# The State of Well-being Metrics (An Introduction)

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# Positive Psychology well-being Metrics:

Positive psychology represents an evolution in the field of psychology that has increasingly shifted the focus of psychology from a reactive model focused on treating mental illness to a proactive approach focused on building and supporting psychological well-being, happiness, and resilience. Positive psychology is a relatively new field, which was officially established as a sub-discipline of psychology in 1998. Research and practice in the field aim to find ways to make life better for people, and ensure they're the best and most mentally healthy person they can be. Positive psychology suggests that getting rid of sickness, disability, depression, crime, and the other problems of life is important, but not enough. People should be able to not just survive life, but to thrive and enjoy life.

These ideas are not new; happiness and well-being have been considered across millennia, and the field has roots in earlier work of William James, Abraham Maslow, Max Neef, Carl Rogers, and others who identified our common human needs including but not limited to sustenance, safety, self-esteem, social belonging and self-actualization.

The contemporary science of well-being is a multidisciplinary field that incorporates psychological, social, and medical sciences, amongst others. Its goal is to formulate aspects of flourishing, develop ways of measuring them, and study empirically their relations with behaviors, socio-economic status, personality traits, health, lifestyles, and environmental factors.

Within positive psychology, numerous theories of what well-being have been developed by thought leaders in the field, each with a corresponding measure. Some theories focus on emotion (hedonic well-being), others emphasize eudaimonic elements (i.e., the good life), and most blend hedonic and eudaimonic domains. Diener and colleagues suggested that subjective well-being includes affective and cognitive elements. Ryff and Keyes focus on eudaimonic domains (autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance). Seligman suggested that flourishing involves five pillars (positive emotion, engagement, relationships, meaning, accomplishment, or PERMA). Huppert and So identified 10 components "symptoms" of flourishing (competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, vitality). There is a growing focus in the field on meaning and purpose in life, and the importance of positive relationships with other people.

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Each model has corresponding self-report measures that capture the domains of interest. The survey-based measurement tools listed below and others are on the Authentic Happiness website:

- The Satisfaction with Life Scale: a 5 item measure that captures overall satisfaction with one's life.

- Cantril's ladder, a single item life satisfaction measure, commonly used in epidemiological studies.

- The Subjective Happiness Scale: a 4 item measure of overall happiness.

- The Psychological Well-being Scales, 18 to 84 item measure of autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance.

- The PERMA-Profiler, a 23 item measure that captures positive emotion, engagement, relationships, meaning, accomplishment, negative emotion, physical health, and overall well-being.

- The Meaning in Life Scale, a 6 item measure that assesses the presence and search for meaning.

- A variety of emotion scales exist (see  p. 137 - Appendix  A "Experienced Well-Being Questions and Modules from Existing Surveys" in Subjective Well-Being Measuring Happiness, Suffering, and Other Dimensions of Experience and see p. 251 Annex A of OECD Guidelines On Measuring Subjective Well-being)

- Csikszentmihalyi is the originator of the concept of "Flow," which examines the role of degrees of challenge and skill on the mental states of apathy, boredom relaxation, control, worry, anxiety, arousal, and flow.

There are also a growing number of efforts to capture aspects of well-being unobtrusively through technology. Natural language processing allows emotions to be detected through sentiment analysis. Other domains are harder to capture through language, though efforts prove it is still possible.

Positive psychology also focuses on a range of characteristics that influence well-being, and has legitimized the empirical study of "soft" non-cognitive aspects of people. These include grit, gratitude, mindfulness, self-compassion, kindness, optimism, hope, spirituality, connectedness, job crafting, resilience, social intelligence, emotional regulation, altruism, and many others. There is considerable focus on character strengths (see www.viacharacter.org).

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# International Governmental Well-being Metrics

There are two methods of measuring well-being employed by governments and international governmental institutions: objective and subjective metrics. Objective metrics gather data that is observable such as average life expectancy,  graduation rates, and income. Subjective metrics  gather data through surveys (also called questionnaires, polls, assessments and sometimes misnamed tests). Subjective well-being metrics measure affect (emotions), satisfaction with life (SWL) and the conditions of life (a reflective question asking how satisfied you are with your life or conditions such as personal finances, work, sense of community, trust in government) and eudaimonia (human thriving). Subjective well-being metrics borrow some of the questions used in positive psychology metrics.

