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Young Lives

Exploring Well-being Among 22-Year-Old Youth in India

Renu Singh, Ranjana Kesarwani, and Protap Mukherjee

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Summary

Well-being is a multi-dimensional construct integrating physical, cognitive and socio-emotional dimensions of an individual. It refers to both objective measures of well-being as well as the subjective perceptions of an individual related to their circumstances. Concepts of poverty and well-being are closely intertwined. It has often been observed that economic development does not always translate into human development and well-being. Therefore, the measurement, tracking and promotion of well-being, especially the well-being of youth (aged 15-24) who constitute 19.1 per cent of India's population, has grabbed the attention of policymakers.

This working paper presents a composite index that quantifies levels of well-being among 22-year-old young adults in India. The index is composed of 13 domains captured through 51 indicators. Applying the index to the Young Lives Older Cohort reveals that seven out of ten young adults have well-being that is below the mean. Analysis also reveals that psychosocial well-being in terms of inclusion, agency, self-esteem and stress are areas of concern, with many young adults reporting low scores for these indicators. This validated well-being index for youth aged 22 could potentially be used as a powerful tool to influence and inform youth-based policies.

About Young Lives

Young Lives is an international study of childhood poverty, following the lives of 12,000 children in four countries (Ethiopia, India, Peru and Vietnam) over 15 years. **www.younglives.org.uk**

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1. Introduction

Well-being is an extremely complex construct that has attracted much academic attention in recent years. Bornstein et al. (2003) suggest that 'well-being is a state of successful performance throughout the life course integrating physical, cognitive and socio-emotional function that results in productive activities deemed significant by one's cultural community, fulfilling social relationships and the ability to transcend moderate psychosocial and environmental problems' (Bornstein et al. 2003: 14). The association of well-being with poverty and human development is well-established (Rojas 2014; Madan 2012; Anand 2016). Both developed and developing countries have realised that focusing on income measures encourages an unbalanced emphasis on economic growth and policies that, at their worst, have proven to be unsustainable, unequal and unable to reduce poverty. However, there is increasing interest in measuring the well-being of individuals in order to assess whether societal development equates with progress (McGregor et al. 2014). Poverty is increasingly recognised as a multidimensional concept which must go beyond income and consumption to capture deprivation in aspects such as health education, social status and political power, which are harder to measure in monetary terms (Banerjee et al. 2014). The concepts of poverty and well-being are closely intertwined. Furthermore, human development (underpinned by the capability approach) is conceptualised as being about expanding people's choices to live full and creative lives with freedom and dignity (Madan 2012). Thus, the capability approach is seen as a framework for the evaluation of individual well-being and social arrangements (Robeyns 2003).

Under this approach 'poverty' is understood as deprivation in the capability to live a good life, and 'development' is understood as capability expansion. There is increasing attention on developing measures for evaluating individuals' well-being and social arrangements that will inform the design of policies about social change in society (Robeyns 2003). As highlighted by Samman (2012), research related to well-being in the last decade has focused on conceptual foundations (e.g. Alkire 2002; Gough, McGregor and Camfield 2007), participatory accounts (e.g. Narayan et al. 2000; Chambers 2006) and multidimensional measurement (e.g. UNDP 2010; Santos 2013). These perspectives define progress as more than just economic growth: they assert that multiple dimensions are needed in order to provide a rounded view of well-being. Subjective measures of well-being have been shown to vary according to age (Blanchflower and Oswald 2004; Graham 2009) and according to the time of day (Kahneman et al. 2004).

This working paper aims to build on existing frameworks and develop a well-being index specifically for young adults aged 22 years, by drawing upon longitudinal evidence collected by Young Lives, India, using both subjective and objective well-being indicators. Objective well-being is where the measurement considers externally approved, and thereby normatively endorsed, features of a person's life, such as good health and access to adequate housing (Gasper 2004). Subjective well-being, on the other hand, is based on personal views and assessments of life circumstances (Carroll 2002).

Some researchers and policymakers have suggested that rich countries should focus on studying child well-being, while poor countries must focus on childhood poverty (Saith and Wajir 2010). We believe that it is critical to measure well-being in all contexts, and therefore aim to provide indicators of well-being in the Indian context. Given that 22 per cent of India's

population lives below the poverty line (ADB 2018) and structural inequalities such as caste and patriarchy are deeply rooted within the societal fabric, focusing on measuring well-being is critical for addressing poverty.

There are various interpretations of the complex phenomenon that is well-being. With roots in medical research, well-being also found a prominent place in psychology (Roscoe 2009). The two main approaches to well-being in psychology are the hedonic and eudaimonic approaches. While the hedonic approach equates well-being with pleasure and happiness (e.g. subjective well-being) (McMahan and Estes 2011), the eudaimonic approach focuses on six elements: self-acceptance, autonomy, relationships, purpose in life, personal growth, and leadership. Thus, the hedonic approach focuses on subjectively determined positive mental states, whereas the eudaimonic approach focuses on experiences that are objectively good for the person (Kagan 1992). A third approach focuses on quality of life, which is broader than either the hedonic and eudaimonic models and includes physical, psychological and social aspects of functioning (Cooke, Melchert and Connor 2016). A fourth approach looks at holistic wellness while examining well-being.

Globally, a wide range of social indicators are used for well-being, many of which focus on the quality, experience and needs of the population (Saith and Wajir 2010). OECD (2011) identified three major domains for studying well-being, which are material living condition, quality of life and sustainability. Sharma et al. (2017), while constructing the Global Youth Well-being Index, identified seven domains of well-being (gender equality, economic opportunity, education, health, safety and security, citizen participation, and information and communication technology) and found that the majority of the world's youth experience low levels of well-being. They defined well-being as a multidimensional concept that includes a person's physical and mental health, educational status, economic position, physical safety, access to freedom and ability to participate in civic life (Sharma et al. 2017). WHO (1998) created the WHO-5 Well-being Index using items related to positive mood, vitality and general interest. It is important to highlight that the WHO-5 Well-being Index focused only on self-reported, current mental well-being status. In India, Mishra and Shukla (2015) monitored the extent of deprivation while studying well-being, by analysing three indicators related to availability of drinking water, use of electricity, and availability of toilet facilities, contained in National Sample Survey Office (NSSO) data. The development progress project run by the Overseas Development Institute (ODI) aimed to address where, when, how and for whom progress has occurred in developing countries over the last two decades. It adopted a definition of progress as 'an improvement in the sustainable and equitable well-being of society'. The project measured progress across eight dimensions: material living standard, health, education, environment, political voice and governance, security, employment and social cohesion. Samman (2012) and Jones and Summers (2007) argued that the value added or comparative advantage of a well-being lens (over a 'traditional' poverty lens) is that it:

- addresses what people feel (their emotions and experiences) as well as what they can do and be
- is more respectful as it is based on what people can do/be/feel, rather than deficits in what they can do/be/feel (and related issues of labelling)
- expands the focus from the body/physiology to include mind/psychology

- is based on current experience rather than future 'well becoming' (a poverty focus orientates toward future well-being, i.e. education to literacy, food to being healthy, etc.)
- is grounded in local cultural contexts and specificity of experience
- particularly emphasises 'new' areas including autonomy, enjoyment/fun, relatedness and status.

From the literature, depending on availability of data, different authors used different approaches to construct well-being measures. Stiglitz et al. (2009) assessed how different countries performed on single as well as multiple dimensions of well-being, by studying 'a large and eclectic dashboard' of indicators. On the other hand, WHO assessed five items on a 6-point Likert scale from zero (=not present) to 5 (=constantly present). Scores were summated with raw scores ranging from 0 to 25 and then transformed to 0-100 by multiplying by 4, with a higher score meaning better well-being (WHO 1998). On the other hand, OECD (2011) estimated well-being very differently and for each of the 11 indicators (across the three domains mentioned above), scores were collected on a 6-point Likert scale ranging from zero to 5. Then the total domain score was calculated by taking the sum of the score on each domain. Further weighted domain scores were calculated and the well-being index calculated by taking the average of all weighted domain scores (OECD 2011). Furthermore, in order to construct a global youth well-being index, each indicator was normalised, ranging between zero and 1, with the highest score of 1 denoting positive well-being (Sharma et al. 2017). Another multi-dimensional scale measuring satisfaction with life is the Personal Wellbeing Index (PWI) developed by the International Wellbeing Group (IWbG 2013). The PWI is based on two approaches, a 'single construct scale' and 'life domain scale', and covers a basic set of seven quality of life domains: standard of living, health, achieving in life, relationships, safety, community connectedness, and future security. The PWI was created using the Comprehensive Quality of Life Scale (ComQol) (IWbG 2013).

