

Policy insights from the new science of well-being

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abstract

Nations routinely assess economic and social progress by measuring productivity, growth, longevity, and other objective indicators, and they then use the measures to guide policy. Yet the classic metrics do not directly assess an important goal of economic and social policies: improvements in people's own evaluations of their well-being. Improving people's feelings of well-being is important in its own right and can lead to enhanced personal and national economic prosperity. Today, governments at all levels—as well as businesses and community organizations—are increasingly complementing the standard measures with data from surveys that ask respondents about their day-to-day happiness, overall satisfaction with life, and sense of purpose. In this article, the authors describe many examples of how governments and other organizations are applying these measures of subjective well-being to inform and improve policy decisions.

When companies have trouble retaining their high-performing employees, their standard response is to raise the workers' salaries. Yet research on people's own assessments of their well-being suggests that this purely economic approach might not be the most effective strategy. It turns out that the joy of receiving a raise is short-lived. In contrast, having autonomy in the workplace and doing meaningful work both engender longer lasting satisfaction with life and higher worker productivity.¹

Core Findings

What is the issue?

States and organizations are increasingly realizing that traditional measures of economic and social progress are no longer sufficient to capture overall well-being. To address this, decisionmakers are complementing traditional measures with data that emphasize *hedonic*, *evaluative*, and *eudaimonic* subjective well-being. Doing so effectively allows for a more holistic evaluation of progress.

How can you act?

Selected recommendations include:

- 1) Measuring and monitoring well-being on different dimensions to identify issues needing attention
- 2) Utilizing measures of subjective well-being in cost-benefit and cost-effectiveness analyses
- 3) Focusing on the creation of high-quality rather than strictly high-paying employment

Who should take the lead?

Governments and organizations

Making a similar error on a larger scale, nations around the world have historically measured their economic and social progress using objective indicators—such as gross domestic product, unemployment rates, and mortality rates—and have focused their policies on improving those outcomes. Yet, by focusing primarily on standard metrics, they miss an important aspect of success: whether people end up more satisfied with their lives because of those policies. Aside from being an important goal of its own, improvements in people's sense of well-being can help to fuel their longevity as well as their personal and their nation's economic success.^{2,3} For those reasons, decisionmakers would be wise to complement standard objective measures with measures of subjective well-being—that is, with data obtained by directly asking people how they feel about their lives.

An example of how standard metrics can miss important trends (at high cost for many nations around the world) is the paradox of unhappy growth: Surprisingly, as some countries become more prosperous, the average life satisfaction of their citizens declines. In the 1990s, when China achieved record levels of growth and poverty reduction, life satisfaction fell dramatically and suicides and reports of mental health problems increased.^{4,5} India's dramatic growth and poverty reduction from 2006 to 2017 coincided with a 10% drop in life satisfaction in the same period. India also leads the world in absolute numbers of suicides.² In the United States, standard indicators tell a story of booming stock markets, record lows in the unemployment rate, and impressive technological advances. Yet

these trends coexist with less sunny statistics: 20% of prime-working-age males dropping out of the labor force; increases in the number of deaths from despair (from suicide, drug overdose, and alcohol-related liver disease) among non-Hispanic Whites with less than a college education (leading to rises in overall mortality rates); and high levels of desperation, stress, and anger in these same cohorts.^{2,6}

The United Kingdom is a pioneer in systematically measuring well-being. About 10 years ago, it launched the Measuring National Well-being program, which conducts surveys that ask people to rate their day-to-day happiness, feelings of anxiety, satisfaction with life, and sense of purpose. Other nations—as well as governments at different levels, businesses, and civic organizations—are also beginning to combine

Basics

Surveys of well-being directly ask people how they feel about their lives and reveal what is important to them—information that objective indicators of progress can miss. This subjective information is useful for designing, assessing, and setting priorities for policies.

The surveys reveal how people are actually affected by experiences, which often differs from how they think they will be affected.

Trustworthy methods for conducting well-being surveys have been developed. They examine one or more of the three dimensions of well-being: *hedonic* (moods and emotions experienced during daily activities), *evaluative* (feelings of satisfaction with life as a whole), or *eudaimonic* (a sense of having a purpose in life).

Best practices suggest assessing all three dimensions when possible.

Findings from well-being research often depart from standard economic assumptions. For instance:

- People's relative position can matter more than their absolute position.
- Well-being is affected by how people's aspirations compare with what they actually get.
- People adapt to many life events, such as increases in income, a bigger house, and a new car, so that the joy ultimately wears off. They also adapt to negative changes in life.

subjective well-being metrics with more standard ones.

The spread of the approach has been made possible in part by the success of behavioral economics, which taught economists and policymakers the value of considering people's feelings and nonrational thought processes when designing and implementing interventions. Today, economists are complementing their understanding of unconscious processes in decisionmaking with explicit measures of people's feelings as they participate in economic activities and other aspects of their lives.

Efforts to systematically measure people's self-reported well-being are grounded in a wide body of robust evidence showing that the self-reports capture different information from that obtained through classic methods of assessing social welfare. The classic methods look at stated and revealed preferences: They ask people what they think will make them happy or observe their actions (such as tracking what they buy). Surveys in which large numbers of respondents were asked to rate their well-being have shown, however, that what people think will make them happy is not necessarily what actually makes them happy. Nor do actions, such as the jobs people take or the neighborhoods they move to, always reveal true preferences. As a result, subjective well-being metrics often do a better job of revealing what truly matters to people.

Subjective well-being metrics give decision-makers the opportunity to adjust policies so that the policies support a population's emotional welfare while also meeting standard objectives, such as increasing employment, reducing poverty, and enhancing longevity. Yet what do assessment and application of subjective well-being metrics look like in practice? How can policies or programs be adjusted to support a population's feelings of well-being?

In this article, we focus on numerous examples, accepting that there are many more around the world that we cannot cover in this brief review. We start with a succinct overview of the methodology for assessing subjective well-being and

some key findings from the research. We next highlight selected policy applications and strategies for effective implementation.