Both objective and subjective metrics gather data for areas of well-being that include internal (psychological) factors and external conditions of life. The conditions or area that are often included in the metrics, in addition to psychology, are: economy/standard of living, environment, government, community, social connection, education, culture, physical and mental health, work, time balance, and other areas.

In 2013, the OECD (the organization that issues comparative GDP data each year) issued its Guidelines for Measuring Subjective Well-being , definitively settling the question of whether happiness and other feelings (affect), satisfaction with life  and other aspects of life can be measured.

In the field of public policy, it is understood by most that to have a full picture of a people's well-being, both objective and subjective metrics are needed. A classic example is found in measuring public safety. While objective metrics may indicate crime rate have decreased in the period measured, people's sense of personal safety may have gotten worse. Thus, the data together indicates the policies best applicable for policy makers.

This rest of this part of this section gives examples of objective metrics followed by examples of subjective metrics.

### Objective Well-being Metrics:

- The Human Development Index (HDI) is composed of life expectancy, mean years of education and expected years of schooling for children, and GDP per capita. The HDI was developed by the United Nations Development Programme and is used alongside other measures (inequality-adjusted human development index, gender development index, gender inequality index and multidimensional poverty index) to expand "the richness of human life, rather than simply the richness of the economy in which human beings live." HDI, first published in 1990, includes data for

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180 countries. By ranking countries in a way that goes beyond GDP it promotes national conversations about priorities and policies. The UNDP issues reports used by policy makers at the UN and elsewhere.

- The Genuine Progress Indicator (GPI) is a metric that begins with the Gross Domestic Product, adds "goods" not counted such as child and elder care, volunteerism, subtracts "bads" such as oil spills, crime (according to Jeffrey Sachs, some governments now include prostitution and drug trade in GDP) and evens out long term investment spending, such as roads and sewage systems.  In the U.S., Maryland's legislature is currently using the GPI (http://dnr.maryland.gov/mdgpi/Pages/default.aspx).

- The Sustainable Development Goals are an evolving set of indicators developed by the United Nations to measure sustainable development. To date, they are composed of 232 indicators, predominantly objective, although there has been discussion of incorporating subjective well-being indicators but does not yet.  The indicator set encompasses 17 areas: poverty, hunger, health, education, gender equality, water, energy, work & economy, industry & infrastructure, inequality, cities & communities, consumption & production, climate, fisheries (life below water), biodiversity (life on land), peace, and partnerships.

- The SDG Index and Dashboards produced by the United Nations Sustainable Development Solutions Network and the Bertelsmann Stiftung provides a report card for country performance on their historic Agenda 2030 and the Sustainable Development Goals. The annual report shows how leaders can deliver on their promise and it urges countries not to lose the moment for important reforms. In order to achieve the ambitious goals, immediate and comprehensive action is needed.

- There are many ecological footprints, including the Ecological Footprint Calculator, Global Footprint Network, Earth Day Network Footprint Quiz and others (some developed for specific countries). The first footprint calculator was developed in 1992 at the University of British Columbia. For most, the purpose is to educate people about the earth's carrying capacity (to understand how many planets would be needed if everyone lived the same lifestyle and used the same resources as you).  Ecological footprints measure your use of natural resources and production of waste through your actions and behaviors in your built environment, consumption of agricultural and farming (grazing) products, fisheries, forest products, and fossil fuels.

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## Subjective Well-being Metrics:

- Gallup World Poll and Gallup Healthways Well-being Index measure the happiness and well-being of nations, states and cities around the world. Gallup provides the data to researchers and journalists (this is often the source for the articles about the happiest countries) and sells its services to governments and institutions. The polls are predominantly subjective well-being measures. The Gallup World poll measures the areas of economy, business, work, citizen engagement, environment and energy, health, community, law and order, education, religion, social issues, satisfaction with life and affect. The Gallup Healthways Index is narrower in scope than the World Poll. The areas measured by the Gallup Index are economic, work, health, community, social support, and satisfaction with life, affect and eudaimonia.

- The World Happiness Reports, currently issued by the Sustainable Development Solutions Network and Earth Institute, (first issued in 2012 by the United Nations Sustainable Development Programme and Columbia University) are based largely on the Gallup World Poll.

- The United Kingdom's Office of National Statistic has been measuring National Well-being. They measure personal well-being (with four indicators for happiness, anxiety, life satisfaction and sense of worthiness) with subjective well-being indicators and blend of subjective and objective indicators for the areas of environment, relationships, health, what we do (time use), where we live (safety), and personal well-being, using 43 indicators.