1.1. Context

According to India's Census 2011, youth (aged 15-24 years) constitute almost one-fifth (19.1%) of India's total population (ORGI 2015). With one-fifth of India's population also living below the poverty line, well-being has received the attention of policymakers and practitioners as growth in the Gross National Income (GNI) does not ensure human development. Clearly measuring, tracking and promoting the well-being of youth will be useful for policymakers involved in health promotion and also help to ensure that youth have access to services and opportunities so that they become effective change agents in shaping better futures for themselves, their families, as well as society. In reviewing the available literature, it is apparent that very few researchers have studied the well-being of youth in the Indian context or attempted to construct a well-being index in India. Therefore, considering the wealth of information that Young Lives panel data provides and the importance of measuring well-being, this working paper creates a well-being index by identifying indicators or drivers of well-being relevant for youth aged 22, that could potentially be a powerful tool to influence and inform youth-based policies.

2. Data

This paper utilises data from the Young Lives study of childhood poverty in Andhra Pradesh and Telangana. Since 2001, Young Lives has followed two age cohorts of 3,000 children and young people – an Older Cohort born in 1994-95, and a Younger Cohort born in 2001-02 – over five survey rounds. Analysis in this paper is limited to the Older Cohort, who were about 22 years old at the time of Round 5 of the survey in 2016. Each round has collected information at the community, household and individual level. Young Lives has a sentinel site design, and the sample in Andhra Pradesh and Telangana is clustered in about 98 communities (villages or urban wards) in 20 *mandals* (sub-districts), which were purposively selected.

Attrition in the survey was low over the 15-year period of data collection. In Round 5 (2016), among the Older Cohort 467 out of 517 girls (~90 per cent) and 439 out of 491 boys surveyed in 2002 (~89 per cent) were still in the study sample, providing a sample of 906 Older Cohort children and final sample size of 890 for this study after principal component analysis was applied. The variables used in the construction of well-being index have been taken from the Round 5 survey in 2016. Young Lives data also provide background characteristics such as gender, birth order, marital status, mother's and father's education, location of residence, religion and caste. Birth order, mother's and father's education, religion and caste have been taken from the Round 1 survey conducted in 2002.

3. Methodology

This study constructs the well-being index as a composite score of selected domain indicators using principal component analysis (PCA). PCA is a dimension reduction tool that can be used to reduce a large set of variables to a small set that still contains most of the information in the large set. The method transforms a number of correlated variables into a smaller number of uncorrelated components. The objective of PCA is to find unit-length linear combinations of the variables with the greatest variance. This method seeks linear combination of variables such that maximum variance is extracted from the considered variables. It then removes this variance and seeks a second linear combination which explains the maximum proportion of the remaining variance, and so on. This is called the principal axis method and results in orthogonal (uncorrelated) factors are known as principal factors. Extracted principal components reflect both the common and unique variance of the variables. The first principal component accounts for as much of the variability in the data as possible, with each succeeding component then accounting for as much of the remaining variability as possible.

In PCA, eigenvalues measure the amount of variation in the total sample accounted by each factor, where a factor's eigenvalue may be computed as the sum of its squared factor loadings (which are the correlation coefficients between the variables and factors) for all the variables (Smith 2002). In other words, eigenvalue is a number which explains how much variance in the dataset is explained by the component and it also explains the direction of value on a line. The factor loadings are the correlation between each variable and the

component. The higher the load, the more relevant it is in defining the factor's dimensionality. A negative factor loading value indicates an inverse impact on the component.

In mathematical terms, from an initial set of *n* correlated variables, PCA creates uncorrelated indices or components, where each component is a linear weighted combination of the initial variables. For example, from a set of variables X_1 through to X_n,

$$PC_1=a_{11}X_1+a_{12}X_2+\ldots\ldots+a_{1n}X_n$$

$$PC_m=a_{m1}X_1+am_2X_2+\ldots\ldots+a_{mn}X_n$$

a_{mn} represents the weight for the *m*th principal component and the *n*th variable.

The weights for each principal component are given by the eigenvectors of the correlation matrix, or if the original data were standardised, the co-variance matrix. The variance (λ) for each principal component is given by the eigenvalue of the corresponding eigenvector. The components are ordered so that the first component (PC_1) explains the largest possible amount of variation in the original data, subject to the constraint that the sum of the squared weights is equal to one. As the sum of the eigenvalues equals the number of variables in the initial dataset, the proportion of the total variation in the original dataset accounted by each principal component is given by $\lambda_i/\mathbf{n}$. The second component (PC_2) is completely uncorrelated with the first component and explains additional but less variation than the first component, subject to the same constraint. Subsequent components are uncorrelated with previous components; therefore, each component captures an additional dimension in the data, while explaining smaller and smaller proportions of the variation of the original variables. The higher the degree of correlation among the original variables in the data, the fewer components are required to capture common information.

4. Identifying indicators of well-being

Well-being cannot be directly observed and measured (McGillivray and Clarke 2006), but it can be observed through several dimensions of quality of life. As mentioned earlier, OECD identified three dimensions having 11 domains, while Sharma et al. (2017) relied on seven domains for assessing well-being. After an extensive review of available literature and Young Lives data, we have arrived at 13 domains of well-being covering specific dimensions of quality of human life which incorporate both objective and subjective measures. We did not consider a wealth index as an indicator to avoid high multicollinearity, as we have considered items such as housing conditions and consumer durables (which are used for wealth index calculations) as separate domains.

While we recognise that environmental conditions and shocks in the family are important domains of well-being, we did not use these indicators due to their low prevalence in our dataset. The OECD Better Life Index considered household and personal income, employment rate, long-term unemployment rate and labour market insecurity, but we could not consider these as in Round 5 of the Young Lives survey, only 52.9 per cent of 22-year-

old young adults were working full-time, whereas 13 per cent were still studying (Young Lives 2017).

A comparison of domains and indicators used by the OECD Better Life Index, the Global Youth Well-being Index developed by Sharma et al. (2017) and Young Lives Well-being Index is contained in the Appendix, with domains which are common to these three indices highlighted. There are six domains of Young Lives well-being which are comparable to five domains of the OECD Better Life Index, while three domains of the Global Youth Well-being Index match three domains of the Young Lives index. Furthermore, while the OECD index considers the entire age span, the Global Youth index focuses only on youth aged between 15-24 years.

Thus the 'potential drivers of well-being' considered in this paper refers to external factors such as basic services, housing, education and social networks, and to certain internal factors such as health, decision-making and self-esteem, all of which influence how people feel and function. Table 1 outlines the reasons for selecting each domain.

