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PERSPECTIVES

SUSTAINABILITY

Well-being in metrics and policy

Well-being metrics provide key insights for economic and environmental sustainability

By **Carol Graham[1], Kate Laffan[2], *and* Sergio Pinto[3]**

This century is full of progress paradoxes, with unprecedented economic development and improvements in longevity, health, and literacy coexisting with climate change, persistent poverty in the poorest countries, and increasing income inequality and unhappiness in many wealthy ones. Economic growth and the traditional metrics used to assess it—particularly gross domestic product (GDP)—are necessary but not sufficient to guarantee growth that is inclusive and politically and socially sustainable. Well-being metrics, derived from large-scale surveys and questionnaires that capture the income and nonincome determinants of individual well-being, often provide a different picture of what is happening to people. These metrics can provide insight into policies to sustain human welfare in the future.

The United States has one of the wealthiest economies in the world, yet life expectancy is falling owing to deaths driven by suicides and drug and alcohol overdose. This particularly affects Caucasians with less than a college education. An increasing proportion of this group—15% of males in their prime years (25 to 54 years old)—has dropped out of the labor force. Poor Caucasians report much less hope for the future and more stress than do poor African Americans and Hispanics, who face higher objective disadvantages (*1*). This toxic combination yields a loss of welfare and productive potential and the resurgence of nativism and support for antisystem populists who promise a return to the past (*2*).

China is perhaps the most successful example of rapid growth and poverty reduction in modern history. GDP per capita increased fourfold between 1990 and 2005, and life expectancy increased from 67 to 73.5 years. Yet life satisfaction fell dramatically, and suicide increased, reaching one of the highest rates in the world (*3*). The unhappiest cohorts were educated workers in the private sector, who benefited from the growing economy but suffered from long working hours and lack of sleep and leisure time.

The most recent economic success story is India. Our calculations, based on data in (*4*), show that life satisfaction dropped by 10% from 2006 to 2017. Again, unhappiness and ill-being coincide with the positive story that economic indicators are telling.

Many studies demonstrate that nonincome factors—such as norms, expectations, and stigma—matter more to human welfare than standard economic models assume. For example, promotions have much more lasting effects on life satisfaction than do salary increases (*5*), and the unemployed are less unhappy when local unemployment rates are higher because they experience less stigma (*6*). Higher levels of happiness and optimism tend to lead to better individual future outcomes, including in income, health, and friendship (*7*). Related research highlights the interaction of genetic determinants of well-being (such as certain aspects of intelligence and of the immune system) with environmental ones in determining longer-term earnings and health outcomes (*8*). Experimental studies show that provoking optimistic thoughts, such as recalling a time that individuals felt proud, or providing an asset, such as a cow, that provides hope to the poor lead to investments by individuals in work, health, and education, which result in better futures (*9*, *10*). These links between well-being, productivity, and health are critical to future sustainability.

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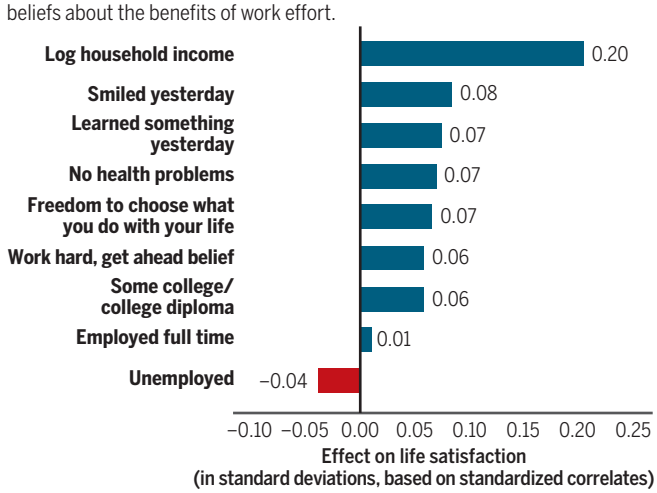
There is now best practice for well-being questionnaires, with consensus on three distinct dimensions of well-being: hedonic, evaluative, and eudaimonic. Hedonic metrics capture individuals' affective states—such as enjoyment, stress, or anger—and the role they play in daily living. They evaluate daily quality of life, such as the effects of various health conditions, and assess the effects of engaging in activities such as smoking or exercising. Evaluative metrics, which are the most common, assess individuals' satisfaction with their lives over their lifetime, including whether they can choose the kinds of lives they want to lead. Eudaimonic metrics ask whether individuals have purpose or meaning in their lives. Income correlates more closely with evaluative metrics than with hedonic ones because poverty is bad for all dimensions of well-being, but beyond a certain point, more money will not improve moods, friendships, or commutes.

Common patterns in the distribution of responses across large populations and over time, as well as validation from psychological measures of well-being, support an underlying consistency in well-being metrics. Respondents are not asked whether certain things make them happy; rather, well-being questions are asked directly—for example, "generally speaking, how satisfied are you with your life as a whole?"—followed by a range of questions about socioeconomic and demographic factors that are

Correlates of life satisfaction around the world

The life satisfaction of individuals worldwide correlates with income, health, employment, and education as well as with positive moods, freedom, and beliefs about the benefits of work effort.