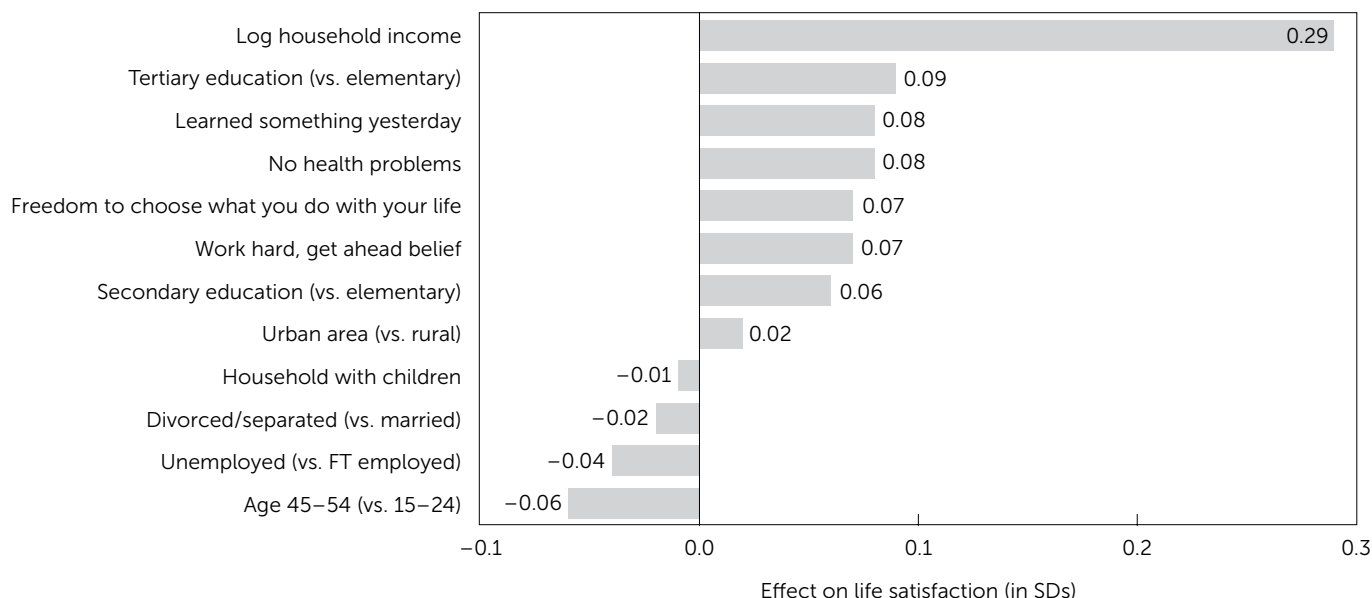
Of course, improving people's incomes and health can increase happiness and satisfaction with life, but we argue that administering well-being surveys uncovers influences on daily or overall happiness that are not captured by standard economic analyses. Among these influences are the lengths and difficulties of commutes, access to green spaces, and opportunities to better integrate into one's community. In the balance of this article, we refer to measures of subjective well-being simply as *well-being metrics*, except where a qualifier is needed for clarity.

Background: Research Methods & Findings

Most economists were initially skeptical that well-being research could be trusted, but many changed their views when a growing body of academic work based on large surveys uncovered remarkably consistent patterns across individuals, countries, and time. Psychological and biological measures of well-being also validated the survey responses.⁷ For instance, test results revealing high levels of cortisol, a hormone that becomes elevated when individuals are stressed, correlated with self-reports of anxiety.

As for those patterns, a robust body of literature has shown that, in general, income, age, employment status, health, position in the social hierarchy, and various other characteristics affect the well-being of most people in similar ways, regardless of, say, where people live or what religion they follow. For instance, household income has by far the greatest positive influence on life satisfaction, and people 45–54 years old report less satisfaction than do people 15–24 years old. (Figure 1 displays some well-established patterns.) Beyond being inherently interesting, these consistent patterns enable scholars to control for the effects of those factors when they want to examine the well-being effects of other environmental or behavioral influences (such as governmental

Figure 1. How various influences typically affect reported satisfaction with life



Note. FT = full-time. The authors used a regression analysis on Gallup World Poll 2009–2017 data (<https://www.gallup.com/analytics/232838/world-poll.aspx>) to estimate the relative life-satisfaction effects of the factors listed above. The numbers are relatively small, given that some of life satisfaction is determined by innate character traits rather than by observable factors. Log household income is a measure of household income based on international dollars; it allows for cross-country and cross-time comparisons. The numbers on the bars represent the change in reported life satisfaction (on a 0–10 scale) that occurs with a 1 standard deviation (SD) change in each variable listed. Some of the findings were published in *Science* in 2018.^A

A. Graham, C., Laffan, K., & Pinto, S. (2018, October 19). Well-being in metrics and policy. *Science*, 362, 287–288.

structures, environmental quality, health policies and practices, and employment arrangements).

Many findings from the well-being literature are consistent with standard economic assumptions, such as the law of diminishing marginal utility: Increases in income make more of a difference to reported quality of life for those with lower incomes than for those with higher incomes.⁸ In the same way, one additional contact is more important for the welfare of someone with no social contacts than for someone with many.

Other findings, however, depart from classic economic assumptions. For example, the well-being literature shows that relative position (in terms of income or power) can matter more than one's absolute position does.^{9–11} Even when one's income stays the same, comparisons can color satisfaction: an increase in someone else's income can reduce the sense of well-being of a person whose income does not rise.¹²

The literature also demonstrates that some changes in life alter well-being only temporarily, as the survey findings listed below illustrate:

- Marriage provides a well-being gain, but the warm glow wears off after about two years.^{13,14}
- The well-being boost that comes with a promotion is often temporary because of the responsibilities, workload changes, and stresses that accompany the change.¹⁵
- Once someone has achieved a certain level of income, the person's well-being depends more strongly on whether the individual's pay is in line with or greater than last year's pay than on the absolute level of income.⁹
- As with a promotion, the well-being boost from a rise in income tends to fade over time. In this case, though, the reason is adaptation: as the income and associated daily

expenditures become the new normal, the individual pays less attention to the added money and reverts to the previous level of well-being.

- Adaptation also happens with negative life events, including separation from a partner or even the death of a spouse.¹⁶ In some cases, adaptation may take a long time, but evidence has shown that people usually adjust to their new state eventually, and their well-being returns to its original level. (Ed Diener and his colleagues provide a fuller, more nuanced view of adaptation.¹⁷) We discuss some of the implications of adaptation for well-being research later in the article.

Background: Methodological Issues

Which Dimensions of Well-Being Are Studied?

Researchers have established best practices for implementing well-being surveys, which can tap into any of three distinct dimensions of well-being: *hedonic* (or *experienced*), *evaluative*, or *eudaimonic*.¹⁸ The findings in the previous section were derived from surveys that looked at one or more of these dimensions, depending on the circumstances being examined.