Table 1. *List of well-being domains and their inclusion criteria*

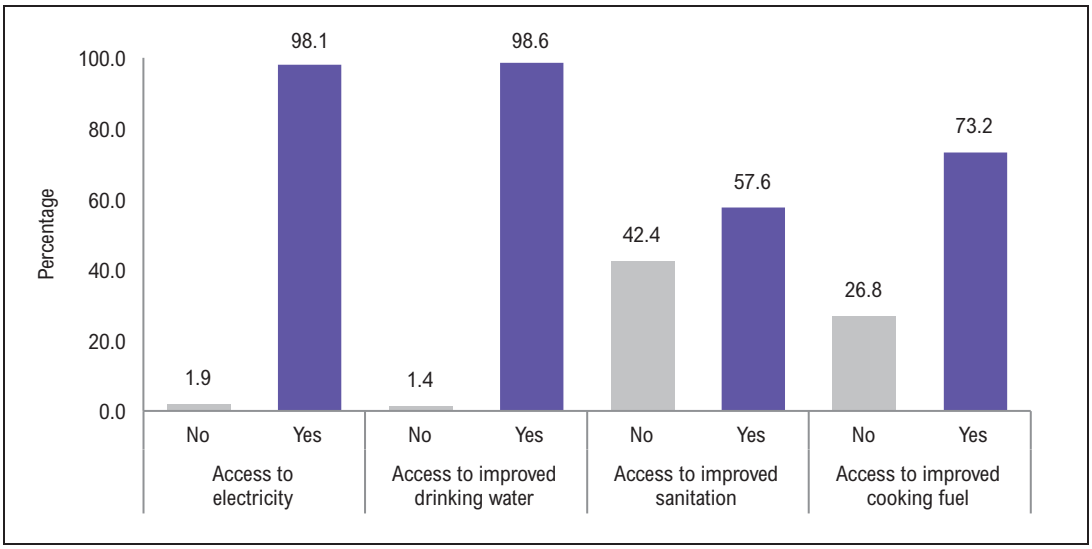
Serial number	Domain	Reason for inclusion
1	Basic services	Access to services is essential to meet basic needs, such as access to electricity and water, for human life.
2	Housing quality	Good housing conditions are essential for people's health and affect childhood development (OECD 2011). Poor housing quality is one of the reasons for psychological stress and health and is known to negatively affect self-esteem (Dunn 2002).
3	Consumer durables	Home amenities reveal household's conditions, and this is an important domain explaining the quality of life as it highlights the material well-being of both the individual and household. Consumer durable goods matter to the well-being of individuals and there is an increasing consensus that any welfare measure should account for them (Deaton and Zaidi 2002; OECD 2013).
4	Perception about community	Opportunities and services such as education, work, and health services available in the community not only help in meeting families' basic needs but create positive social bonds that promote well-being (Moore et al. 2016). This domain captures individual feelings/perceptions about the community; how they feel about the locality and how satisfied they are with it.
5	Education status	Education status has strong influence on an individual's well-being as it opens opportunities for people and brings a range of benefits to society (OECD 2011).
6	Health status	Health status has an inherent as well as an instrumental value because it enhances people's opportunities to participate in education and the labour market (OECD 2011).
7	Subjective well-being	Well-being refers to the quality of an individual's life and covers the both subjective and objective aspects of life (Martin 2012).
8	Involvement in household decision-making	Household decision-making ranges from economic decisions such as purchases and expenditure on various household items, to social decisions such as visiting a parental or relative's home.
9	Inclusion	Frequency of contacts with others and quality of personal relationship are important determinants of an individual's well-being (OECD 2011).
10	Agency	Agency is defined as the process in which people exercise control over their lives by acting on their environments. Thus, processes that allow freedom of actions and decisions are valuable for people and shape their individual quality of life (Sen 1999).
11	Self-esteem	Self-esteem is an extremely critical construct during an individual's life. Suresh, Jayachander and Joshi (2013) have established that self-esteem is positively associate with an individual's well-being.
12	Stress	Several studies have observed the association of stress and well-being in different sectors of work (Poormahmood et al. 2017; Yunus and Mahajar 2011) and found that stress may lead to poor well-being.
13	Involvement in fertility decision-making	There is an important link between happiness, childbearing and partnership status (Aassve et al. 2012), so involvement in fertility decision-making is an important indicator for well-being status at 22 years old.

Detailed descriptions of variables/indicators considered under each domain are below.

1. Basic services

We have included four services under this domain: access to electricity, access to improved water, sanitation, and access to adequate cooking fuel. Improved water includes piped water into dwelling/yard/plot, tube well in dwelling, and public standpipe/common tap/public well. Flush toilet, septic tank in dwelling, and pit latrine (household and communal) are denoted as improved sanitation, whereas kerosene, paraffin, gas and electricity are adequate cooking fuel. Internal consistency has been checked for all four services. The Kappa[1] statistic (Cohen 1960) for the four services is 0.4, which provides the internal consistency. Therefore, we consider these services important indicators for quantifying quality of life. Findings based on the Young Lives Round 5 data show that more than 95 per cent of young adults aged 22 have access to electricity and water (Figure 1). About 73 per cent have access to adequate cooking fuel, but only 58 per cent have access to improved sanitation. The results suggest that low well-being might be due to low access to improved sanitation and adequate cooking fuel.

Figure 1. *Percentage distribution of sampled young adults (age 22) for access to basic services*



Source: Young Lives Older Cohort data (Round 5, 2015-16).

2. Housing quality

Many studies have demonstrated that good housing condition is a key element for ensuring a healthy society, whereas poor housing condition can have an adverse effect on psychological well-being (Howard et al. 2002; Minton and Jones 2005). Housing is also the place where an individual finds a sense of reassurance, relaxation, and satisfaction. Based on this, a good quality of housing environment should improve individuals' well-being. However, housing remains a major issue for poor populations. Therefore, under this category, we have included four indicators: number of rooms available per person, quality of walls, quality of roof, and

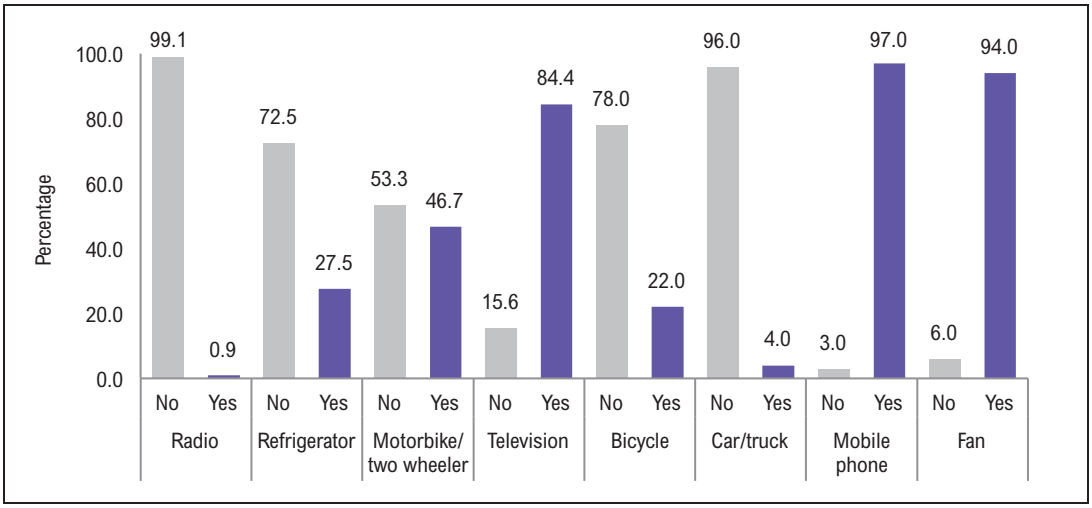
1 Kappa co-efficient is used to check inter-rater reliability for categorical data.

quality of flooring. Rooms per person has been computed as number of rooms divided by household size. Data showed that for the sampled young people, the average number of rooms per person is 0.41. In other words, there are more than two people in a single room, highlighting that most of the houses were small. Quality of walls is considered in binary form as either bricks and concrete or other materials. Analysis shows that 80 per cent of youth responded that their house walls were made of bricks and concrete, and two-thirds of houses had low-quality flooring material.

3. Consumer durables

Consumer durables are important for assessing material well-being. Basic consumer durables form part of a quality household environment. Under this domain, we included eight items: radio, fridge, bicycle, TV, motorbike, car, mobile phone and fan. Each item was recorded in binary form (yes/no or 1/0). The analysis reveals that 84 per cent of young people had access to a functioning TV, 97 per cent had mobile phones, 94 per cent had access to a functioning fan, and 47 per cent possessed motorbikes or two wheelers (Figure 2). Only 4 per cent possessed a car/truck, and almost two-thirds of households did not have a fridge or bicycle.

