Sustainable Human Development Across the Life Course

Banati, Prerna

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Introduction: Measuring Sustainable Human Development Across the Life Course

Prerna Banati

The sustainable development challenge

In 2015, electrifying optimism surrounded the adoption of the Sustainable Development Goals (SDGs) as world leaders agreed to a 15-year deal to advance economic, social and environmental development globally, with a focus on those most left behind. The successor to the Millennium Development Goals (MDGs), the SDGs laid out in ‘The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet’ (United Nations, 2015a) describes 17 ambitious goals, seen in Figure 0.1, that include: ending poverty and ensuring well-being for all ages, inclusive and equitable education, gender equality and empowerment, decent work and reducing inequality within and among countries (United Nations, 2015b). The global indicator framework, developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs), was agreed to at the 47th session of the UN Statistical Commission held in March 2016 and contains 230 indicators and 169 targets (United Nations, 2016).

At its heart, sustainable development is about families and communities living in peace and prosperity, their children growing up safe and healthy, and transitioning to productive adulthood. Chambers and Conway (1991, p 6) were perhaps the first to define sustainable livelihoods ‘which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes
Figure 0.1: The UN’s Sustainable Development Goal framework

Source: United Nations, 2015a
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net benefits to their livelihoods at the local and global levels and in the short and long term’.

Global goals such as the SDGs and the MDGs have undoubtedly driven sustainable development progress. Global averages have improved: children born today are less poor, and experience generally rising living standards, with many families living in better homes, and having access to consumer goods, and services such as electricity, water and sanitation and roads. Major improvements in health and education have been documented, with children born today less likely to be stunted and more likely to complete primary school than their counterparts born in 2000 (United Nations, 2015b).

Keeping in mind the lessons learned from the historical application of global goals (United Nations, 2015b), when looking forward, three key challenges beset the realization of the Sustainable Development agenda.

The first challenge is that progress has not been equitable – and inequalities are not adequately monitored and detected. Throughout the MDG period, advancements were uneven across regions, genders and age groups (Verma and Petersen, 2018). Disadvantage is increasingly concentrated in the most vulnerable and marginalized, and, arguably, inequalities are becoming further entrenched (Edwards, 2015). Gaps are growing between rich and poor; between rural and urban areas; between ethnic majority and ethnic minority children (OECD, 2015). Families that were left furthest behind now face the greatest risks, such as impact from health shocks or repeated illness leading to lost income.

The second challenge is the complexity of multiple influences – in particular, how sectoral inputs converge to create development success. As with its predecessor the Millennium Development Goals, the SDGs are organized in sectoral silos. However, successful human development relies on multiple, interacting and compounding influences sourced from different levels of the social ecology (individual, family, community, state). Understanding how inputs are interconnected (complementary or antagonistic), and in particular the interactions of social norms with development services, is crucial for effective and efficient prioritization of development actions. There is abundant evidence that achieving learning outcomes among children relies on inputs that extend beyond the education sector, such as how parents and communities value a child’s education (UNGEI, 2019). Good health, physical safety and adequate nutrition are implicated in learning success. The health sector has arguably gone the furthest in recognizing the social determinants of health, including the critical roles of poverty and inequality in shaping good health outcomes (Marmot and Wilkinson, 2005).
The third challenge relates to timing – in particular, when to intervene and how to sequence interventions. With the exception of the target of 2030, the SDGs do not provide insight into temporal sequencing, and the importance of timing to human development. The timing of interventions is crucial to success and, unsurprisingly, benefits seen in one age group can be derived from interventions in an earlier age group with sustainable improvement sometimes requiring multiple interventions (Banati and Lansford, 2018; Banati et al, 2015). The reference to timing can be seen in two ways (Elder, 1994). The first relates to age – both the biological meanings but also the social meanings which are vested in culture and norms. The timing of social roles (such as parenthood) and events (such as marriage) play a role in shaping development trajectories. The second relates to historical time, which is seen, for example, by contrasting the experiences of older and younger generations of the same history. By contrasting how the SDGs play out for these two different cohorts we can gather insight into the role of historical timing and therefore social change in improving human well-being.

About this book

The approaching mid-point of the Sustainable Development Goal era provides an opportune moment to review these challenges and take stock of progress. Determining where acceleration is needed, or if course correction is more appropriate, will rely on sound measurement of where we are relative to the global commitments. The current efforts to measure the SDGs have been helpful in telling us that we are missing the mark as defined by agreed targets. These measures have drawn our attention to the existence of problems, but have been unable to measure the dynamic, complex and intergenerational nature of human development.