Hedonic or experienced metrics capture the moods and emotions that an individual experiences while engaging in daily activities. They are built from the responses to daily-recall questions that, in separate queries, ask respondents whether they smiled, experienced stress, or experienced anger frequently the day before. Hedonic metrics are most applicable for measuring the quality of daily life. For example, medical researchers might apply hedonic metrics to compare treatments for end-of-life care, when ensuring quality of life is as important as prolonging it.¹⁸

Evaluative metrics capture individuals' evaluations of their lives as a whole and often ask people to indicate how satisfied they are overall with their life nowadays. Using a scale that

ranges from 0 to either 7 or 10 points, respondents may indicate their ratings on a ladder whose bottom represents the lowest life satisfaction and top represents the highest. Most well-being surveys use evaluative metrics such as these. Some surveys also pose a question meant to assess whether respondents believe they are able to choose the kind of life they want to lead.

Eudaimonic metrics capture the Aristotelian concept of well-being, which combines having sufficient means (the Greek *eu*) with having control over one's destiny (*daimon*). They ask individuals if they have purpose or meaning in their lives and have them apply the same scales as are used in life-satisfaction questions. Eudaimonic ratings tend to correlate quite closely with evaluative metrics, although people in some cultures who are highly satisfied with life overall may nonetheless feel that their lives lack sufficient meaning.¹⁹ This is the newest well-being dimension under study, and so the extant knowledge is still evolving.

Later in the article, we discuss issues to consider when selecting among these metrics, although some investigators argue that the choice may not matter much (see note A).

Analytic Process

A great benefit of well-being surveys is that they do not ask if particular things (such as income) or activities (such as smoking or exercising) make respondents happy. Such assessments, as we mentioned earlier, are unreliable. Instead, investigators identify how strongly various factors affect well-being by examining the relationship between those factors (such as socioeconomic status or views about the value of hard work) and self-reported well-being.

To avoid introducing bias, investigators do not tell respondents that the objective data on income and other variables will be linked to the well-being self-reports. Surveys begin with respondents' reporting on their well-being along the dimensions noted above and only then go on to collect extensive information on respondent's socioeconomic and demographic

traits. The data are analyzed using econometric equations. (See note B for the specific equation used for these analyses.) These equations make it possible to incorporate well-being findings with economic data when analyzing policies.

Advice for Policymakers

Follow best practices.

For details on best practices for assessing well-being, see *OECD Guidelines on Measuring Subjective Well-Being*^A and *How to Measure Your Impact on Well-Being*.^B

Don't confuse correlation with causation.

Be cautious when drawing conclusions about causality from correlations between well-being assessments and factors that can affect well-being. Researchers, however, have amassed data and techniques that make it possible to deduce causality confidently in some cases. (See *Determining Cause & Effect in Well-Being Studies*.)

Incorporate well-being analyses into other tools.

For instance, for well-being findings to inform policy decisions, the data will often need to be incorporated into standard cost–benefit or cost–effectiveness analyses.^C In some cases, the well-being impacts of different policies will need to be compared directly.

Use well-being surveys to inform policies.

Well-being surveys can provide insights into how effectively policies and projects are contributing to the quality of life of communities^D or nations. At the national level, examine not only the populace's current well-being and the differences within and between different communities but also how likely it is that current levels of well-being will persist into the future. Paul Allin and David Hand have discussed national well-being in detail.^{E,F}

Target unhappy individuals first.

It can be important to focus policies and programs on the people with the lowest levels of well-being and to select policies that will have the greatest persistent impact on them while also potentially providing indirect benefits to others.

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In a nutshell, investigators represent each respondent in a survey at a given time in a mathematical formula that explores how the respondent's reported well-being score correlates with all of the other factors that have been learned about the person—including measures of influences that show a stable relationship with well-being across individuals, countries, and time (such as age, income, gender, employment status, marital status, health state, and location of residence) and measures of factors whose influence on well-being may vary across people and populations (such as commuting time and smoking). Also added in are measures of macroeconomic and societal influences that affect well-being, such as inflation, unemployment rates, inequality, and environmental quality.

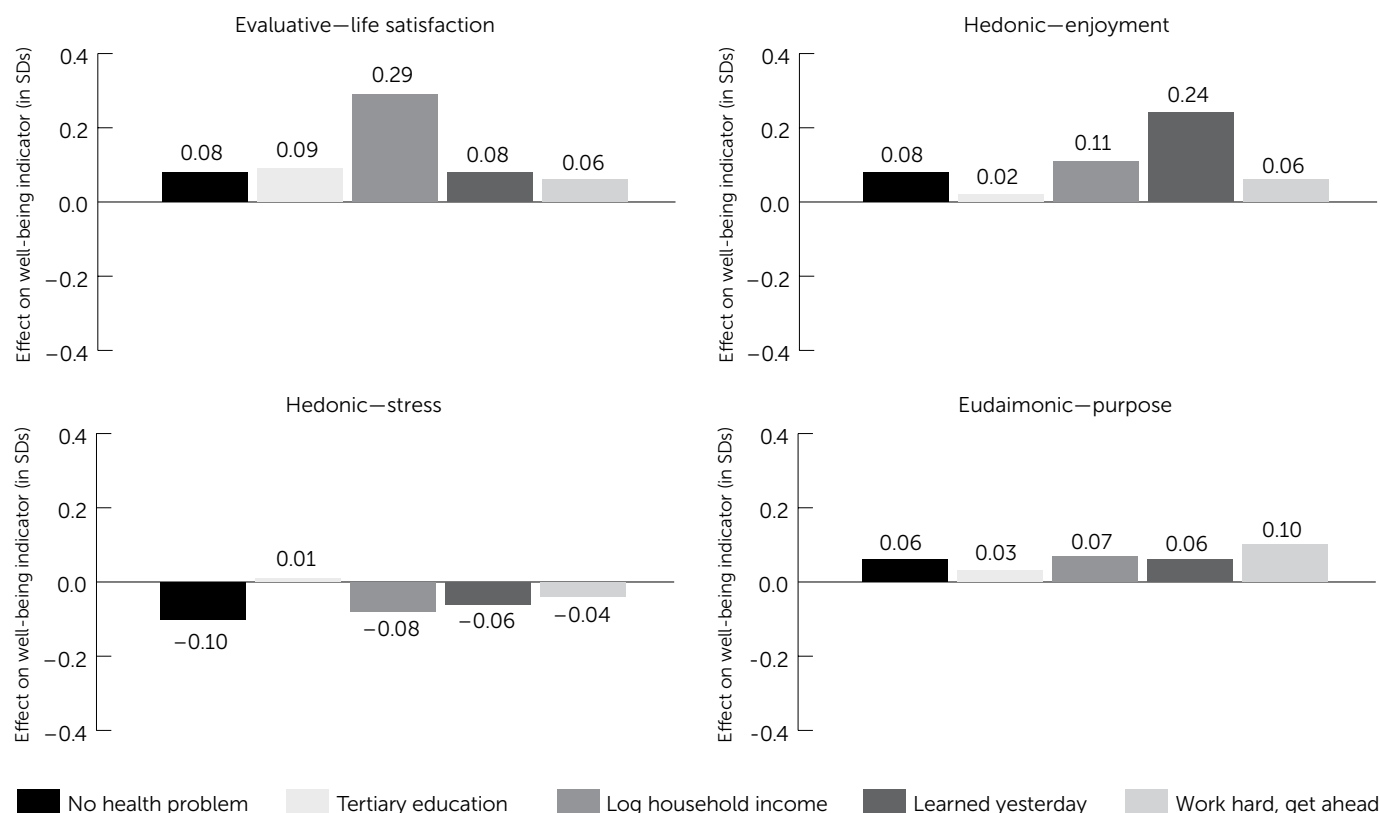
Once these data are collected, analysts statistically control for the influences that equally affect the well-being of respondents having the same demographics (such as age and income level). Then, using a standard statistical technique (*regression analysis*), they calculate the associations between well-being and the remaining variables to determine the relative influences of each of those variables on the well-being of selected groups in a study.