Figure 2. *Percentage distribution of sampled young adults (age 22) for consumer durables*



Source: Young Lives Older Cohort data (Round 5, 2015-16)

4. Perception about services at the community level

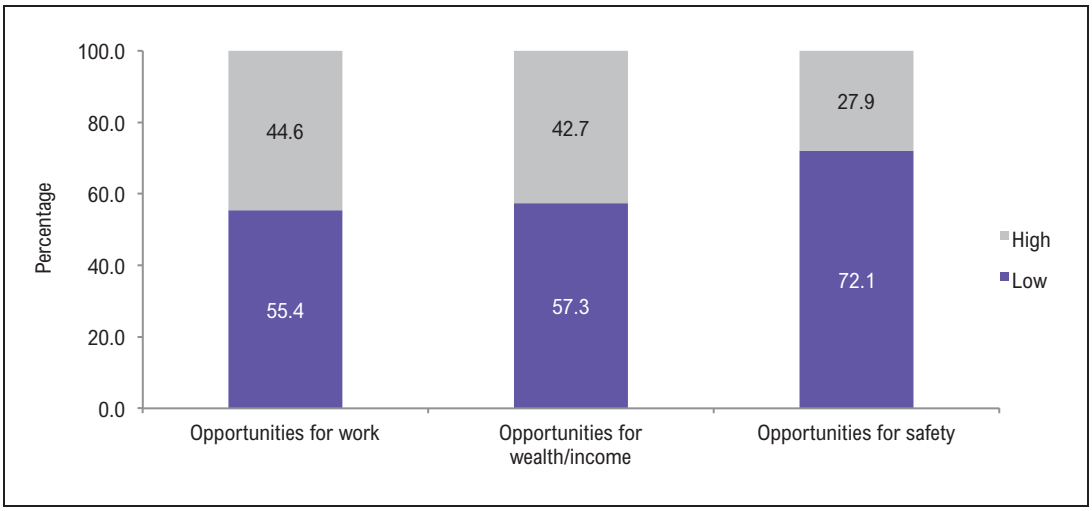
Community context has a strong effect on an individual's well-being as it helps to improve their health and quality of life. Individual well-being assessments can be made through individual scale domains using both subjective (e.g. feelings about life) and objective data (e.g. level of education, employment status etc.) and aggregated up to the scale of the given community in terms of opportunities for various services (Atkinson et al. 2017).

In each Young Lives survey round, youth were asked to comment on 'where on the ladder would you place the locality (where you currently live) in terms of opportunities for work, wealth/income and safety'. Each of these three items were recorded with values from 1 to 9, where 1 is lowest likely and 9 is the highest. Further, the three items have been re-

categorised into two scores based on mean value of respective variables. Values below the mean level are coded as low (0), and equal to and above the mean level as high (1).

Analysis shows that only 44.6 per cent of young people said that their community provided opportunities for work, and 43 per cent said that the community provided avenues for generating wealth and income. Close to two-thirds said that the community had very low safety (Figure 3).

Figure 3. *Percentage distribution of sampled young adults (age 22) for indicators of perception about community*

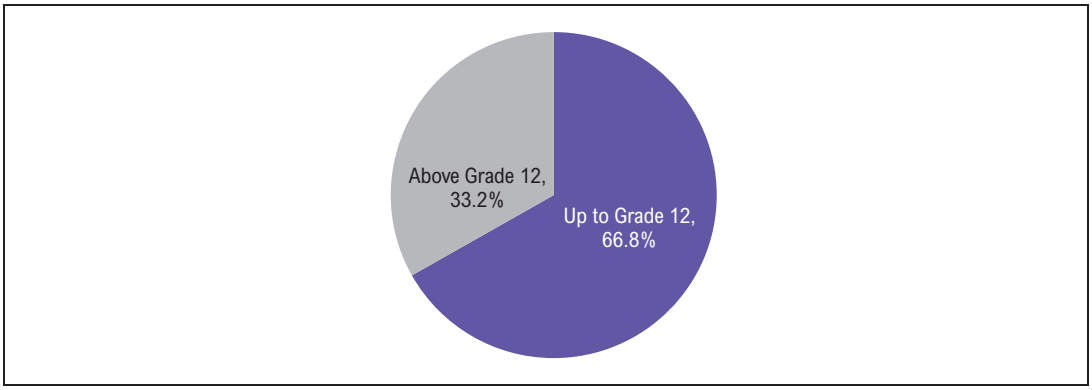


Source: Young Lives Older Cohort data (Round 5, 2015-16).

5. Education status

Young people aged 22 who have completed secondary schooling are more likely to meet their aspirations and develop the necessary skills and self-confidence as they enter adulthood. Young Lives collected data on education level by asking each respondent what was the highest grade they had completed. Results indicate that by age 22, about two-thirds had completed up to Grade 12 and the remaining one third were in above Grade 12.

Figure 4. *Education status of sampled young adults (age 22)*



Source: Young Lives Older Cohort data (Round 5, 2015-16).

6. Health

The health status of an individual plays a key role in building their well-being. Many aspects, such as chronic conditions, mental illness, or disability, can be considered for measuring health status. Young Lives asked individuals to rate their general health on a 5-point Likert scale ranging from 1 to 5, where 1 indicates very poor and 5 very good health status. The question regarding rating general health was further recoded into two categories on the basis of mean value (3.8). Therefore, respondents reporting their general health between 0 to 3 were recoded as 0, denoting poor health, and between 4 and 5 recoded as 1, indicating good health status. About 27 per cent of youth rated their general health as poor while the remaining 73 per cent rated it as high.

7. Individual subjective well-being

Subjective well-being refers to a cognitive process of contentment, satisfaction or happiness derived from optimal functioning (Lindert et al. 2015). Cantril (1965) suggested a ladder to capture perception of life satisfaction, also known as the Cantril Self-Anchoring Scale. It consists of the following:

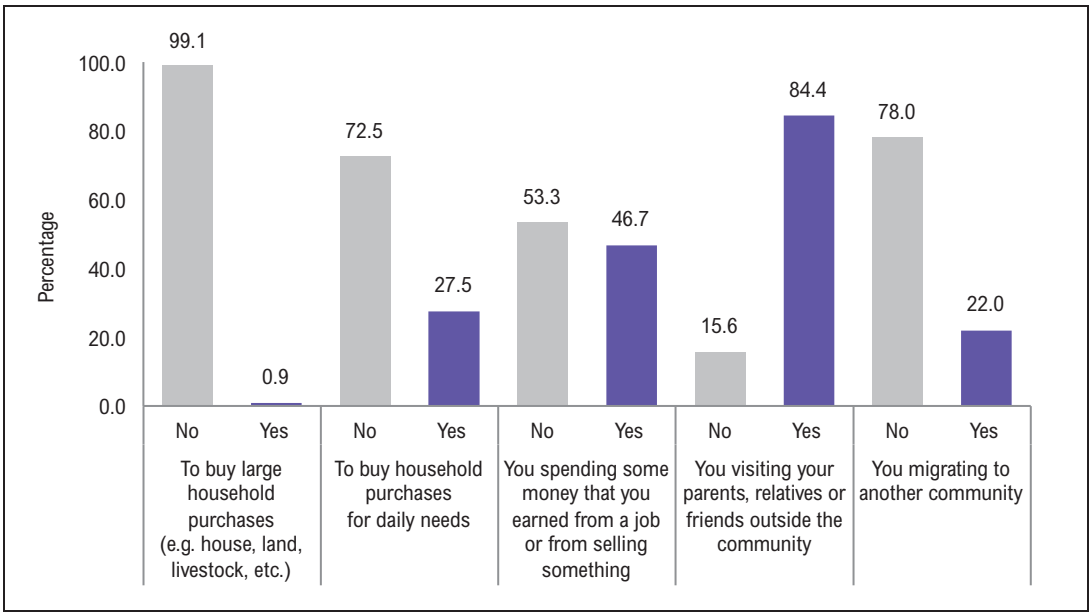
- A ladder with steps numbered from zero at the bottom to 9 at the top.
- The top of the ladder represents the best possible life for respondent and the bottom of the ladder represents the worst possible life.
- Respondents are asked, 'On which step of the ladder would you say you personally feel you stand at this time?' (ladder-present).
- Respondents are also asked, 'On which step do you think you will stand about five years from now?' (ladder-future).

Following Cantril's ladder, while collecting data on life satisfaction, Young Lives asked 'where on the ladder do you feel you personally stand at present time?' and data were gathered on a scale of 1 to 9, where 1 is the worst satisfaction and 9 the best satisfaction. The mean value of subjective well-being was found to be 5. Values below the mean level were coded as low, and above and equal to the mean level coded as high levels of life satisfaction. Findings reveal that 64.5 per cent of youth reported subjective well-being above the mean level, indicating relatively high subjective well-being, whereas 35.4 per cent reported low subjective well-being at present.