The figure is based on standardized coefficients using 2009–2012 Gallup World Poll data (*16*).

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associated with life satisfaction. Controlling for these, we can explore things that vary across people and places, such as inequality, commuting time, volunteering, freedom and learning, and attitudes about work (see the figure).

Well-being metrics have limitations. They can only infer causality when tracking the same respondents over time, or after an intervention. Otherwise, there is often two-way causality: Happier people are more likely to marry each other and to make friends as well as to derive benefits from those relationships. Another issue is scale interpretation: We cannot assume that a score of eight for life-satisfaction is equivalent to double a rating of four. Adaptation also poses challenges. People are remarkably adaptable to many experiences (good and bad). When a poor person living in terrible conditions responds that they are "quite happy," we do not know whether that is true or whether they have learned to live with insurmountable conditions. One resolution is to compare the same respondent's scores on daily experience questions with those on life satisfaction. People in compromised conditions may respond positively to the former yet tend to score lower on the latter because they lack the means to choose the kinds of lives they want to lead. Additionally, we can use vignettes, which ask respondents to rate alternative scenarios that, for example, tease out how women think they should respond in the context they live in versus how they actually feel, to allow for scale differences across cultures, races, and gender.

Well-being metrics can contribute to policy design, monitoring, and evaluation in a range of areas. For example, most economic models assume that inflation and unemployment affect welfare equally badly, yet unemployment rates have more negative effects on well-being. Places and people with good public health, education, and welfare systems have higher levels of well-being. Yet, standard economic models do not incorporate these factors.

Well-being metrics can inform on social issues. There is a consistent "U"-shaped relationship between age and life satisfaction (controlling for health and income), with most dissatisfaction (and stress) occurring in middle age (40 to 54 years old) (*11*). This is not a marginal issue for policy; for example, the highest rates of overdose and suicide in the United States are in these middle-age years. Another is gender rights. Although women are typically happier than men (except when their rights are compromised), they may experience happiness losses when rights equalize because the shifting of social norms can result in intrahousehold conflicts or other negative outcomes not accounted for in policy design (*12*).

Policies based solely on income-based cost-benefit analysis can fail to capture important side effects. For example, closing rural post offices may make sense from a budget perspective; they are expensive to reach and do not deliver much mail. But, well-being surveys in the United Kingdom showed that the daily post office visit is an important social event for isolated residents, particularly the elderly. Understanding such aspects of well-being could avoid policies with unforeseen negative side effects.

Well-being metrics can also influence environmental sustainability. Airport noise and air pollution, as well as transient conditions such as flooding and drought, have substantial life satisfaction costs. Moreover, individuals living in greener urban areas and on coasts report higher life satisfaction and less mental distress. Policy calculations of the benefits of pro-environmental behaviors such as recycling account for time and money costs. Yet these behaviors are positively associated with well-being, which could alter policy calculations (*13*).

"These links between well-being, productivity, and health are critical to future sustainability."

Many scholars believe that happiness should be the primary objective of policy, citing the limits of economic growth. Indeed, Easterlin *et al.* found that decades of growth did not yield increased average national happiness (*14*). There is extensive debate over the accuracy of this paradox, which depends on the country sample—because the gains in happiness from growth are greater for poor countries—and on the time range of the analysis.

Supporters of the proposal to make happiness the central objective of policy cite the common drivers of happiness among people worldwide, which in turn allows for assessing the relative importance of related social indicators. Happiness metrics are "democratic" because they are based on responses from individuals, not what scholars think influences happiness. These metrics also identify important—and often costly—trends in ill-being and mental illness.

Skeptics believe that well-being metrics and the research based on them are valuable inputs into policy-making but should not be the measures of success. They allow scholars to assess the relative importance of various conditions or institutional arrangements and can complement welfare assessments based on economics. Additionally, making happiness an objective of policy raises challenges, including differences in peoples' conceptions of happiness, adaptation, changing expectations that influence individuals' evaluations, and possible political manipulation of the information by cherry-picking findings.

This is not a hypothetical debate. Bhutan made Gross National Happiness its official national development strategy in 2008. The U.K. government does not endorse that strategy but has included well-being questions in its Annual Population Survey since 2012. In 2013, the Organization for Economic Cooperation and Development issued guidelines for well-being metrics in statistics, and a U.S. National Academy of Sciences panel provided recommendations for well-being metrics in policy (*15*).

There are also myriad local efforts to measure well-being to inform policy. For example, the What Works Well-Being Program assesses the well-being effects of interventions in deprived communities in the United Kingdom, and the U.S. city of Santa Monica uses a well-being index to guide better municipal policies. Informing sustainability objectives is a natural extension because these efforts assess the financial and well-being benefits and costs of interventions such as more green spaces, opportunities for volunteering, and commuting arrangements.

Well-being metrics can serve as warning lights; they point to vulnerabilities in particular places or groups of people and to positive trends that could provide broader lessons. GDP and well-being indicators can and should coexist to play a role in public and policy debates. ■

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