Deciding Which Measure to Use

For some research, the choice of whether to examine hedonic, evaluative, or eudaimonic dimensions of well-being may be immaterial: the influences being studied could affect all three measures to the same degree. But each metric captures a different aspect of what matters to people. Hence, we and many other researchers argue that the metrics used should be considered carefully and that investigators should be cautious about selecting a single measure of well-being as an indicator of a policy's effects.

For example, although higher income generally goes hand in hand with more positive self-reports of well-being, income affects the three dimensions differently. In particular, the effects on day-to-day happiness (the hedonic dimension of well-being) and overall satisfaction with life (the evaluative dimension) diverge. Once people earn a certain amount of money

Figure 2. How experiences & views vary in their effects on well-being dimensions



Note. Carol Graham and Sergio Pinto calculated the findings from Gallup World Poll 2009–2017 data (<https://www.gallup.com/analytics/232838/world-poll.aspx>). The bars represent the change in a well-being dimension (evaluative, hedonic, or eudaimonic) that occurred with a change of 1 standard deviation (SD) in each variable listed. The hedonic dimension was assessed in two ways: asking separately whether a person felt enjoyment or stress yesterday. Income's divergent effects on different well-being dimensions are particularly striking. The findings suggest that measures of well-being should ideally assess all three dimensions. Log household income is a measure of household income based on international dollars; it allows for cross-country and cross-time comparisons.

(roughly the median income of a population), more money will not improve mood on a daily basis, enhance happiness during a commute, or add enjoyment to time spent with children.²⁰ In contrast, the greater a person's income is (up to a certain high level), the higher life satisfaction tends to be. This pattern makes sense: People who earn more money are more likely to have choices about the kinds of lives they want to lead. As a result, they are usually more satisfied with those lives.

There are other notable differences. Reading the same story to a small child for the 15th time would rate high on a eudaimonic scale of purpose but low on a scale measuring daily hedonic pleasure, whereas streaming multiple seasons of a TV show is pleasurable in the moment but does not enhance one's sense of

leading a life of purpose. (Paul Dolan proposes that there is an optimum balance between daily experiences of pleasure and purpose.²¹)

Research on very-low-income populations around the world and, more recently, on deprived or downwardly mobile cohorts in the United States unsurprisingly reveals that many individuals in these groups are overwhelmed by constant negative experiences, such as stress from circumstances beyond their control. They have difficulty planning for and investing in their futures, and they report lower satisfaction with life than do individuals who have greater means and capacity for investing in their futures and life choices.^{22,23} Yet these same individuals may score fairly high on assessments of hedonic well-being, reporting that they were happy or content yesterday. In such cases, the finding of

“people tend to value the evaluative dimension—life satisfaction—most”

high levels of happiness could be misleading, because it could reasonably reflect the lowering of expectations to avoid daily disappointment and despair.²⁴

The measures that governments or other researchers choose to apply, then, should reflect the dimension of well-being that is most relevant to evaluating the particular policy or intervention at play. When policymakers are specifically trying to improve people’s overall satisfaction with life, evaluative metrics will be most relevant. When the goal is to improve day-to-day experiences, hedonic measures are more useful. In cases where policymakers are interested in understanding the role of meaning and purpose in citizens’ lives, eudaimonic metrics are the most relevant (although they are also the least tested in the policy arena). When well-being is being measured and monitored at a national level, best-practice guidance suggests including all three kinds of metrics.

Gus O’Donnell and Andrew Oswald have proposed an approach that governments can use for measuring national well-being.²⁵ It includes using data from large-scale surveys, such as those conducted by the United Kingdom, but it weights those results on the basis of the results of other surveys that ask respondents to rank the various well-being dimensions by their importance to them. Daniel Benjamin and his colleagues have conducted such ranking studies and have found that, for the most part, people tend to value the evaluative dimension—life satisfaction—most.²⁶ This result is consistent with the consensus among scholars in the field that life satisfaction is the most telling well-being metric and thus is the best to use if assessing only one dimension is feasible.

Addressing Complexities

The complexities that well-being measures introduce to policymaking have drawn some

criticism. The authors of a recent paper, for example, argued that the results of large well-being surveys are suspect, because individuals may differ in how they interpret a survey’s scales and may give misleading ratings if, for instance, they have adapted to the miseries of their life.²⁷

Investigators have made advances that address such criticisms. For instance, they may apply additional testing techniques that tease out systematic differences in the ways that different cohorts (say, women versus men) answer surveys and then adjust the results to compensate for those differences.²⁸ A newer approach, suggested by Le-Yu Chen and his coauthors, is to examine the midpoints of distributions (medians) rather than averages (means) in analyses, a move that reduces biasing by those respondents who are outliers in their interpretation of the scales (for example, by always scoring on the extremes of the scales).²⁹ Ongoing developments in the field will continue as researchers find ways to adjust for systematic response bias where it is present.

Examples of Best-Practice Implementations

National and local governments, as well as community organizations, are now regularly using well-being metrics as complements to the income and other objective metrics typically used when designing policies and monitoring their successes and weaknesses. Next, we suggest four general ways that policymakers can make good use of well-being metrics.

Application 1: Measure & Monitor Well-Being to Identify Issues Needing Attention

Many best-practice guidelines for monitoring well-being have been introduced, including at the scale of nations, by the Organisation for Economic Co-operation and Development (OECD), an intergovernmental body that represents three dozen countries and promotes world trade. The OECD guidelines help to ensure that data generated by different nations are comparable across countries and time. In the United States, a National Academy of Sciences panel on well-being and policy has made similar recommendations, spelled out the

specific surveys that are most appropriate for the fielding of well-being metrics, and identified which of the metrics are best suited to assessing different kinds of policies.¹⁸ (Carol Graham has served on this panel.)