8. Decision-making

Participation in household decision-making is key to shaping well-being. Young Lives collected data related to household decision-making and asked respondents whether they had any say regarding large household purchases, household purchase for daily needs, spending their earned money, decisions related to visiting parents, relatives or friends outside the community, and ability to decide on migrating to another community. Each of the considered five items were recorded by allowing one of four responses; 0 = no**,** 1 = yes. Findings reveal that while 64 per cent of young adults said that they have decision-making powers related to large household purchases, 85 per cent were able to make decisions related to the purchase of household daily needs. Nearly 75 per cent of youth reported that they participate in decisions regarding spending of money that they earned from a job or by selling something, while 66 per cent made decisions related to migrating to another community (Figure 5).

Figure 5. *Percentage distribution of sampled young adults (age 22) for say on household decision-making*



Source: Young Lives Older Cohort data (Round 5, 2015-16).

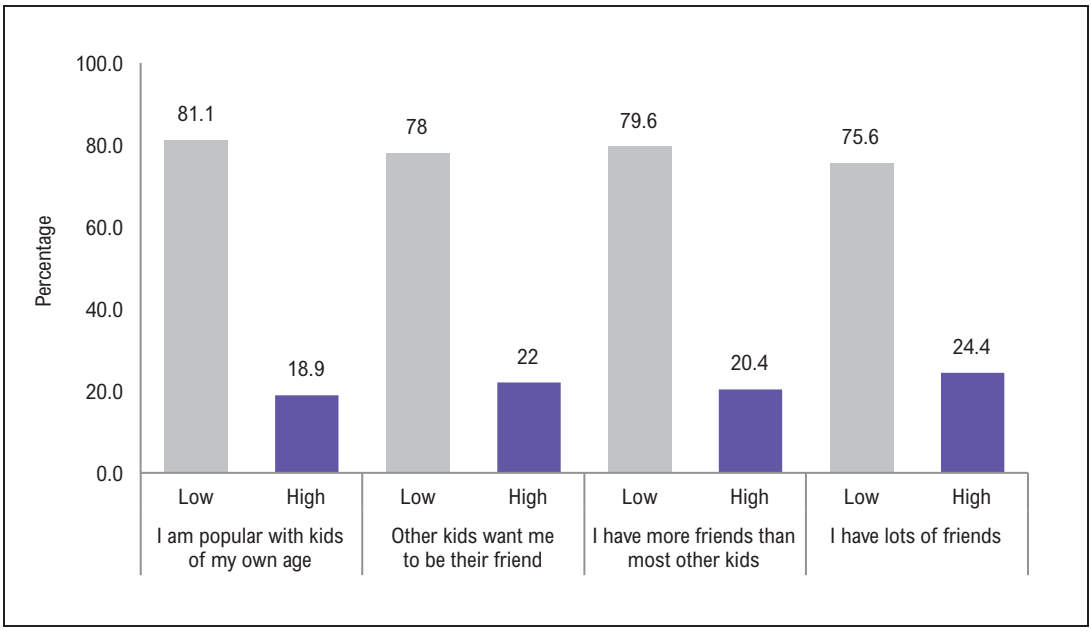
9. Inclusion

Social inclusion can help people not only by increasing their knowledge and developing their social skills, but also by improving their psychological well-being (Gaydarov 2014). Inclusion consists of four items:

1. I am popular with people of my own age
2. Peers want me to be their friend
3. I have more friends than most other peers
4. I have lots of friends

Each of the items were labelled as 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. Each item was further re-categorised as low/high on the basis of mean value. Analysis reveals that only a quarter of the young adults agreed that they possessed lots of friends, while only 22 per cent said that peers wanted them as a friend (Figure 6).

Figure 6. *Percentage distribution of sampled young adults (age 22) for inclusion indicators*



Source: Young Lives Older Cohort data (Round 5, 2015-16).

10. Agency

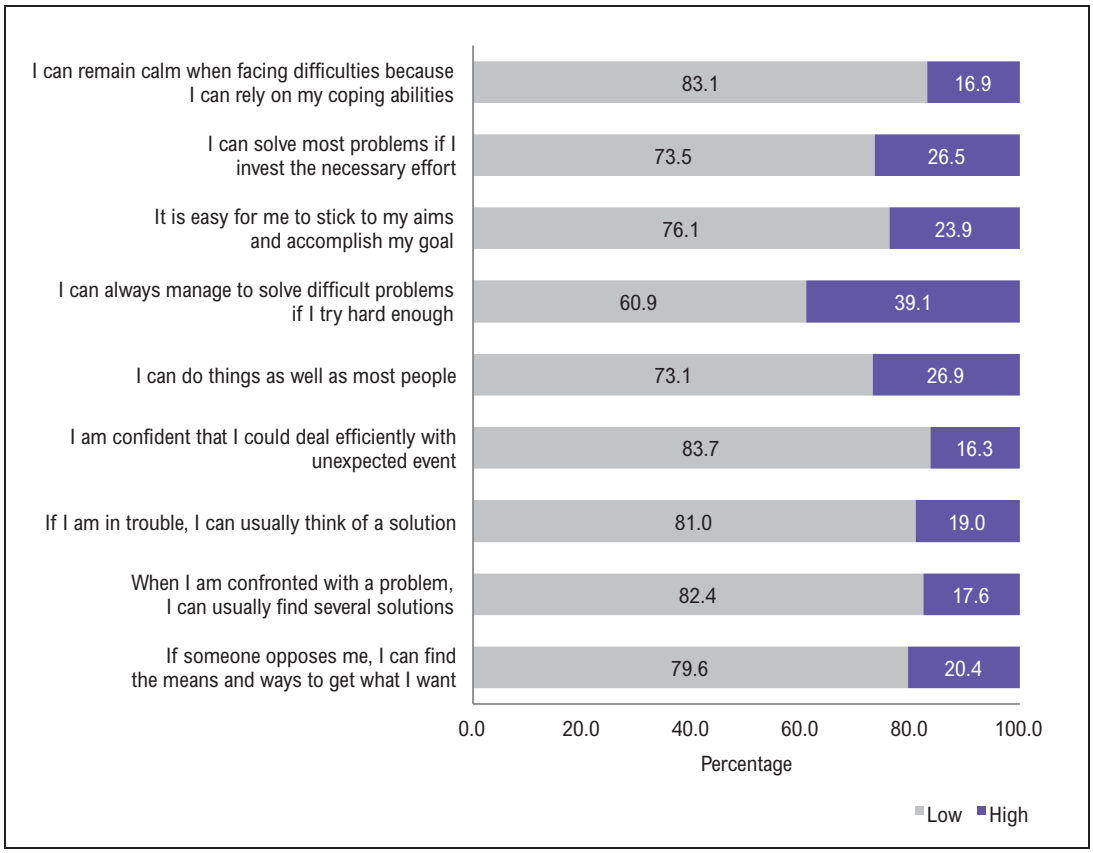
Sen's capability approach is concerned with an individual's agency in all spheres of life (economical, political, social, etc.) (Keleher 2014). Thus, agency is an important indicator for measuring well-being. From the Young Lives survey, we incorporated nine items which capture agency:

1. If someone opposes me, I can find the means to get what I want
2. When I am confronted with a problem, I can usually find several solutions
3. If I am in trouble, I can usually think of a solution
4. I am confident that I could deal efficiently with unexpected events
5. I can do things as well as most people
6. I can always manage to solve difficult problems, if I try hard enough
7. It is easy for me to stick to my aims and accomplish my goals
8. I can solve most problems if I invest the necessary effort
9. I can remain calm when face difficulties because I rely on my own coping abilities

Each of the nine items were labelled as 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. Each item was further recoded in binary form as low and high on the basis of mean value. Therefore, a low value of agency item is 0 if the agency item is below the mean level, and a high value of agency item is 1 if the agency item is equal or above the mean level.

Findings reveal that nearly 83.7 per cent of youth disagreed that they had the confidence to deal efficiently with unexpected events. Similarly, 73.5 per cent disagreed that feel that they could solve most problems if they invested the necessary effort. These findings indicate that the young adults have low problem-solving skills. At the same time, youth demonstrated low coping skills, since more than 80 per cent disagreed with the statement that they could remain calm when faced with difficulties. These results indicate that the sampled young adults have low levels of agency (Figure 7).

Figure 7. *Percentage distribution of sampled young adults (age 22) for agency indicators*



Source: Young Lives Older Cohort data (Round 5, 2015-16).