This book brings attention to the value to be gained from applying the powerful analytic potential of longitudinal data to understand and measure global development challenges such as the SDGs. This is the first effort to curate findings from a collection of longitudinal studies operating in over 50 different countries and working across a number of development sectors. These studies were selected to showcase the complexity, as well as the diversity, of development challenges ranging across non-communicable diseases, gender equality, Human Immunodeficiency Virus (HIV) prevention, education trajectories, social protection, child marriage, disability, urbanization, psychosocial health and parenting. Studies that lent
themselves to multisectorality were prioritized. The selection criteria for studies include those currently collecting data (active studies) with findings demonstrating some direct relevance for the sustainable development agenda. In addition, the selection sought to highlight innovation in multisectorality, or cross-sectoral issues, or address specific methodological challenges associated with the longitudinal design to evaluate policy impacts. Taken together, the studies illustrate the strength of the longitudinal design to capture the situation of inequalities, the time-sensitivity of multiple convergences that impact lifetime outcomes, including the complex dynamics and interplay of human agency and the constraints of social norms and institutions; and how these influences shape intra- and intergenerational trajectories of individuals and ultimately societies.

Given the centrality of children to the SDG transformational agenda, this collection focuses on child and adolescent development. The younger population have most to gain from the success of the SDGs, and young people have played a key role in determining the priorities of the sustainable development agenda (Verma and Petersen, 2018). In some ways, the success of the SDGs hinge on how well they do for children. As the global goals are operationalized in this coming decade of action, improvements in the lives of today’s children as they grow will determine the success of global investments in the sustainable development agenda.

The unique value of the longitudinal design to understand development challenges

Longitudinal studies have had enormous value, contributing to the construction of effective public policy and design of effective public programmes. Many governments have invested in multiple waves of longitudinal data as well as new studies. The UK has funded four national longitudinal studies, two of which (the National Survey of Health and Development, established in 1946; and the National Child Development Study, established in 1958) have continued for over 50 years. Ireland (Growing up in Ireland), Denmark (the Danish National Birth Cohort) and the US (the National Longitudinal Study of Youth) have invested in nationally representative cohort studies.

With growing interest in learning about ‘what works’ in developing settings, donors and countries are investing in longitudinal study designs, and these are now widespread throughout the globe, including in poor-country settings with weak infrastructure. Yet many pressing development questions remain and, despite these investments,
there are few fora for presentation and discussion of policy and programme-relevant research.

A longitudinal study begins by identifying key research questions relevant for the focus group under investigation. A cursory review of existing longitudinal studies shows that data collection can happen as often as every few months, or every few years. In some cases, there may be decade-long gaps between questionnaires (such as seen in the Instituto de Nutrición de Centroamérica y Panamá [INCAP] study in Guatemala). Data collected in each wave appreciates the value of the study significantly. Subsequent waves of data collection often depend on funding. The diversity of longitudinal studies includes birth cohorts, impact evaluations, observational studies, panel studies or censuses (UNICEF, 2014).

The unique added value of longitudinal research has been previously documented (Banati, 2018; Banati et al, 2015) and is summarized in Table 0.1.

A core strength of the longitudinal design is that it can capture the dynamic nature of development. By tracking households, families or individuals in changing contexts over time, such data can track movements into and out of situations, for example how households move into and out of poverty. Crucially, longitudinal studies can provide an understanding of the drivers underpinning SDG indicators; provide an assessment of the timing of development windows; quality check cross-sectional estimates; and help determine ‘what works’ in programme and policy interventions.

Longitudinal research helps us to understand trajectories and can aid our efforts to understand human development by describing pathways or long-term patterns of change (Elder, 1985, p 31; Elder et al, 2003; Liebbroer and Dykstra, 2000). The individual life course is made up of many interconnected trajectories including career, family and educational pathways (Settersten Jr and Mayer, 1997). These trajectories are ‘punctuated by a sequence of successive life events and transitions, which are brief in scope, and refer to changes in state’ (Settersten Jr and Mayer, 1997). Each transition influences the probability of the next occurring. An event is usually conceptualized as a relatively abrupt change, while a transition is usually conceptualized as a more gradual evolving change.