In practice, the United Kingdom's Measuring National Well-being program, administered by the Office of National Statistics (ONS), assesses a range of subjective and objective indicators of the aspects of citizens' lives that public consultation and evidence have deemed most important to track. It includes the so-called ONS4, a set of four questions that are now included regularly in official statistics and cover the three main well-being dimensions: life satisfaction (evaluative), happiness and anxiety yesterday (hedonic), and purpose (eudaimonic). The ONS4 includes two hedonic questions, because positive and negative affect are distinct from each other and must be measured on separate scales, in contrast to the other dimensions, which can be considered on one continuous scale running from very low levels to very high ones. Several other countries, ranging from Canada to Chile, have also incorporated these kinds of well-being metrics into their official statistics.³⁰

Some general principles relating to national surveys are worth mentioning. The OECD recommends that countries not look solely at national averages when they assess well-being, because such averaging can miss local factors that affect life satisfaction and other well-being dimensions.³¹ The diversity of experiences within a country—for example, across localities, between different ethnic groups, and between those at the top and the bottom of the socioeconomic ladder—matters for understanding people's priorities.

It is also important that governments not proclaim happiness to be an objective of policy and not establish ministries to promote happiness, as the authoritarian government of Venezuela recently did. Such moves can make the public suspicious of the government's motives and the data that are released. Governments should also make their reasons for collecting well-being data clear to the public, to avoid political manipulation of the measures.

The data should be gathered routinely along with other standard statistics and not tied to particular political issues.

Further, to fully understand what matters to people, policymakers can go beyond collecting the self-reported well-being measures we have been discussing and include indicators of well-being in other aspects of life that individuals deem important. Since 2015, for instance, a French budget law has required the government to report on a number of new indicators of wealth that were developed in consultation with the public, such as declines in greenhouse gas emissions and how income is shared among the population. Likewise, Italy's budget-reform law of 2016 selected 12 indicators (such as life expectancy at birth) to be used for reporting progress as well as for forecasting the impacts that the budget will have on those indicators. And Scotland's 2008 National Performance Framework sets out a vision of national well-being for Scotland and then charts progress toward the vision through a range of social, environmental, and economic indicators, such as increasing physical activity and access to local green spaces.³²

Drawing out what matters in this broad sense is done with the intention of understanding and changing national priorities. The Scottish Government has reported that its National Performance Network has led to the adoption of policies aimed at making progress toward the nation's broader well-being priorities and toward policy objectives shared across departments.³³ The government is using the approach to change how it operates and considers problems. For example, it is now working across departments and considers effects from transportation through health and housing on the well-being of Scotland overall.

There are also local and municipal efforts to assess well-being in a broad sense. The City of Santa Monica, for example, constructed a citywide, multidimensional well-being index in 2015. The index incorporates answers to five questions: How strong is the sense of community and connection? Does the physical and social environment support and promote well-being? Do people have the opportunity

to enrich their knowledge and skill sets across the life span? How healthy is Santa Monica? And can a diverse population live and thrive in Santa Monica? The city included hedonic and evaluative measures and found that residents are generally satisfied with life, that middle-aged people report greater stress than other groups do, that women report lower life satisfaction than men do, and that Latino residents report greater stress and loneliness than members of other ethnic groups do.³⁴

The city has used the results from that index to identify priorities and undertake multiple projects to enhance community- and city-level well-being. These include organizing community walks in green spaces and providing opportunities for community members to gather together to participate in the arts or other activities that tend to enhance well-being and reduce loneliness.

Numerous companies and organizations are measuring the well-being of their staffs and the populations they serve. The annual UK Civil Service survey includes the ONS4 well-being questions, with follow-ups within teams and directorates to understand the trends and figure out which policies and programs for civil servants can be improved. Separately, apps used by companies may ask employees about their well-being as frequently as weekly, to enable timely interventions and changes. At a project level, many charities and organizations are using well-being metrics to ascertain whether their programs are having the desired impact on improving people's lives. See the website of the What Works Centre for Wellbeing at <https://whatworkswellbeing.org/evidence-into-action/> for case studies.

Application 2: Use Findings to Devise Interventions to Improve Well-Being

Evidence suggests that 30% to 50% of the variation in happiness within a population stems from people's genetic makeup. This leaves a great deal that childhood and later experiences can influence.^{7,12}

The research literature points to a number of factors that strongly affect one's sense

of well-being: mental and physical health; positive, supportive relationships; economic and emotional security; a sense of purpose; autonomy; and opportunities for growth. Daily experiences also have an effect. Analyzing how people assess these factors in their lives and reviewing the detailed literature relating to these influences can enable policymakers to design interventions that improve subjective and other dimensions of well-being.

For example, in response to well-being surveys, the United Kingdom instituted the Increasing Access to Psychological Therapy program, which eases access to care for common mental health conditions by providing it free in the local community.³⁵ It also established the National Citizen Service, which deploys volunteers to help 16-year-olds develop "the skills needed to be active and responsible citizens, mix with people from different backgrounds and start getting involved in their communities."³⁶ And, recognizing the importance of relationships for well-being, the United Kingdom has developed an evidence-based strategy to tackle loneliness across the life course.³⁷ Meanwhile, some schools in the United Kingdom have been testing a new curriculum, developed as part of a program to teach resiliency, with lessons in areas important for well-being,³⁸ including relationships, healthy habits, social media awareness, and mindfulness; to increase the curriculum's effectiveness, the program has a strong focus on teacher training.

Of course, before beginning interventions based on well-being findings, policymakers need to assess whether the findings might have been confounded by the psychological processes mentioned earlier: adaptation and comparison. A change in policy can end up being useless if it improves an individual's well-being only temporarily because of adaptation or because the person perceives the improvement as inadequate relative to another person's situation or to the individual's own past or expectations.