11. Self-esteem

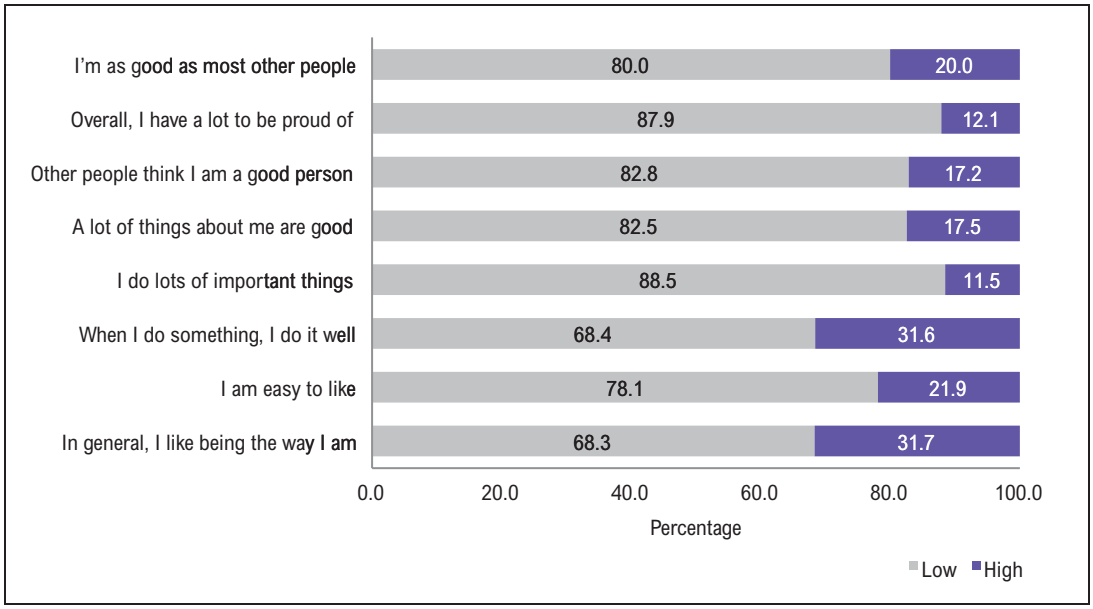
Self-esteem is a critical construct during one's life. Youth with low self-esteem are likely to perform poorly and it has been found that a large number of youth struggle with low self-esteem, which alters their well-being (Carroll 2002). Under this category, eight items were considered:

1. I'm as good as most other people
2. Overall, I have a lot to be proud of
3. Other people think I am a good person
4. A lot of things about me are good

5. I do lots of important things
6. When I do something, I do it well
7. I am easy to like
8. In general, I like being the way I am

Each of eight items were labelled as 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. Findings show more than 85 per cent of youth disagreed that they have a lot to be proud of (87.9 per cent) or that they do lots of important thing (88.5 per cent). In addition, nearly 83 per cent disagreed that other people think they are good or that a lot of things about them were good. About 68 per cent also disagreed that they liked being the way they are and also that they did tasks well (Figure 8). These findings indicate that a large proportion of the sample young adults had low self-esteem.

Figure 8. *Percentage distribution of sampled young adults (age 22) for self-esteem items*



Source: Young Lives Older Cohort data (Round 5, 2015-16).

12. Stress

Several studies have documented that stress and well-being are inversely associated (Clemente et al. 2016). From Young Lives, we selected two variables which capture the experience of stress among young people:

1. I worry a lot
2. I have many fears, I am easily scared

These were labelled as 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. About half of the young adults agreed that they worry, and 40 per cent agreed that they had fears and were easily scared.

13. Fertility decision-making

The desire to have children is found to be strong in all settings among couples (Lawrence et al. 2008). However, fertility decision-making as when to have children and how many to have is critical. Therefore, we included a fertility decision-making indicator under the umbrella of well-being. Young Lives asked sampled young adults whether they had any say on having children. Responses were recorded in binary form (yes/no). About 76 per cent of young people said they were involved in fertility decision-making, while 24 per cent were not. It is important to note that the Young Lives qualitative sub-study which explored adolescent girls and young couples' experiences of marital and fertility decision-making in two southern states (Andhra Pradesh and Telangana) of India, reveals that poor communications, imbalanced power relations, misconception about birth control, and cultural beliefs and social pressure were some of the important barriers affecting couples' fertility decision-making (Crivello et al. 2018).

5. Construction of the well-being index

After identifying indicators of well-being using the Young Lives survey, we ran PCA to create the well-being index. PCA results show that the number of observations was 890, number of components was 50, trace was 51, and Pearson's correlation co-efficient (Rho) was 0.65. During internal computation of the PCA analysis, 16 sample were dropped. Table 2 provides the rotation matrix, while Figure 9 presents the scree plot of eigenvalues, which measures the amount of variation in the total sample accounted by each factor and associated 99 per cent confidence interval. Scree plots show the eigenvalues on the y-axis and the number of factors on the x-axis, and always displays a downward curve. The point where the slope of the curve is clearly levelling off (the 'elbow') indicates the number of components that should be considered for the analysis.

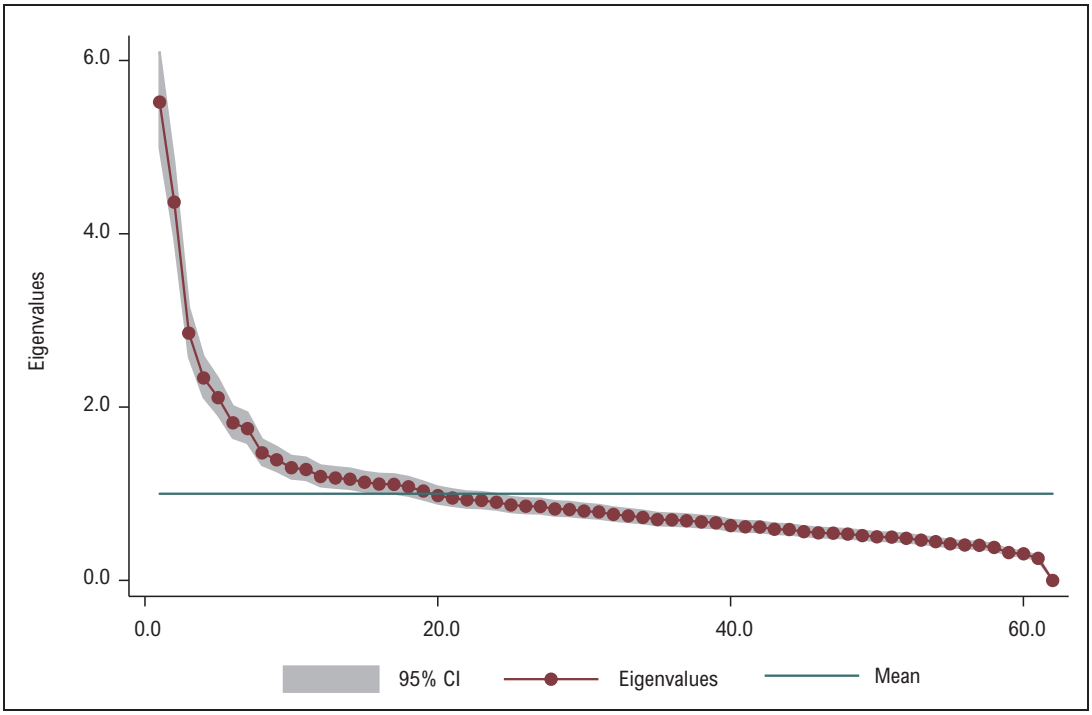
The highest variance is explained by the first component. Table 2 shows that there are 18 components which have eigenvalue greater than 1 and first extracted component has an eigenvalue close to 4.3. To construct an index of well-being one can either take all the components together which have eigenvalues greater than 1, or choose only the first extracted component, which has the highest eigenvalue.