- The government of Bhutan measures conditions enabling well-being. They call this the Gross National Happiness index. They surveyed their population in 2008, 2010 and 2015. They measure satisfaction with life as well as 9 areas with a survey and with objective indicators. The nine areas are psychological well-being, health, community vitality, living standards, governance, environment diversity, culture, education, and time use. (Note: While the design of GNH supports the idea of increasing holistic well-being, it should be noted that Bhutan has had issues regarding human rights that need to be addressed. Well-being metrics should not be used to hide or distract from any infringements or violations to human rights).

- Bhutan's GNH index survey borrows from positive psychology metrics, including questions for affect (feelings), calm, compassion, contentment, forgiveness, generosity, meditation, selfishness, satisfaction with life, and spirituality.

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# Business Well-being Metrics

It is important to note the difference between well-being indicators (surveys as well as objective metrics) used to gauge employee well-being, and indicators that measure the wider societal concept of well-being, happiness, beyond GDP and sustainability. There are a plethora of employee well-being surveys and while some of them may include areas that are contemplated in wider measures, these indicator sets focus inwardly at the corporate or agency employee welfare.

Many businesses develop their own index set for measuring and managing aspects of their value chain, such as, Walmart's supplier sustainability index and Patagonia's footprint chronicles.  These also are inwardly focused, and like employee well-being efforts, do not measure the wider societal well-being impact that is the focus and concern of this committee.

Most efforts guiding wider impacts of business are principal focused, including but not limited to Global Compact, OECD Guidelines for Multinational Organizations,  ILO Labour Standards, and ISO 2600 Social responsibility Standards. In 2017, the OECD began the process of developing well-being indicators with its Workshop on Measuring Business Impacts on People's Well-being.

The Global Reporting Initiative (GRI) and  B-Corp provide businesses guidance on how to interpret sustainability and corporate responsibility. The GRI is principle rather than metric based, but included here because of its wide use and because the areas contemplated overlap with well-being areas contemplated by governments and international governmental institutions.

## Business Well-being Metrics:

- The Global Reporting Initiative  is the predominant Triple Bottom Line indicators for a business.  Over 10,000 companies issue reports using the GRI, sometimes called sustainability reports, corporate social responsibility or CSR reports, etc.  The GRI guidelines are freely downloadable. Indicators cover the areas of Environment, Economic/Financial Performance, Labor Practices & Human Rights, Communication & Public Relations, Services/Goods Responsibility, and Social Performance.  Each area has indicators such as greenhouse gases in the Environment, and living wage in Social Performance.
The GRI provides sector supplements for the areas of Airport Operations, Construction and Real Estate, Electric Utilities, Event Organizers, Financial Services, Food Processing, Media, Mining and Metals, NGOs, and Oil and Gas. (Note IT is missing).

- SDG Compass Inventory of Business Indicators maps existing business indicators against the Sustainable Development Goals (SDGs). It allows you to explore commonly used indicators and other relevant indicators that may be useful when measuring and reporting

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your organization's contribution to the SDGs. The indicators included in the inventory have been selected from reporting standards commonly used by businesses, such as GRI's and CDP's, and from other relevant sources. The SDG Compass was developed by GRI, the UN Global Compact and the World Business Council for Sustainable Development (WBCSD).

- B-Corp 's Index/Benchmark was developed to measure the benefit of a corporation that opts to become a certified B-Corp. B-Corps is an organization for socially and environmentally responsible companies.  The B-Corp index measures impacts on the areas of workers, community, and the environment and well as corporate governance.  To date, it is composed of over 200 metrics and used to rate and compare B-Corp companies.   Large organizations, such as Danone, small and medium sized companies and startups are utilizing B-Corp metrics and philosophy to drive their business.

# Social Media or Crowdsourced Well-being Data

This part of the section provides three examples of how crowd-sourced (social media) data is being gathered and used, from research, community-based and governmental agencies. The trend to share health data is growing globally, as Edd Gent notes in his article, Our Health Data Can Save Lives, But We Have to Be Willing To Share.  Providing one example of many organizations encouraging the use of data that could be utilized for large-scale well-being efforts, he reports, "PatientsLikeMe lets people connect with others suffering similar problems to them for support and health advice, but it also offers researchers real-time patient generated data on disease progression and treatment efficacy."