Policymakers need to be aware, however, that adaptation and comparison may not always occur. People do not adapt to some aspects of life, and studies that have followed the same

participants over time show that well-being can change significantly over the long term. In a 2005 article, for instance, Frank Fujita and Ed Diener documented changes in over 17 years of well-being data from Germany,³⁹ and the World Happiness Report 2018 found that those who move to happier countries become happier.⁴⁰ When people are in a stable partnership, their well-being ratings are higher than those of people not in such relationships and stay higher even if the additional effect of getting married wears off (although some of the persistence may stem from people with higher ratings of well-being being more likely to marry each other). People who are unemployed have lower ratings of well-being than others, and well-being stays low while they remain out of work.¹² Further, it has been found that people do not adapt to the negative impact of noise,⁴¹ an unpleasant commute, or various disagreeable job conditions, nor to the positive benefits of volunteering.⁴² As Paul Dolan, who has examined barriers to adaptation in depth, has pointed out, people tend to adapt little to situations that draw their attention during the course of a day.²¹ (Partly on the basis of that observation, he emphasizes the importance of measuring hedonic well-being.)

Many aspects of people's lives are not subject to comparative effects. Giving to others improves the well-being of the giver as well as that of the receivers. Improving the quality of relationships improves the well-being of both parties. Improving the mental health of one partner in a relationship—say, through counseling—may improve the well-being of the other partner as well.⁴³

These discoveries have implications for setting policies and changing practices. Increasing employment rates is already a standard focus of policy and has long-term effects on well-being. In a traditional approach to policymaking, the goal of increased employment would be enough if it were coupled with efforts to ensure that the jobs created paid at least a living wage. A well-being approach shifts the focus of policymaking to the creation of high-quality jobs, which are not the same as high-paying positions. Long-term epidemiological studies show that improvements in autonomy, support, the

“improvements in autonomy, support, the balance of demands, and security in the workplace yield long-term mental and physical health benefits”

balance of demands, and security in the workplace yield long-term mental and physical health benefits.^{44,45} This shift in focus is beginning to happen: The UK Government's 2018 Good Work Plan proposes to measure job quality alongside employment rates.⁴⁶ Measurement provides a necessary starting point for ministerial responsibility and action.

The research suggests as well that expanding mental health services, supporting personal development, and helping people to improve their relationships can all have long-term effects on well-being. Even addressing unexpected noise—such as through better insulation—could be more important for well-being than, say, providing larger living spaces.⁴⁷

Clarity on whom policies are aimed at is as important as the nature of the policies. As discussed earlier, much research shows, for example, that a rise in income makes a bigger difference to those with a lower income than to those with a higher income, and an incremental change in well-being does more for those who have lower ratings of well-being than for those at the higher end of the scale. A moral argument has also been made by Richard Layard and others that moving those with low levels of well-being to higher levels of well-being should be more of a priority than moving those with already high levels of well-being even higher.^{12,48,49}

Application 3: Change How Standard Policies Are Implemented

It is not enough to decide which activities to support. Policymakers also confront numerous

options for how to implement different programs and policies. Well-being evidence can help to guide the resulting choices.

Consider policies meant to help individuals who have lost their job return to work. As a rule, regaining employment improves well-being. Governments may “push” people to seek work—say, through setting conditions on receiving unemployment benefits. Alternatively, governments may “pull” people into the workforce by assisting them in addressing the challenges of finding and remaining in a job and by making the prospect of working more appealing, such as by improving conditions at recruitment sites. Each approach has a different implication for well-being.

The UK government is currently assessing the evidence for the benefits of the pull approach, as exemplified by active labor market programs (ALMPs) and, in particular, the JOBS II program.⁵⁰ By providing subsidies and training and by enhancing employment services, ALMPs aim to help people who have lost or are at risk of losing their job to increase their employability and reduce the risk of further unemployment.⁵¹ Evidence has shown that participating in ALMPs helps to improve resilience to the health and well-being risks of unemployment and increases the likelihood of reentering the workforce.^{52,53} Programs are most successful when they combine personal development alongside skills and training for dealing with job search setbacks. Reflecting the well-being evidence, the JOBS II intervention, which ran from 2017 to 2019, provided social support for unemployed job seekers, offering them structured and purposeful group activities that built feelings of control, stability, identity, and collective purpose.

Almost any policy can be designed with well-being in mind. An illustrative example is policies to provide housing for the homeless. The traditional approach, which can reduce well-being in the short run, requires homeless individuals to prove that they are ready for independent housing—a process that may include meeting a series of conditions and passing through a range of accommodation and treatment services. In

contrast, an approach reflecting the well-being evidence would recognize the needs of an individual and the importance to that individual of security and having the ability to influence his or her own life. “Housing first” is an approach that follows principles consistent with the well-being evidence: Housing first programs provide independent, stable housing without conditions and provide intensive, flexible support meant to meet the client’s preferences. International evidence supports the benefits of the housing first approach, and the UK Ministry for Housing, Communities and Local Government has decided to support a £28 million trial to test the approach. To gain a well-rounded picture, the ministry will be evaluating the self-reported well-being of participating individuals in addition to analyzing such traditional measures as health and employment outcomes.

Policymakers who want to consider well-being when selecting among multiple options for addressing a problem can do so by taking into account the importance of relationships, inclusion, and the ability of the people who are affected by a policy or program to influence the decisions that are important to their lives. The well-being impact may not always meet expectations, however; therefore, before making major systemic changes, it is important to test, evaluate, and learn.

Application 4: Improve Decisionmaking That Is Based on Cost–Benefit & Cost-Effectiveness Analyses

Policymakers almost always have limited resources and must set priorities for which problems they will tackle and how they will do so. They typically compare options by conducting *cost–benefit analyses*, which essentially add up the economic benefits of an existing or proposed action and weigh these against the costs to yield a monetary metric by which all options and trade-offs can be compared. A related procedure, known as *cost-effectiveness analysis*, can be used to compare the value of medical treatments, which often cannot be judged in terms of economic gains. In addition to a treatment’s costs, it takes into account a treatment’s effectiveness as measured by a nonmonetary outcome such as years of life

saved. Options are then compared by looking at the ratio of money spent relative to the associated health outcome.

To know which policy decisions are best for society in general or for particular cohorts, then, policymakers can be helped by translating well-being metrics into terms that can be fed into cost–benefit and cost-effectiveness equations. That is, they may want to put a monetary value on well-being evaluations, such as by calculating how much a person would be willing to pay to avoid a given hassle. Progress is being made on this front.