Transitions and events are typically placed within, and help describe, a larger trajectory, and the trajectory gives them a clear meaning (Settersten Jr and Mayer, 1997; Elder, 1985). Turning points denote a substantial change in the direction of one’s life and can be determined either subjectively or objectively (Hareven, 2000, pp 153, 329; Settersten Jr and Mayer, 1997). Critical periods are a phase within the life span during which there is a heightened sensitivity to exogenous stimuli.
Table 0.1: Unique added value of longitudinal research

<table>
<thead>
<tr>
<th>Longitudinal studies can help to…</th>
<th>Example</th>
<th>Implications for development programming</th>
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<tbody>
<tr>
<td>1. Understand enduring change and equitable progress by analysing the dynamics of risk in a given cohort.</td>
<td>Evidence suggests there is significant movement into and out of poverty (known as churning). Some studies show the poor are poor some of the time only. But some families stay poor. Analysis of households that experience repeated or persistent poverty can help understand who stays poor, and what strategies can be employed to prevent families from falling below the poverty line.</td>
<td>In the UK, the 2006 Action Plan on Social Exclusion drew on evidence from the British Household Panel Survey. This survey revealed that ‘a small group of people experience particularly persistent and severe deprivation and exclusion throughout their lifetime’. The resulting Action Plan argued that tackling such marginalization requires highly localized and tailored responses that cut across government departments. In Indonesia, such analysis using longitudinal data from Indonesia Family Life Survey (IFLS) improved the targeting of programmes and made the case for the expansion of social safety nets.</td>
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<tr>
<td>2. Unpack drivers and determinants of well-being outcomes, and reveal hidden problems and opportunities.</td>
<td>Analysis of data from the British Cohort Study of children born in 1970 showed that by the time they entered school, higher-ability children from disadvantaged backgrounds were overtaken by less able children from privileged backgrounds. In Jamaica, longitudinal research linked premature and early deliveries to undiagnosed hypertension in pregnant mothers (Samms-Vaughn, 2014).</td>
<td>In the UK, free pre-school was introduced in disadvantaged areas. In response to the longitudinal evidence generated in Jamaica, an information card added to expectant mothers’ maternity record books advised them of the signs and risks of hypertension. This led to a 60% decline in hypertension and related complications in pregnancies and deliveries (Samms-Vaughn, 2014).</td>
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### Table 0.1: Unique added value of longitudinal research (continued)

<table>
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<th>Longitudinal studies can help to…</th>
<th>Example</th>
<th>Implications for development programming</th>
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<td>3. Illuminate trends, trajectories and movements in people’s lives, including reflecting on how patterns evolve over time and along the life cycle.</td>
<td>Young Lives longitudinal research in Vietnam has shown a high share of children in the bottom quintile in mathematics scores at age 12 had left school by age 15, further limiting their life chances. A core strength of longitudinal research is the ability to look beyond statistical means to reflect on how patterns evolve over time and along the life cycle.</td>
<td>This analysis suggests that investment in education and learning for primary- and secondary-age children is crucial to ensure long-term well-being, with impacts on future annual earnings and increased labour market participation.</td>
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<tr>
<td>4. Aid interpretation of the unforeseen by providing a platform for identifying and following the unexpected.</td>
<td>A longitudinal study operating during the time of the 1984 famine in Ethiopia (Dercon and Porter, 2014) was instrumental in identifying the long-term impacts on adults who experienced the famine as infants. The authors find that by adulthood, affected infants were significantly shorter by at least 5 cm.</td>
<td>The analysis in Ethiopia pointed to the need to provide additional support to the children of this cohort, whose height loss could lead to income losses of around 5% per year over their lifetime. The evidence also suggests that the relief operations at the time made little difference to those who survived.</td>
</tr>
<tr>
<td>5. Contribute to the evidence of the effectiveness of development interventions by identifying what works in which contexts, and to improve the targeting of interventions.</td>
<td>Impact evaluations including randomized control trials and quasi-experimental studies are now commonly seen. These are designed to evaluate the impact of an intervention. The Transfer Project is a multi-country effort to look at the impacts of unconditional cash transfers on a diverse set of development outcomes.</td>
<td>Results of the Zambia impact evaluation of the social case transfer were widely disseminated and helped convince the government to scale-up the programme nationally. The government increased its budget allocation, with an initial investment in evaluations of US$5 million leveraging US$150 million for children over five years. The programme currently reaches 12% of the population (Transfer Project, 2020).</td>
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### Longitudinal studies can help to…

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<td>By observing changes to context or behaviours over time, such as internet use, longitudinal studies can highlight research questions for future study. The ALSPAC study of children of the 1990s living in Bristol explored the role of online connectivity in reducing suicide. Evidence demonstrated the preventative influence of the internet; while some participants used online peer support groups, formal online help was unsatisfactory (ALSPAC, 2020).</td>
<td>The study advocated for improving clinicians’ understanding of the online world and supported a review of web-based suicide-prevention services for vulnerable people.</td>
</tr>
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Source: Adapted from UNICEF, 2014
These periods are particularly conducive to programmatic interventions and growing evidence indicates that critical periods exist beyond prenatal development into early childhood and even older children (see Banati and Lansford, 2018).

