parents.

Key issues to be considered relate to the reliability (or consistency) and the external validity of measures. In the statistical traditions of psychology, the latter relates to the correlation of the measure used with other indicators. In our context, this is at best a red herring, as it is not quite clear *a priori* what the relationship between a given measure and other variables in our sample should be in settings where these links have rarely, if ever, been explored. The issue of reliability or internal consistency has some value, although the standard approach only applies to a unidimensional concept. The standard measure used is Cronbach's alpha, which measures the interrelation between items in a scale. The idea is that each item should measure the same latent concept, so they should all be correlated with each other. The measure is calculated as: $\alpha = \frac{k}{k-1}\left(1 - \frac{\Sigma_i s_i^2}{s_T^2}\right)$, with k the number of items, s_i^2 the variance of the ith item and s_T^2 the variance of total measure, the sum of all items. It is commonly suggested that a value close to at least 0.70 is required for "reliable" measures (Bland and Altman 1997). It is obviously not a requirement for a measure capturing a number of heterogeneous dimensions. In this case, measures are more an "index" or "score," aggregating multiple dimensions, and Cronbach's alpha has less meaning.

A smaller number of items would reduce Cronbach's alpha, as would measurement error. For our purposes, the latter is less of a problem, as we use our measures in this paper as dependent variables in multiple regression models. As is well known, measurement error increases the variance but does not create any bias in a multivariate regression model, as long as the measurement error is not systematic.

Nevertheless, the reliability tests of our measures of self-efficacy, self-esteem and respect offer interesting information. Table A1 presents the standard errors of the

measures in each country and overall, as well as the Cronbach's alpha in brackets. (Note that the measures are aggregations of item measures, scaled to have mean= 0 and variance= 1, so, unsurprisingly, the means of the three measures are very close to 0, and not reported.) There is most cross-sectional variation in the measures of self-efficacy and inclusion. In terms of the Cronbach's alpha, the measure of self-esteem is "reliable" in three out of four countries with a statistic near 0.70; for the two other measures (self-efficacy and inclusion), this statistic is typically nearer to 0.50. Peru has lower "reliability" in all three measures. Whether this is due to a cross-cultural difference in understanding of the underlying concepts, the fact that only a three-point scale was used, the underlying multidimensionality, or any other reason, cannot be assessed.

Table A2 gives the mean educational aspirations for each country with the standard deviation in brackets. As in other studies, the high expectations of these children at the age of 12 is remarkable, with an average aspiration of over 15 years of education, with a relatively low standard error.

Table A1. Self-efficacy, self-esteem and inclusion: standard deviation and Cronbach's alpha

	Ethiopia	India	Peru	Vietnam	All
Self-efficacy	0.70 (0.47)	0.75 (0.50)	0.66 (0.28)	0.74 (0.55)	0.72 (0.47)
Self-esteem	0.55 (0.69)	0.56 (0.67)	0.52 (0.50)	0.58 (0.70)	0.55 (0.67)
Respect	0.64 (0.58)	0.61 (0.49)	0.52 (0.29)	0.59 (0.51)	0.60 (0.49)
No. Of Observations	978	992	682	983	3635

Source: Calculated from the older cohort from the Young Lives data 2006. Standard deviation with Cronbach's alpha in brackets. Underlying items for each measure transformed with mean zero and variance one. Generated measure is simple average.

Table A2. Educational aspirations in years (means and standard deviation)

	Ethiopia	India	Peru	Vietnam	All
Years of education	15.36 (2.78)	15.07 (2.99)	15.17 (1.80)	15.60 (2.57)	15.31 (2.63)
No. Of Observations	936	907	666	952	3461

Source: Calculated from the older cohort from the Young Lives data 2006; 12-year-old children.

The different measures are correlated with each other. Table A3 gives the correlation matrix for the pooled data set. The patterns are rather similar for each country. Self-esteem is most strongly correlated with the measure of inclusion—

possibly unsurprisingly, as the self-esteem measure is based on statements of shame and pride related to a number of social contexts (such as at school or at home). Self-esteem and self-efficacy correlate relatively strongly with educational aspirations, inclusion less so. We explored these relations further, country by country, using a multivariate regression. We found that in all countries, self-esteem appears to be "determined" by self-efficacy and inclusion, in the sense that a simple regression of self-esteem on self-efficacy and inclusion found these last two were both strongly significant. We obviously cannot infer causality, although it is consistent with a view that self-efficacy helps to shape self-esteem. Furthermore, educational aspiration is strongly linked to both self-esteem and self-efficacy. Note that these correlations are present despite the fact that the measure of self-efficacy may have seemed problematic in view both of conceptual concerns and the low Cronbach's alpha. The link between self-efficacy and aspirations is also consistent with the evidence in Bandura et al. (2001). Furthermore, in all the countries studied, the inclusion measure does not have a significant impact on educational aspirations once self-esteem and self-efficacy are controlled for. This is consistent with a close link between self-esteem and inclusion in the data, but perhaps also suggests that self-esteem has a wider role in shaping children's perceptions and aspirations.

Table A3. Correlation matrix: correlation between measures

	Self-esteem	Self-efficacy	Inclusion	Educational Aspirations
Self-esteem	1.00			
Self-efficacy	0.28	1.00		
Inclusion	0.45	0.21	1.00	
Educational Aspirations	0.13	0.19	0.08	1.00

In the statistical analysis in the paper, we explore the correlates of each of these measures using a rather general statistical model. We use a multivariate regression model, in which, besides variables describing the material wealth circumstances of the household, we control for child characteristics (such as age, sex and schooling) and caregiver's characteristics (including age, schooling and whether the caregiver is the mother and/or disabled). We also control for some demographic characteristics, such as whether the household is female-headed, its size and the birth order of the child.

The statistical model is estimated using standard least squares techniques. As the data are clustered, standard errors are corrected by locality. Equation 1 shows the model estimated, where a measure of psychosocial competency S for child i in locality j is regressed on child characteristics C and household and caregiver's characteristics X. The variable δ captures all characteristics that are fixed (and therefore common) to each locality j. To estimate these fixed characteristics, a least squares dummy variable model is estimated. Note that ε is an error term capturing random variation. Time subscripts are included. In order to strengthen our

inference on how psychosocial competencies are shaped by circumstances in which the child is growing up, we link characteristics that capture the circumstances in which the child was living in the first round (*t-1*), in 2002, when she was about eight years old, to the psychosocial competencies of the child in 2006, during the second round (*t*) when she was about 12 years old.

Equation 1.

$$S_{ijt} = \alpha + \beta C_{ijt-1} + \gamma X_{ijt-1} + \delta_j + \varepsilon_{ijt} \quad (1)$$