Cost–Benefit Analyses. Guidance documents and manuals indicate exactly how standard cost–benefit analyses should be carried out to ensure that they are consistent and provide the best advice on socially optimal outcomes. It could be argued that governmental cost–benefit analyses have always aimed to include all the aspects that are important for human welfare and already incorporate assessments of various nonmarket influences on society and economies (ones that are not traded in markets, such as clean air and cohesive communities). But today’s methods enable nonmarket influences to be incorporated more thoroughly. In the United Kingdom, the treasury’s *The Green Book: Central Government Guidance on Appraisal and Evaluation* offers an overview of methods to assess the costs and benefits of options and includes self-reported well-being as a further option to complement the existing approaches.⁵⁴

Well-being evidence can influence cost–benefit analysis in three important ways. First, the evidence lengthens the list of the types of important benefits and costs that can be quantified and included in a cost–benefit analysis. In addition, subjective well-being evidence can demonstrate that the impacts (benefits or costs) on individuals may be larger or smaller than those observed through individuals’ behavior or through market prices, as discussed above. Last, well-being evidence demonstrates that a well-being gain associated with an additional increment of income may be higher for a low-income recipient than for a high-income

recipient. Because money is used as the common factor in cost–benefit analysis, benefits and costs can also be weighted to increase the monetary value of benefits or costs that accrue to lower income individuals or households, to reflect this principle.

Is incorporating the new subjective well-being evidence into cost–benefit analyses changing the way nations go about making budgetary decisions? In some cases, it is. In the United Kingdom, a number of departments have included well-being survey data to assess the costs and benefits of policy options for which monetized values representing well-being were previously absent, such as policies relating to participation in sports and cultural activities,⁵⁵ to museums,⁵⁶ or to the cultural and noise impacts of road infrastructure. In the case of roads, the United Kingdom is exploring the options for reducing traffic congestion on the main road that passes close to Stonehenge, a World Heritage Site. Options that would reduce the noise from and visual intrusiveness of the traffic are more expensive than other solutions, because they would involve redirecting the road and potentially sending it through a tunnel. By incorporating the well-being impacts in the cost–benefit analysis of the options, so that visitor experience at the World Heritage Site is considered in the benefits, the government is giving weight to factors that would previously have been ignored.⁵⁷ As with all investment decisions, caution needs to be taken to ensure that the figures are robust and the spending of public money can be justified. (As of this writing, the final decision on the road’s fate has not yet been made.)

Elsewhere, some governments and organizations have already incorporated monetization of what they call *well-being benefits* in their cost–benefit analyses of policies. But many of those analyses judge well-being by capturing people’s stated preferences or by observing the things people buy. As we explained earlier in the article, what people say will make them happy (stated preferences) and what they are observed to consume (revealed preferences) do not necessarily reveal what actually will make them happy (as judged by the well-being surveys).

10%

Drop in life satisfaction in India between 2006 – 2017, despite growth and poverty reduction

30% - 50%

Variation in happiness within a population that stems from genetic makeup

20%

Prime-working-age males dropping out of the US labor force

The well-being assessments highlighted by this article can be used to arrive at a more robust understanding of the monetary equivalent of well-being. For example, water companies in the United Kingdom need to present cost-benefit analyses to justify their investments, as part of a process called the *price review*. One company recently evaluated and monetized the subjective well-being impact of flooding inside and outside of people's homes and compared the results with past analyses (which included data on stated preferences) to justify investments in reducing such incidents.⁵⁸

In New Zealand, a treasury tool for conducting cost-benefit analyses during budgeting—the *CBAx tool*—was recently updated to include subjective well-being data alongside additional measures of public welfare.⁵⁹ To create transparency about the implicit trade-offs related to each monetized value, the treasury makes the CBAx analyses public—a move that has encouraged greater (and ongoing) discussion of how to place monetary values on the well-being associated with various policy outcomes and of when having these values can be useful.

In 2019, cost-benefit analyses incorporating subjective well-being metrics were among the inputs into New Zealand's first well-being budget, which required ministers to show how their investment proposals would meet five well-being priorities, among them improving child well-being (such as by reducing rates of family violence) and transforming the economy (such as by reducing greenhouse gas emissions, soil erosion, waste, and water pollution).⁶⁰

This transparency is important, as is caution with the values as they currently stand, because (in a challenge still to be resolved) the math is quite complex: the monetized values of well-being rest not only on statistics that relate changes in prioritized items to well-being but also on statistics that relate income to well-being.^{31,61,62}

Cost-Effectiveness Analyses. Policymakers in the United Kingdom are among those who

apply cost-effectiveness analyses, particularly when assessing the value gained from spending money on different treatments or other health care interventions. In the United Kingdom, treatments are compared on the basis of their impact on quality-adjusted life years (QALYs), which essentially discount the years of life one lives with a particular affliction by the extent to which the condition reduces the quality of life, such as by causing pain or depression or declines in mobility, the ability to care for oneself, or the ability to engage in one's usual activities. (A QALY value of 1 for a year reflects a year of perfect health; 0 represents death.) As typically applied, these cost-effectiveness analyses have some limitations that can be remedied by incorporating well-being data.

For one, treatments that might improve social relationships or a sense of independence (which are known to be important for well-being) generally receive no credit for these benefits in standard analyses. Also, each treatment or disorder has well-being effects on caregivers, friends, and relatives that tend to be ignored in cost-effectiveness analyses. Finally, QALYs are generally calculated on the basis of a representative sample's estimates of how much a condition will affect their quality of life. As is true with stated preferences, the lived experiences of these conditions may differ from those estimates. Life-satisfaction surveys make it possible to assess the costs to well-being from the reported experiences of individuals who are actually affected by the conditions in question.⁶³

Tessa Peasgood, Derek Foster, and Paul Dolan argue that a focus on understanding lived experiences would lead to greater priority being given to mental health and to improved end-of-life care, including more emphasis on palliative care and pain relief.⁶⁴ The United Kingdom's National Institute of Clinical Excellence is currently taking part in a study to understand how the method of calculating QALYs could be extended to incorporate these aspects and the importance of social and emotional well-being.⁶⁵ Results are expected in 2020.

Determining Cause & Effect in Well-Being Studies

It is not easy to determine whether a given factor that shows an association with well-being actually contributes to the feelings that are reported. But ways have been developed to clarify the direction of effect.

Part of the difficulty is that much of the evidence about well-being comes from regression analyses of cross-sectional data. Investigators compare groups that display different levels of well-being and seek to understand how much of the variation between them is explained by factors whose influence on well-being is generally known (for example, age, gender, socioeconomic characteristics, where someone lives) as well as by an additional factor of interest. Say that the additional factor is commuting time and that a shorter commute accounts for some of the well-being difference between two groups after all other factors are accounted for. One could not conclusively say that a shorter commute was itself a cause of higher well-being scores, because the true cause could be something unmeasured that happens to result in a shorter commute. For instance, innate confidence—a factor that was not measured in this hypothetical study—could cause people who want to work from the quiet of their homes to be more likely to ask for permission to do so. The result would be less time spent commuting each week and a higher well-being score, even though reduced travel time was not itself the source of the increased happiness.

Nevertheless, cross-section regression analyses can be critical for identifying factors that could potentially affect well-being and are often the precursor for research that can help to tease out causality.