**Insights to SDG challenges from longitudinal research**

In this section, a deeper review of the three key challenges to advancing the SDG agenda is presented, using longitudinal examples that exploit three of the six value-added contributions of longitudinal research presented in Table 0.1.

**Challenge 1: Addressing inequalities through longitudinal analysis of risk dynamics**

Increasing inequalities are undermining development progress, and contributing to social and political instability (Houle, 2018). In particular, as income inequalities and the difference between rich and poor widens, progress towards meeting the poverty eradication goal is in jeopardy. While efforts to disaggregate data (by sex, income and geography) to measure inequalities is part of the current SDG measurement frame, this doesn’t permit the detection of movements into and out of extreme conditions such as poverty. Indeed, a number of studies presented in the volume demonstrate the effectiveness of a design that represents more dominantly the most marginalized groups that the SDGs are purposely targeting.

One way in which longitudinal research can inform the SDG challenge is to assess the lasting effect of experiencing a given ‘state of being’ such as poverty, and the ways in which exiting this ‘state of being’ can be achieved. Differences, by country, in the persistence of poor outcomes for some groups (such as child poverty, malnutrition in childhood, bullying in school, inactivity in youth, and so on), how populations move into and out of such experiences, and their lasting effect, can inform priority setting in country responses to the SDGs, as well as the design of policy interventions to address them. What is evident is that a simple indication of the level – as most goals will be operationalized in the SDGs – provides insufficient information on the dynamics of risk to help policy makers design the most appropriate response.

Literature on poverty dynamics provides some of the best illustrations of how longitudinal findings augment cross-sectional data. Analysis of
poverty dynamics captures the mobility of households or individuals by measuring their well-being over time (rather than static measures of poverty, which cannot detect the dynamics of poverty). In most developing country settings, where homes are subject to major economic fluctuations due to seasonal agriculture, or a sick adult requiring medical care, the dynamics of poverty are essential to measure, and central to our aspiration of improving upward economic mobility. Indeed, countries with identical poverty and inequality levels may have different levels of mobility across the poverty line, changing the identities of who is poor and not to different extents. Indeed, the only cases where cross-sectional or static assessments of poverty are adequate are when there is complete immobility in experiences of poverty (Yacub, 2000).

For example, longitudinal data can demonstrate how individuals who are vulnerable but not considered poor by cross-sectional estimates can also fall below the poverty line. Three rounds of panel data collected for Indonesia between 2008 and 2010 showed that while approximately 25% of all Indonesians were living under the poverty line in at least one round, 43% fell below the official line at least once (World Bank, 2012). These findings reinforced the case for the expansion of social assistance coverage to both poor and ‘vulnerable non-poor people’ (World Bank, 2012). ODI analysis of Tanzania, Uganda and Vietnam shows that although these three countries have comparable poverty rates around 20%, the proportion of the poor living in poverty for at least two out of four consecutive years has been higher in Vietnam and lower in Tanzania (about 10–12% of total population in the former and 5–6% in the latter; ODI, 2014). Of interest, although Uganda and Vietnam have relatively higher rates of persistent poverty than Tanzania, more people demonstrated upward financial mobility in Uganda and Vietnam over the period of study. In this case of Tanzania, Uganda and Vietnam, in the absence of longitudinal data, the result would be that all countries would assume they had similar poverty challenges, requiring similar policy responses, when in reality they do not.

Longitudinal surveys that map changes to well-being across the life course also have the advantage of being able to identify sociodemographic groups in society with a higher or lesser vulnerability to risk. For instance, single-parent families or large families may be likely to experience higher risks of persistent poverty, as might people with lower levels of education. Policy makers with information on which groups are at the highest risk of poor outcomes can focus their interventions and resources on those in need of additional support. A good example of such analysis is presented in work by Plavgo
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(Chapter 2 in this volume). Using 15 years of data from the Young Lives study, the author unpacks the unequal educational trajectories observed among children in Ethiopia by investigating the relationship between children’s early cognitive abilities and later parental decisions regarding investments in higher levels of education. The findings identify two sources of inequality in educational opportunities. Firstly, poorer children on average develop lower cognitive abilities during childhood which negatively affect their later school transitions. Secondly, poorer children are considerably less likely to move on to secondary and higher education, including when their initial endowments are high. Policy implications from this study – exploiting social protection interventions that level household living conditions and access to pre-schools, as well as provision of financial support and improvements in secondary school accessibility to reduce barriers for poorer children to transition to higher education – have relevance to SDG 4 on advancing inclusive and equitable quality education and promoting lifelong learning.