Table 2. *Rotation matrix*

Component	Eigenvalue	Difference	Proportion	Cumulative	Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	4.351	0.282	0.085	0.085	Comp27	0.755	0.032	0.015	0.799
Comp2	4.069	1.396	0.080	0.165	Comp28	0.724	0.035	0.014	0.813
Comp3	2.673	0.260	0.052	0.218	Comp29	0.688	0.028	0.014	0.827
Comp4	2.413	0.075	0.047	0.265	Comp30	0.661	0.020	0.013	0.840
Comp5	2.338	0.407	0.046	0.311	Comp31	0.640	0.025	0.013	0.852
Comp6	1.931	0.084	0.038	0.349	Comp32	0.615	0.012	0.012	0.864
Comp7	1.847	0.246	0.036	0.385	Comp33	0.603	0.023	0.012	0.876
Comp8	1.601	0.110	0.031	0.416	Comp34	0.580	0.018	0.011	0.888
Comp9	1.491	0.180	0.029	0.445	Comp35	0.562	0.022	0.011	0.899
Comp10	1.311	0.025	0.026	0.471	Comp36	0.540	0.031	0.011	0.909
Comp11	1.285	0.069	0.025	0.496	Comp37	0.509	0.004	0.010	0.919
Comp12	1.216	0.024	0.024	0.520	Comp38	0.505	0.027	0.010	0.929
Comp13	1.193	0.051	0.023	0.544	Comp39	0.477	0.019	0.009	0.938
Comp14	1.141	0.015	0.022	0.566	Comp40	0.459	0.025	0.009	0.947
Comp15	1.126	0.037	0.022	0.588	Comp41	0.434	0.050	0.009	0.956
Comp16	1.090	0.036	0.021	0.609	Comp42	0.384	0.018	0.008	0.963
Comp17	1.054	0.045	0.021	0.630	Comp43	0.366	0.021	0.007	0.971
Comp18	1.009	0.023	0.020	0.650	Comp44	0.346	0.034	0.007	0.977
Comp19	0.986	0.069	0.019	0.669	Comp45	0.312	0.048	0.006	0.984
Comp20	0.917	0.031	0.018	0.687	Comp46	0.264	0.073	0.005	0.989
Comp21	0.885	0.035	0.017	0.704	Comp47	0.191	0.016	0.004	0.992
Comp22	0.850	0.010	0.017	0.721	Comp48	0.175	0.003	0.003	0.996
Comp23	0.840	0.006	0.017	0.738	Comp49	0.172	0.131	0.003	0.999
Comp24	0.834	0.054	0.016	0.754	Comp50	0.041	0.041	0.001	1.000
Comp25	0.780	0.012	0.015	0.769	Comp51	0.000	.	0.000	1.000
Comp26	0.768	0.013	0.015	0.784					

Source: Young Lives Older Cohort data (Round 5, 2015-16).

Figure 9. *Scree plot of eigen values after running PCA in STATA 14*



In this paper, we decided to extract 18 components with eigenvalues greater than one as together these explained 65 per cent of the total variance. These extracted 18 principal components were used to construct a composite index for well-being. The mean of this composite score based is 1.32. On the basis of the mean value, the composite score of well-being was further categorised into two levels, below the mean, and mean and above, giving two levels of well-being, low and high. The Kurtosis value for the well-being index is 1.77, indicating that the distribution graph of the index has a thinner tail than the normal distribution, in other words, the data lacks an outlier.

Cronbach's alpha test was also run to check the construct reliability of well-being index (Hair et al. 1998). If the value of Cronbach's alpha is equal or more than 0.70 then it is assumed that the index has construct reliability. Analysis indicates that the value of Cronbach's alpha is on the threshold level, which is 0.80, indicating that the well-being index has above average construct reliability. Results suggest that the well-being index, with 51 variables under 13 domains of well-being, is robust in nature and can be used for further research related to the well-being of young adults who are 22 years old. Moreover, when we examined the distribution of the sample youth using the well-being index, about 70 per cent of 22-year-old young adults have well-being below the mean, and only 30 per cent are equal to or above the mean level.

6. Background characteristics and well-being

In this section, we examine if any significant association exists between the levels of the well-being index and the background characteristics of young adults, using Chi square-tests. Table 3 shows the well-being status of youth at age 22 based on their background characteristics. Although gender is not significantly associated with well-being, birth order emerges as a significant characteristic, with 36.2 per cent of first-born youth having an above mean well-being level compared to 22.7 per cent of those who are fourth-born and above. Caste also emerges as a significant indicator associated with well-being. Only 21.4 per cent of Schedule Caste youth reported well-being above the mean, compared to 45.1 per cent from other castes. Mother's and father's education similarly play an important role in shaping well-being status as, while only 24.3 per cent of youth with illiterate mothers had a well-being score above the mean, twice as many youth (47.1 %) whose mother had 10 and more years of education reported well-being above the mean level. Similar results were found in relation to father's education. Location is also significantly associated with well-being status of 22-year-old youth. Only 27 per cent of rural youth reported well-being above the mean, in comparison to 37.2 per cent of urban youth. It is important to note that 24.5 per cent of those who were married below the legal age have well-being above the mean, compared to 27.7 per cent among those who married above the legal age. However, the association between marital status and well-being is not statistically significant.

Table 3. *Well-being status of young adults at age 22 by background characteristics*

Characteristics	Well-being status at age 22 (%)		
	Below mean	Mean and above	Total
Gender			
Male	69.4	30.6	435
Female	69.9	30.1	455
Birth order* **			
1st	63.5	36.51	252
2nd	68.5	31.49	289
3rd	73.1	26.92	182
4th and above	77.3	22.75	167
Religion			
Non-Hindu	74.5	25.5	106
Hindu	69.0	31.0	784
Caste* **			
Scheduled Caste	78.7	21.4	192
Scheduled Tribe	82.0	18.0	100
Backward Caste	69.1	30.9	414
Other Castes	54.9	45.1	184
Mother's education* **			
None	75.7	24.3	523
1-5 years	64.8	35.2	162
5-6 years	57.3	42.7	157
More than 10 years	52.9	47.1	17

Characteristics	Well-being status at age 22 (%)		
	Below mean	Mean and above	Total
Father's education* **			
None	78.2	21.8	372
1-5 years	69.1	30.9	149
5-6 years	63.7	36.3	234
More than 10 years	55.7	44.3	131
Location* **			
Urban	62.8	37.2	296
Rural	73.0	27.0	586
Marital status			
Unmarried	67.5	32.5	594
Married below legal age	75.5	24.5	159
Married above legal age	72.3	27.7	137
Total	**69.7**	**30.3**	**890**

Notes: Chi-square test of association: ***p<0.01, **p<0.05, *p<0.1.
Source: Young Lives Older Cohort data (Round 5, 2015-16).

7. Discussion and conclusions

Young people in the world play a pivotal role in building the future of society. As they enter adulthood and prepare to lead the next generation, there is a need to understand the level of well-being among young adults and how it differs according to their socio-economic characteristics. Several researchers have identified and developed a number of important constructs and indices to improve policies around youth, but there has been very little work undertaken on developing well-being indices in developing countries such as India. The construct of well-being is complex and the available literature does not provide a single framework for measuring it, with various domains and indicators that can be considered, and differing opinions on whether objective or subjective indicators are best.

In this paper, we have presented a composite index that quantifies levels of well-being among youth in India at 22 years old. Our index contains both subjective and objective indicators, in line with Ben-Arieh and Goerge (2001) who argued that well-being refers to both objective conditions for well-being and to the subjective perceptions and experiences of the individual. We developed the index using both theory and data driven approaches. We began by selecting the best possible indicators from a theoretical point of view and then explored the Young Lives data to identify indicators that best capture well-being. It is important to highlight that indicators of well-being vary across ages (for instance, for studying well-being among children we may need to look for indicators such as enrolment in pre-school and vaccination utilisation). Since we used data from Round 5 of the Young Lives survey, when the young adults were 22 years old, the index was unable to capture important indicators such as labour market insecurity, income, and work-life balance, because 13 per cent of sample young adults were still studying and another 7.7 per cent were combining study and work. Therefore, the well-being index is specifically for young adults in their early twenties and may not be valid for other age groups.

The well-being index is composed of 13 domains: access to housing services, housing quality, consumer durables, access to various services available in the community, education status, health status, level of life satisfaction, involvement in household and fertility decision-making, level of inclusion, agency, self-esteem, and stress. These domains are captured through 51 indicators. Using these indicators, we ran principal component analysis and created a well-being index. The internal consistency test and Cronbach alpha test demonstrated the validity of the index. Therefore, the constructed well-being index is reliable as a tool for assessing higher well-being among young people in their early twenties.