While there has been much public debate about the use of social media data to manipulate elections or otherwise impede life circumstances that are the basis for human well-being, the science of using crowdsourced data for the well-being of people is nascent. As yet unresolved and poorly understood issues regarding social media based data include but are not limited to (1) gaming (the levels of  truthfulness at which people represent themselves on social media), (2) non-reactivity (the degree of influence upon a person's satisfaction with life, the circumstances of their life, their level of flourishing, or affect from exposure to content), and (3)  representation of the sample (the data gathered may be from a small or sub-section of a population and may or may not represent the population at large).The examples provided here demonstrate the newness of this field, and the committee expects that the information provided here will be quickly out of date with new uses and findings.

*A note of caution - where sharing models encourage users to make their data, especially highly sensitive medical information, more freely available via "open" models it is imperative these users control how their data is accessed and shared.  Despite the best intentions of any organization wishing to utilize medical data for positive means, where an individual's data is shared without cognizant consent or control they may inadvertently suffer via the future misuse of their data.  For more information on this subject, please see the current or* first version *of the Personal Data and Individual Access Control section of Ethically Aligned Design or join the IEEE P7010™ Standard Working Group,* Standard for Personal Data Artificial Intelligence (AI) Agent.

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## Social Media-based or Crowd Sourced Well-being Data:

- The University of Pennsylvania's World Well-being Project is based on data gathered from social media. A description of the project from the website:

  The World Well-Being Project (WWBP) is pioneering scientific techniques for measuring psychological well-being and physical health based on the analysis of language in social media. As a collaboration between computer scientists, psychologists, and statisticians, we are shedding new light on the psychosocial processes that affect health and happiness and exploring the potential for our unobtrusive well-being measures to supplement -- and in part replace -- expensive survey methods. Ultimately, we hope that our insights and analyses will help individuals, organizations, and governments choose actions and policies that are not just in the best economic interest of the people or companies, but which truly improve their well-being.

- Mappiness is a community driven app formed in the UK that a user programs to query at intervals in a day. The user then provides data about their affect and can gather information about where and when they experience positive or negative affect. The entire data set is also used for research purposes. Their first publication found that people experience the greatest happiest in nature.

- The city government of Dubai, in the United Arab Emirates, using social media for the Smart Dubai program. Every person (national or "ex-pat," as about 90% of Dubai's population is not a national) is asked to use the Happiness Meter after using any service, governmental, corporate or other institution. The Happiness Meter measures positive and negative affect on a three point scale using emoticons. The data is used to adapt or adjust services with the goal of making Dubai the happiest city on earth, with "people's happiness as the ultimate success indicator."

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## Resources:

**Positive Psychology references:**

- Tracing the size, reach, impact, and breadth of positive psychology by R. Rusk & L. Waters

- Positive organizational psychology, behavior, and scholarship: A review of the emerging literature and evidence base by S. Donaldson & I. Ko

- On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being by R. Ryan & E. Deci

- The structure of psychological well-being revisited by C. Ruff & C Keyes The Original Theory: Authentic Happiness by M. Seligman

- Flourishing Across Europe: Application of a New Conceptual Framework for Defining Well-Being by F. Huppert & T. So

- Positive organizational psychology, behavior, and scholarship: A review of the emerging literature and evidence base. by Stewart I. Donaldson. S. & Ko, I.

**Reviews of positive psychology measurement tools:**

- A systematic review of measurement tools of health and well-being for evaluating community-based interventions by M. Dronavalli, S, Thompson

- Doing the right thing: Measuring well-being for public policy by Forgeard, Jayawickreme, Kern, & Seligman

- Review of 99 self-report measures for assessing well-being in adults: Exploring dimensions of well-being and developments over time by Linton, Dieppe, & Medina-Lara

## Subjective and Objective Well-being Metrics References:

- EU BRAINPOoL Review of beyond GDP indicators

- Life, Liberty and the Pursuit of Happiness - an essay covering nations using subjective well-being metrics.

- Measuring Happiness to Guide Public Policy Making - an essay covering international institutions informing the development of subjective well-being metrics

- In terms of indicator sets developed specifically to supercede the use of GDP, a few other noteworthy other examples because of their scope or application are:

  - Happy Planet Index (application)
  - Legatum Prosperity Index (scope)
  - Social Progress Index (scope and application)
  - In development: Australian National Development index (ANDI)

## General Reading Material:

- Doughnut Economics: Seven Way to Think Like a 21st-Century Economist

- Science and Technology for Sustainable Well-being

- Buddhist Economics