Challenge 2: Addressing multiple influences by unpacking drivers of well-being

Bronfenbrenner’s (1986, p 725) seminal work explored the nature of contextual influences affecting families, including what he called the ‘genetic–environment’ interaction. In exploring families, he notes the role of three ‘exosystems’ that also affect the development of the child through family processes, namely parental employment and work; family support networks; and the wider community. In subsequent work, the social–ecological model developed by Bronfenbrenner (2005) extends to include structural forces, including the policy environment in which children grow up. Well-being at a particular life stage is the result of many interacting influences operating across the social ecology.

Bell and colleagues (2013) define a framework for advancing equity in child health, applying Marmot’s social determinants approach to children, a progressive model that promotes a wider vision of what influences health outcomes. Within the framework, emphasis is placed on the macro-level context, including ‘wider national and transnational influences, including aspects of the political, economic, social, environmental and historical context, cultural norms and values, governance and human rights and the experience of violence and armed conflict’ (Bell et al, 2013, p 7). The importance of descriptive cross-sectional statistics to support the prioritization of issues is noted. At the same time, the authors note that the evidence base on the impact
of determinants and drivers requires strengthening longitudinal studies. They articulate the gaps that longitudinal data could fill, including

what factors are associated with children doing better than might be expected (protective factors), and worse than expected (risk factors). Cohort analysis could be utilised to determine if selected children’s outcomes change over time and the drivers of that change; and whether inequalities in well-being within cohorts are stable or change over time. (Bell et al, 2013, p 35)

In an extensive review of over 100 longitudinal studies that was designed to explore links between educational outcomes and other well-being outcomes (health, material well-being, risk behaviours and so on), Richardson (2018) undertook a meta-analysis controlling for study factors (for example, country of test, sample sizes, significances, subsampling). The authors’ preliminary findings suggest some clear priorities for interventions. In particular, health factors and experiences of neglect and abuse in childhood are significantly more likely to explain a greater variation in educational outcomes in later childhood than material resources, and educational outcomes in childhood are more closely linked to adult material well-being, risk-taking and family functioning than to health outcomes.

A number of longstanding observational longitudinal studies over the last decades (such as Add Health, the British Birth cohorts, National Longitudinal Survey of Youth [NLSY] or Growing up in Ireland) present a wealth of information on the multidimensional nature of children’s lives. By unpacking influences on child well-being across the life course, they continue to clear the fog by empirically developing the evidence base of what drives healthy and happy child outcomes. Work by Lansford and colleagues (Chapter 4 in this volume) illustrates this using longitudinal data from 10 years of the Parenting across Cultures project in nine countries (China, Colombia, Italy, Jordan, Kenya, Philippines, Sweden, Thailand and the United States). The team have used longitudinal data to understand processes operating at different levels, including biological, social and cultural, in the development of self-regulation and risk-taking, with a focus on SDG Target 3.4 to promote well-being and mental health. The study finds that positive social relationships are among the best predictors of well-being and mental health, and harsh treatment by parents, peers and others predicts poorer mental health and behavioural adjustment among children. The authors implicate both individual- and culture-level predictors in the
development of externalizing behavioural problems, such as aggression and delinquency, from ages 7 to 14. For example, not only did individual mothers’ and children’s endorsement of aggression and authoritarian attitudes predict higher initial levels of externalizing behavioural problems and growth in externalizing behaviours over time, but cultural norms endorsing aggression and authoritarian attitudes exacerbated these effects. This finding emphasizes the need to address cultural norms that increase the risk of children’s behavioural problems as a necessary part of promoting children’s well-being to achieve the SDGs.

Similarly, presenting findings from analysis of 13 years of data from Plan International’s qualitative longitudinal study ‘Real Choices, Real Lives’, Rivett and Loveday (Chapter 1 in this volume) explore the potential for gender norm change among adolescent girls in Benin, Togo and Uganda. The authors use longitudinal data to unpack the dynamics of complex gender socialization processes taking place through a girl’s life by mapping and investigating influences operating at micro, meso and macro levels. Findings identify both the reproduction and rejection of gendered social norms taking place through daily activities and behaviours over time. Family, peers and community were found to be significant in facilitating instances where girls challenge norms. Wider structural factors were also found to play a role in shifting gendered household dynamics and attitudes. Using longitudinal analysis, the study demonstrates the non-linear and complex process of disrupting gender socialization with implications for the delivery model and duration of the programmatic response to SDG 5 which calls for gender equality and the empowerment of all women and girls.