Certain econometric techniques, such as those known as *individual fixed effects* and *area-specific fixed effects analyses*, can make it possible to identify causal channels leading from a factor of interest to a change in well-being.

Among the research approaches that can help to establish causality are longitudinal panel studies, which observe changes over long periods of time in the same people. For instance, if the time spent commuting shrank in parallel with a rise in well-being, investigators could have more confidence that commuting time, not innate confidence, contributed to the rise, because the innate trait would be unlikely to change with time. Panel data for Russia were the basis of one of the first studies in economics showing that well-being can enhance future prospects: Individuals with higher levels of well-being ended up earning more and being healthier later in life.^A Later, longitudinal data on siblings in the United States also confirmed a channel from higher levels of well-being early in life to better long-term outcomes.^B

Natural experiments can also help to establish causality. In these cases, something occurs that just happens to affect groups differently, such as when being born after midnight on a certain day causes one cohort to be subject to an education or health care policy that differs from a previous policy that a second cohort operates under. Because the groups that were subject to different policies were formed randomly, any overall difference in well-being between the groups is likely to stem from the policy changes rather than from differences in individual characteristics.

Experiments that randomly assign people to an intervention or a control group are another tool for helping to establish causality. They are used widely in medical research and are becoming more common in social science. They are not silver bullets, however. Investigators who want to replicate the findings from early trials often have difficulty doing so. As Angus Deaton and Nancy Cartwright have pointed out, it is not always possible to discern which aspect of an intervention was most important in producing differences between a control group and the volunteers who received an intervention.^C Random allocation makes it easier to identify what causes a particular change, but at the same time it isolates the effects of that intervention from real-world contextual factors that are often critical to how an intervention works and why.

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“cost–benefit and cost-effectiveness analyses are tools for supporting decisionmaking rather than for making decisions in isolation”

Changing the methodology for QALYs is not the only application of well-being metrics in cost-effectiveness analyses. A footnote in the UK Treasury’s *The Green Book: Central Government Guidance on Appraisal and Evaluation* states that, in some cases, well-being may be the most appropriate measure for assessing cost-effectiveness when comparing options for achieving goals such as improving children’s mental health.⁵⁴

In reality, both cost–benefit and cost-effectiveness analyses are tools for supporting decisionmaking rather than for making decisions in isolation. The New Zealand Treasury exemplifies this understanding in its well-being-based approach to setting spending priorities during budgeting. At the operational level, it has specified 12 well-being outcomes (measured by the ONS4 questions and other metrics) and four kinds of capital (natural, human, physical and financial, and social), and it assesses all budget decisions on the basis of whether they address the health of the four capitals and attack social and demographic inequalities in well-being; it also projects how resource-allocation decisions will affect each capital’s ability to improve current or future well-being.^{59,66,67}

In short, adding well-being to cost–benefit and cost-effectiveness analyses can change priorities, support funding decisions that differ from the kinds made in the past, and ultimately enhance the welfare of the population. However, cost–benefit and cost-effectiveness analyses need to be recognized as inputs in a broader decision-making process—as tools

that can support and be supported by still other kinds of analyses and policy considerations.

Lessons & Next Steps

The science of well-being has already advanced enough to inform the focus of policies and programs. It is clear that people’s sense of well-being depends on having good mental and physical health, relationships, security, autonomy, opportunities to participate in work and community, a sense of purpose and growth, and positive daily experiences. It is also evident that people often think they will be affected by experiences more (or less) than they are and that it can be important for policymakers to base decisions on lived reality rather than purely on how people expect to react to situations. At a societal level, it is important to focus on improving the lot of those with the lowest levels of well-being as well as to identify where such actions are not merely costs but also provide benefits to groups beyond those who are directly targeted. Reducing the ill-being of unemployed individuals, for example, is likely to have positive spillover effects for the families and communities surrounding them.

The science of well-being may not provide perfect solutions to society’s ills, but it surely offers a new and robust lens into how humans actually experience economic processes and their lives more generally. Gaining that understanding is an important first step to designing policies to help improve people’s lives, and some initial lessons for how to do so have already emerged from the wealth of experiences discussed above.

Challenges remain, however. Even though research has identified several aspects of life that, as a rule, are important to well-being, there is no single clear factor that, if addressed will improve well-being for every person and every context. To influence policy and practice, the evidence needs to be tailored to specific populations and issues. In addition, the knowledge that a certain activity improves well-being is not enough; scholars and policymakers need to know why the activity works to understand where to focus effort and resources. An

enduring challenge is that well-being surveys often cannot reveal which aspects of an intervention cause documented changes in well-being and which are only associated with the change but not responsible for them.

In addition, individuals and contexts are so different that it can be difficult to generalize from a particular finding. Finally, changes that are best for one individual's or group's well-being may come at the expense of "being well together"—that is, at the expense of the well-being of the larger community or, indeed, the nation. This last concern can loom large when policymakers are aiming to improve well-being for the greatest number of people across future generations.

Increasing the use of well-being metrics in high-quality evaluations of policies and programs and including information on the costs associated with improving well-being through different interventions will help address these challenges. Open and inclusive debate about what is most important for people's lives—and for the goals of policies—is equally essential.

More generally, partnering well-being metrics with standard income-based measures of progress in policymaking can contribute to a better quality of life and future for people and countries around the world. Notably, the approach can suggest new ways to enhance well-being that would not have become evident from standard measurements. Also, the same factors that result in higher levels of well-being—sufficient income, good health, sound environments, engagement with one's community, and participation in the democratic process—are

also important to sustainable growth, which means that enhancing them can contribute to economic growth. Indeed, higher levels of subjective well-being have been linked to improvements in standard measures of progress, including productivity and longevity.² Excessive focus on income and growth alone, meanwhile, can result in ill-being, high associated social costs, and unsustainable futures.

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Graham is on the academic advisory board of the What Works Centre for Well-Being, and MacLennan served as the center's head of evidence from 2016 to 2018.

endnotes

- A. Some scholars, such as Andrew Clark, argue that the choice of which well-being metric to use is not so important, in part because the measures generally correlate with one another.⁶⁸
- B. The equation used for analyzing well-being data is $W_{it} = \alpha + \beta x_{it} + \varepsilon_{it}$. W_{it} is the reported well-being (hedonic, evaluative, or eudaimonic) of individual i at time t ; α is a constant known as the intercept; and βx_{it} is a vector (a summation) of individual traits such as age, income, gender, employment, marital status, objective or reported health, area of residence, and so forth. The epsilon (error term) captures innate individual traits that investigators are unable to observe.

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