From the analysis of the well-being index it is clear that psychosocial well-being in terms of inclusion, agency, self-esteem and stress are concerning, as many of the young adults reported low score for these indicators. Better housing conditions, high involvement in household decision-making and high subjective well-being helped to improve overall well-being scores. We performed bivariate analysis to observe the variations of levels of well-being across various background characteristics such as gender, social group, location and parent's education. Analysis reveals that well-being status varied significantly by background characteristic. Interestingly, gender and marital status did not show significant association with levels of well-being. Almost equal percentage of young males and females showed low and high well-being. Significant difference across well-being levels were observed depending on birth order. Young adults who are first born showed relatively higher well-being than fourth and later-born young adults. Both mother's and father's education were also significantly and positively associated with well-being status. Young adults whose parents have 10 and more years of education have relatively higher well-being compared to those whose parents are illiterate.

McGregor (2018) argues that it is possible for policy purposes to conceive of well-being as involving three universal dimensions: material, relational and subjective. These arise from what a person has, what they are able to do with what they have and how they feel about what they have, can do and can be. We argue that well-being metrics need to be at the heart of informing policy formulation. Given the demographic dividend it is critical to identify gaps in the well-being of young people and allocate resources to minimise these among various groups such as Scheduled Caste and rural youth, and to fill gaps through relevant interventions such as life skills, given the low scores related to self-esteem and decision-making powers. Well-being indicators must be accepted as important tools for planning and shaping policies because they can provide policymakers, planners and service providers with an empirical basis for decision-making at every stage of the process. Longitudinal well-being data using a valid constructed measure could be utilised for evaluations from a baseline, which would allow assessments of whether policies have had an effect on well-being outcomes. Capturing the well-being of youth on a periodic basis is essential if we wish to demonstrate efficacy of programmes and policies that are currently being implemented to empower youth in India. Only then it will be possible to reach the vision of the UN Sustainable Development Resolution, that states a multi-dimensional conception of well-being: 'In these Goals and targets, we are setting out a supremely ambitious and transformational vision. We envisage a world free of poverty, hunger, disease and want, where all life can thrive. We envisage a world free of fear and violence. A world with universal literacy. A world with equitable and universal access to quality education at all levels, to health care and social protection, where physical, mental and social well-being are assured' (United Nations General Assembly 2015, 2/35).

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Appendix

Domains and indicators of Young Lives Well-being Index, OECD Better Life Index and Global Youth Well-being Index

Young Lives Well-being Index (age 22 years)		OECD Better Life Index (entire age span)		Global Youth Well-being Index (age 15-24 years)	
Domain	**Indicators**	**Domain**	**Indicators**	**Domain**	**Indicators**
Basic services	Access to electricity	**Housing**	Dwellings without basic facilities		
	Access to improved water		Housing expenditure		
	Access to sanitation				
	Access to adequate cooking fuel				
Housing quality	Rooms available per person		Rooms per person		
	Quality of wall				
	Quality of roof				
	Quality of floor				
Consumer durables	Radio				
	Fridge				
	Bike				
	TV				
	Motor				
	Car				
	Mobile phone				
	Fan				
Perception at community level	Opportunities for safety	**Safety**	Feeling safe walking alone at night	**Safety and security**	Youth road fatalities
	Opportunities for wealth/income		Homicide rate		Internal peace
	Opportunities for work				Youth interpersonal violence
					Human trafficking
					Youth perceptions of violence
Education status	Highest grade completed	**Education**	Educational attainment	**Education**	Youth literacy
			Student skills		Public spending on education
			Years in education		Lower secondary enrolment
					Lower secondary completion
					Youth satisfaction with education
Health	General health	**Health**	Self-reported health	**Health**	Adolescent fertility rate
			Life expectancy		Youth self-harm fatalities
					Youth stress
					Youth perceptions of health
					Youth tobacco use
Individual subjective well-being	Where on the ladder do you feel you personally stand at present time?	**Life satisfaction**	Life satisfaction		
Involvement in household decision-making	Large household purchase	**Income**	Household net adjusted disposable income	**Economic opportunity**	GDP per capita
	Household purchase for daily needs		Household net financial wealth		Global competitiveness
	Spending some money that an individual earned	**Job**	Labour market insecurity		Youth not in education, employment or training
	Visiting parents' relatives or friends outside the community		Employment rate		Youth unemployment
	Migrating to another community		Long-term unemployment rate		Early stage entrepreneurial activity
Inclusion	Popular with people of own age		Personal earnings		Youth borrowing
	Peers want to be friend	**Community**	Quality of support network		Youth expectations for future standard of living

Young Lives Well-being Index (age 22 years)		OECD Better Life Index (entire age span)		Global Youth Well-being Index (age 15-24 years)	
	Have more friends than most other peers	**Work-life balance**	Employees working very long hours	**Gender equality**	Restricted civil liberties for women
	Have lots of friends		Time devoted to leisure and personal care		Female early marriage rate
Agency	If someone opposes, I can find the means to get what I want	**Environment**	Air pollution		Women's fear of walking alone
	When confronted with a problem, I can usually find several solutions		Water quality		Youth perceptions of gender quality
	If in trouble, I can usually think a solution	**Civic engagement**	Stakeholder engagement for developing regulations	**Citizen participation**	Democracy
	Confident that I could deal efficiently with unexpected events		Voter turnout		Youth volunteering
	Can do things as well as most people				Youth policy
	Can always manage to solve difficult problems, if I try hard enough				Age for office
	It is easy for me to stick to aims and accomplish goals				Youth perceptions of government
	Can solve most problems if I invest necessary effort			**ICT**	ICT development
	Can remain calm when face difficulties because I rely on my own coping abilities				Youth internet access at home
Self-esteem	I'm as good as most other people				Internet usage
	Overall, I have a lot to be proud of				Mobile phone subscriptions
	Other people think I am a good person				
	A lot of things about me are good				
	I do lots of important things				
	When I do something, I do it well				
	I am easy to like				
	In general, I like being the way I am				
Stress	I worry a lot				
	I have many fears, I am easily scared				
Involvement in fertility decision-making	Having children				

Exploring Well-being Among 22-Year-Old Youth in India

Well-being is a multi-dimensional construct integrating physical, cognitive and socio-emotional dimensions of an individual. It refers to both objective measures of well-being as well as the subjective perceptions of an individual related to their circumstances. Concepts of poverty and well-being are closely intertwined. It has often been observed that economic development does not always translate into human development and well-being. Therefore, the measurement, tracking and promotion of well-being, especially the well-being of youth (aged 15-24) who constitute 19.1 per cent of India's population, has grabbed the attention of policymakers.

This working paper presents a composite index that quantifies levels of well-being among 22-year-old young adults in India. The index is composed of 13 domains captured through 51 indicators. Applying the index to the Young Lives Older Cohort reveals that seven out of ten young adults have well-being that is below the mean. Analysis also reveals that psychosocial well-being in terms of inclusion, agency, self-esteem and stress are areas of concern, with many young adults reporting low scores for these indicators. This validated well-being index for youth aged 22 could potentially be used as a powerful tool to influence and inform youth-based policies.

Young Lives

An International Study of Childhood Poverty

About Young Lives

Young Lives is an international study of childhood poverty, involving 12,000 children in four countries over 15 years. It is led by a team in the Department of International Development at the University of Oxford in association with research and policy partners in the four study countries: Ethiopia, India, Peru and Vietnam.

Through researching different aspects of children's lives, we seek to improve policies and programmes for children.

Young Lives Partners

Young Lives is coordinated by a small team based at the University of Oxford, led by Professor Jo Boyden.

- *Ethiopian Development Research Institute, Ethiopia*
- *Pankhurst Development Research and Consulting plc, Ethiopia*
- *Centre for Economic and Social Studies, Hyderabad, India*
- *Save the Children India*
- *Sri Padmavathi Mahila Visvavidyalayam (Women's University), Andhra Pradesh, India*
- *Grupo de Análisis para el Desarollo (GRADE), Peru*
- *Instituto de Investigación Nutricional, Peru*
- *Centre for Analysis and Forecasting, Vietnamese Academy of Social Sciences, Vietnam*
- *General Statistics Office, Vietnam*
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