Challenge 3: Identifying effective timing and sequencing by illuminating trends and trajectories

The SDGs aim to be action-oriented and universally applicable to all countries, taking into account different national realities. It is also evident that there are many possible pathways to development, consistent with the many variations globally in contexts and cultures for children and youth to develop well and thrive. Yet robust evidence is limited on the effective timing and sequencing of development actions and understanding how inputs are interconnected (complementary or antagonistic) and sequenced is crucial for effective and efficient prioritization, reducing costs while increasing returns.

Globally, the science of early childhood brain development has demonstrated the lifetime value to be gained from early investment. In experimental work by Heckman and colleagues (2012), three-
four-year-old African American children attending a flagship preschool programme focused on providing early childhood development activities were followed until they were 40 years old. The programme improved aggressive, antisocial and rule-breaking behaviours, which in turn improved a number of labour market outcomes, health behaviours and criminal activities. The programme also enhanced academic motivation among girls. Understanding the mechanisms through which programmes can have a positive lifelong effect can help improve the programme response and make the case for expanded intervention.

The first 1,000 days are a well-acknowledged critical period for development (Britto, 2013), where an absence of adequate inputs can have lifetime consequences. More than 200 million children in developing countries are at risk of not meeting their developmental potential in the first years of life as a result of poverty, inadequate stimulation and malnutrition (Grantham-McGregor et al, 2007). This early disadvantage is likely to result in lower educational achievement and subsequently lower earnings in later life, therefore perpetuating social inequities and contributing to the intergenerational transmission of poverty, poor health and development (Baker-Henningham and Lopez Boo, 2010). Interventions in early childhood which promote the formation of cognitive-language, social and emotional skills can reduce inequalities between advantaged and disadvantaged children, and also improve the productivity of the society as a whole (Heckman, 2006).

Evidence is growing to suggest the adolescent period may also be a unique critical window. Exploiting longitudinal data, research by Lundeen and colleagues (2014) using Young Lives data has uncovered a catch-up window during adolescence that may provide an opportunity to redress gaps in exposures and vulnerabilities experienced in early childhood. Evidence published indicates that some stunting might be reversible and catch-up growth possible. In the study, around 50% of children stunted at year 1 were no longer stunted at year 8 in the absence of intervention, suggesting accelerated growth after the first 1,000 days can occur. Unsurprisingly, catch-up growth depends on the degree of stunting experienced during infancy. This has significant implications for nutritional programming for adolescents. Height for age and height for weight indicators have long been recognized as being associated with outcomes across the board, and indicative of outcomes in a number of other well-being domains, such as diminished mental ability and learning capacity.

Longitudinal research is well suited to exploring linkages between life stages, such as early childhood and adolescence. Portrait and colleagues (2011) analysed data from the Amsterdam Longitudinal Aging Study
to understand the effects of early life exposure to the Dutch famine (during the winter of 1944–45) on the prevalence of heart disease, peripheral arterial disease and diabetes mellitus at ages 60–76. The authors found that across four age classes (0–1 years; 2–5 years; 6–10 years; and 11–14 years) the exposure to severe undernutrition at ages 11–14 was the most significantly associated with a higher probability of developing diabetes mellitus and/or peripheral arterial diseases among women aged 60–76. Evidence from Falconi and colleagues (2014), using cohort mortality data in France (1816–1919), England and Wales (1841–1919) and Sweden (1861–1919), also demonstrates that early adolescence is a sensitive developmental period for males, with findings suggesting that stressors experienced during the ages of 10–14 are related to shorter life spans.

Life course theory supports these findings. Elder (1998, p 3) notes that ‘the developmental impact of a succession of life transitions or events is contingent on when they occur in a person’s life’. The timing of life transitions has long-term consequences through effects on subsequent transitions. The ability of public policy to shape life transitions and their impacts can be exemplified in global efforts to reduce child marriage rates, for example. Marriage is a momentous life transition, and in many parts of the world marks the beginning of ‘adulthood’. Early marriage tends to perpetuate the cycle of poverty by cutting short girls’ education, pushing them into early and repeated pregnancies, and limiting their opportunities for employment.

Cumulative advantage and disadvantage work in patterns of changing cohort trajectories (DiPrete and Eirich, 2006). The impact of stressors on an individual are cumulative, making it difficult for individuals to catch up once they fall behind. For example, Costello and colleagues (2007), using longitudinal data, have shown that low birth weight baby girls show increased risk for depression during adolescence. Studies of divergent trajectories have contributed to analysis of population inequality, particularly in health (Ross and Wu, 1996), with significant implications for development planning.

In this volume, Pettifor and colleagues demonstrate the value of programme intervention in early adolescence using longitudinal data from the Agincourt Health and Demographic Surveillance site, which has been collecting data for 28 years in rural South Africa. Through latent class growth analysis, the authors explore the impact of early life transitions and key life events on HIV incidence among adolescent girls in the cohort, identifying that for each of the life events analysed, experiencing the event earlier in adolescence compared to later in adolescence was associated with an increased risk
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of HIV infection. The authors conclude that while HIV incidence in sub-Saharan Africa peaks in young women after the age of 18, life events that happen before the age of 15, in particular pregnancy, leaving school, parental death and coital debut, place adolescent girls at increased risk for HIV infection throughout adolescence and into early adulthood. This provides important evidence to inform the timing of interventions to reduce HIV risk, by encouraging a look beyond age descriptors to understand adolescent experiences and the potential sequencing of risk behaviours that lead to ultimate infection. This clearly points to the need for a life course look at HIV prevention by focusing on age and stage, even for very young adolescents (SDG 3).

Final remarks and chapter summaries

This introductory chapter has demonstrated how longitudinal analysis can enable the global community to address the achievement of the SDGs through a convergent approach. The foundations of most longitudinal research presented in this volume rest on the life course developmental science model, which has been previously shown to have value for the SDGs (Banati, 2018). A diverse set of contributors were invited to critically present their longitudinal research. All studies are currently operational and exist at different stages. The Joint Child Health Project from Mauritius is 48 years old, while the European Cohort Development Project is a mere few months along. The studies present findings, but also innovations in their design and data collection efforts.

Chapter 1 presents findings from analysis of 13 years of data from Plan International’s qualitative longitudinal study ‘Real Choices, Real Lives’. In the chapter, Rivett and Loveday explore the potential for gender norm change among adolescent girls in Benin, Togo and Uganda. The authors observe the gender socialization process across the course of an individual girl’s life, by mapping and investigating influences operating at micro, meso and macro levels which facilitate both the reproduction and rejection of gendered social norms. Social influences of family, peers and community were found to be significant in facilitating instances where girls challenge norms. Wider structural factors were also found to play a role in shifting gendered household dynamics and attitudes. Using longitudinal analysis, the study demonstrates the non-linear and complex process of disrupting gender socialization, and the limitations of quantitative SDG indicators in capturing the nuance when measuring gender
inequalities to ensure that any achievements reflect the lived experiences of adolescent girls (SDG 5).

In Chapter 2 Plavgo uses 15 years of data from the Young Lives study to unpack the unequal educational trajectories observed among children in Ethiopia by investigating the relationship between children’s early cognitive abilities and later parental decisions regarding investments in higher levels of education. The findings identify two sources of inequality in educational opportunities. Firstly, poorer children on average develop lower cognitive abilities during childhood which negatively affect their later school transitions. Secondly, poorer children are considerably less likely to move on to secondary and higher education, also when their initial endowments are high. Resulting policy implications include those such as social protection interventions that level household living conditions and access to pre-schools. In addition, the author notes potential value in financial support and improvements in secondary school accessibility to reduce barriers for poorer children to transition to higher education (SDG 4).

In Chapter 3 Pettifor and colleagues exploit data from the Agincourt Health and Demographic Surveillance site, which has been collecting data for 28 years in rural South Africa. Through latent class growth analysis, the authors explore the impact of early life transitions and key life events on HIV incidence among adolescent girls in the cohort. Results show that for each of the life events, experiencing the event earlier in adolescence compared to later in adolescence was associated with an increased risk of HIV infection. The authors conclude that while HIV incidence in sub-Saharan Africa peaks in young women after the age of 18, life events that happen before the age of 15, in particular pregnancy, leaving school, parental death and coital debut, place adolescent girls at increased risk for HIV infection throughout adolescence and into early adulthood. Implications identified for programmes include the need for a long-term view of prevention by focusing on younger adolescents with the goal of prevention over the life course (SDG 3).

Chapter 4 uses longitudinal data from 10 years of the Parenting across Cultures project. Lansford and colleagues describe cultural differences across nine countries (China, Colombia, Italy, Jordan, Kenya, Philippines, Sweden, Thailand and the United States), using longitudinal data to understand biological, familial and cultural processes in the development of self-regulation and risk-taking. The Parenting across Cultures project recruited eight-year-old children, their mothers and fathers, and continues with annual interviews through early adulthood. In particular, the project aims to understand
how risk-taking develops across adolescence as a function of biological maturation (puberty and age) and socialization (parenting and culture), exploring topics such as child discipline and its impacts on children’s aggression and anxiety, the development of risk-taking behaviour, and youth competence and maladaptation. It demonstrates wide-ranging implications for policy actions to meet the Sustainable Development Goals (SDG 1, 3, 4, 5, 11, 16).

In Chapter 5 Koenig, Li and Blum share lessons from the Global Early Adolescent Study, a multinational longitudinal study operating in 10 longitudinal sites operating in Democratic Republic of Congo, Malawi, South Africa, China, Indonesia, Ecuador, Chile, Brazil, the USA and Belgium that aims to understand how gender shapes vulnerable young people’s lives beginning in early adolescence. Highlighting the value of longitudinal research in tracking the dynamic nature of gender norms, the study has contributed to the development of new measurement tools to assess perceptions of gender norms and empowerment at entry into puberty (10–14 years of age), and findings that describe gendered perceptions, empowerment and health indicators throughout the course of early adolescence. Their research has demonstrated the influence of gender norms not only in adolescence but also into adulthood, noting that policies need to address the continuum of gender equality predictors and barriers, including at community and local levels. The authors note the importance of innovation in the measurement of age-specific gender norms, and the need to capture contextual, social, behavioural and health aspects of adolescents’ lives. They detail the lessons learned, and challenges experienced, in undertaking multinational longitudinal research with vulnerable young adolescents, including ethical issues and research implementation issues (SDG 3, 5).

In Chapter 6 Baird and colleagues present findings from the innovative Gender and Adolescence: Global Evidence (GAGE) research programme operating in six countries (Bangladesh, Ethiopia, Jordan, Lebanon, Nepal and Rwanda), which follows 18,000 adolescents (10–19 years) in East Africa, the Middle East and North Africa (MENA) and South Asia over nine years (2015–24) using a mixed-methods longitudinal research design. The findings of the study are organized in a framework focusing on six capability domains closely linked to the SDGs: education and learning; bodily integrity and freedom from violence; health and nutrition; psychosocial well-being; voice and agency; and economic empowerment. The study couples findings from observational longitudinal research with nested experimental and quasi-experimental evaluations of adolescent programming to explore
the impact of different support packages on adolescent development and well-being. To capture the dynamism of this life stage, the study follows two cohorts, girls and boys, and undertakes complementary research with female caregivers to understand intergenerational dynamics. By purposely sampling disadvantaged adolescents (those who married early, have a disability, or are internally displaced or refugees), the study contributes to understanding approaches aiming to ‘leave no one behind’ (SDG 3, 4, 5, 10, 16).

In Chapter 7 Pollack and colleagues describe the value proposition for an input-harmonized, integrated and comparative multi-country birth cohort to advancing child well-being in Europe. Birth cohort surveys across the world have been central to our understanding of the factors which contribute to enhancing child holistic well-being. The European Cohort Development Project has been developing the design and business case for such a survey since 2018. This survey comprises a common questionnaire, common sampling and fieldwork procedures and will thus allow a direct comparison of the well-being of children as they grow up across Europe in different national contexts. The authors describe the central role of the longitudinal design in advancing the life-course approach to policy making in childhood, with important links to developmental science and evolving capacities of children as they age. The introduction of participatory approaches to measurement as children are followed longitudinally provides an innovative methodology to ensure findings are child-led (SDG 1–11).

Chapter 8 uses the rich data available from the Joint Child Health Project, a longitudinal study that has followed a birth cohort on the tropical island nation of Mauritius for 48 years. Luczak and colleagues have synthesized the key findings from research conducted over the study period with a focus on drinking risk behaviours. Data are now available on the children of the original cohort, as well as their family units (siblings, partners). Highlighting the results, the chapter demonstrates the value of long-term longitudinal family studies for identifying how multiple familial factors combine to influence diverse behaviours of younger generations during developmental periods when risk-taking behaviours typically emerge. The study investigates parental factors in offspring alcohol involvement, focusing on norms, attitudes and beliefs. Results highlight the value of longitudinal, multi-informant family studies for elucidating how familial factors combine to influence drinking behaviours of younger generations during developmental periods when drinking and high-risk drinking typically emerge (SDG 3).

In the conclusion, the limitations to the effective use of longitudinal research findings are presented, some challenges to the implementation
of these studies are discussed, and a policy evaluation model for longitudinal research is proposed.

References


Oversea Development Institute (ODI) (2014) A place for panel data in the data revolution. ODI Briefing paper, 42.


