The Economics of Happiness

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Abstract

Welfare and well-being have traditionally been gauged by using income and employment statistics, life expectancy, and other objective measures. The Economics of Happiness, which is based on people's reports of how their lives are going, provides a complementary yet radically different approach to studying human well-being. Typically, subjective well-being measures include positive

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and negative feelings (e.g., momentary experiences of happiness or stress), life evaluations (e.g., life satisfaction), and feelings of having a life purpose. Both businesses and policymakers now increasingly make decisions and craft policies based on such measures. This chapter provides an overview of the happiness economics approach and outlines the promises and pitfalls of subjective well-being measures.

Introduction

In recent years, a growing consensus has emerged in academia and policy circles on the urgent need to broaden the conceptual and empirical base over which well-being and welfare are defined and measured. Objective welfare measures, such as income or employment, often tell an incomplete story of how people's lives are going and whether certain policies are making people better off. As the OECD (2011, p. 265) put it, "Subjective well-being reflects the notion that how people experience a set of circumstances is as important as the circumstances themselves, and that people are the best judges of how their own lives are going."

For instance, before the COVID-19 pandemic, traditional macroeconomic indicators in the United States pointed to robust stock markets, economic growth, and low unemployment levels. However, these statistics obscured the experiences of worry, anger, high stress, and low optimism – and associated labor force dropout – of many poor and middle-class Americans (Graham 2017; Graham and Pinto 2019). As another example, even though rising aggregate incomes are generally positively associated with higher short-run country-level life satisfaction levels, the pattern is not uniform across countries (Sarracino 2019). Notable exceptions have included China, India, the United States, Germany, and Turkey, where life satisfaction has declined despite economic growth and improvements in living standards (Easterlin et al. 2017; Graham et al. 2018; Guriev and Melnikov 2018; Sarracino 2019). Subjective and objective measures, therefore, often tell different sides of the same story, making subjective accounts of well-being a useful complement to the standard objective *indicators*.

Subjective and objective well-being measures may also move in the same direction and document similar trends. For example, research shows that migration improves both the incomes and subjective well-being of migrants who have moved from post-socialist countries to the West (Nikolova and Graham 2015). This example illustrates that looking beyond income and employment and incorporating subjective measures in the analysis may reveal added benefits or costs of specific decisions, actions, or policies, which can help *policymakers* and individuals act in a proactive and informed way.

In addition to complementing objective measures, subjective well-being is intrinsically valuable. Being happy and satisfied with life is something that many people strive for, either consciously or unconsciously. In addition, subjective well-being is important as it credibly predicts productivity, creativity, income, and job-related

behaviors, such as effort and quits (Clark 2001; De Neve et al. 2013; Green 2010; Oswald et al. 2015; Nikolova and Cnossen 2020). Therefore, people's accounts of how they are doing can provide important nuance and information that standard progress indicators or indicators of work quality may miss. For example, an economist looking at salary or compensation alone may not understand why workers decide to quit their job. When job satisfaction or perceptions of doing meaningful work are added to the picture, job changes and quits may indeed appear inevitable.

The happiness economics approach has several advantages, making it of interest to policymakers, academics, civic organizations, and laypeople. Nevertheless, using these measures in policy and economic analysis requires a solid understanding of their promises and challenges. This chapter serves as an introduction to the happiness economics approach. Interested readers are invited to read the other chapters in this handbook and the references contained in this chapter.

The Subjective Well-Being Approach

The subjective well-being (SWB) approach assumes that individuals experience positive and negative *affect*, *life satisfaction*, and feelings of *purpose* and meaning in life that can be directly measured via self-reported information (OECD 2013; see the ▶ "Measuring Subjective Well-Being" chapter in this handbook). This information comes from thousands of individuals, typically collected via probability-based nationally representative surveys that also collect data on respondents' socio-demographic characteristics and economic circumstances.

Happiness and subjective well-being (SWB) have a long tradition in economics, though not always as they are known today. The earliest "Happiness Economists" were, in fact, the nineteenth-century moral philosophers, such as Bentham and Mill, who viewed happiness or utility as the sum of good minus bad feelings. Francis Edgeworth even envisioned a "hedonometer" – a device measuring physiological manifestations of pleasure and pain, much like a thermometer measures temperature (Colander 2007).

Not everyone agreed: For example, Irving Fisher advocated deducing utility from the choices people make, rather than their feelings. Cardinal utility, or the idea that utility or well-being can be observed and measured on a numerical scale, fell out of favor in economics and was considered the subject matter of psychology (van Praag and Ferrer-i-Carbonell 2008). Consequently, mainstream economists generally abandoned efforts to measure and compare *utility* across individuals. The backward induction of utility based on people's choices and revealed preferences, derived under restrictive assumptions about human behavior, became the norm. According to this preference satisfaction view, which is what most standard microeconomics courses cover, rational individuals behave as if they maximize utility, making their choices only constrained by their budget and their time. The idea is that while individuals can choose between two different goods/services or situations, they

cannot assign a cardinal evaluation of that using a number, and even if they do, this number is meaningless (Kapteyn 2020).

Nevertheless, in recent years, modern economists have once again returned to the measurement of happiness and utility (see ▶ "Happiness Versus Utility" chapter in this handbook). This development has, in part, been due to advances in behavioral economics, which has challenged assumptions of the revealed preferences approach.

The information gleaned from revealed preferences can significantly differ from self-reported experiences. For example, increases in cigarette taxes decrease the probability of continued smoking and increase the probability of quitting. According to the rational addiction model, which is still conventional in economics, fully informed individuals choose to smoke by weighing the long-term costs of smoking against the short-term pleasure of "taking a puff." According to the rational addiction model, therefore, cigarette taxes cannot increase smokers' welfare. Research using US and Canadian data by Gruber and Mullainathan (2005) shows, however, an increase in cigarette taxes is associated with an increase in happiness among those with a propensity to smoke. These results are consistent with an interpretation that people have self-control problems and would actually like to smoke less but do not because they are impatient. Without cigarette taxes, these individuals would be unhappy and smoking in the future. By forcing a reduction in future smoking, taxes allow smokers to quit, which is something they would otherwise not have done – therefore, the taxes help smokers stop their bad habit and, as such, increase their happiness. Looking at revealed preferences alone would have actually led to the opposite conclusion – that by decreasing their cigarette consumption, taxes reduce smokers' welfare, which is misleading.

The renewed interest in SWB is also due to the greater availability of subjective well-being data and the insights they have generated. Furthermore, the 2009 "Sarkozy Report" (Stiglitz et al. 2009) outlined the deficits of GDP as a measure of social progress, giving a major push to the subjective well-being approach. For example, GDP does not account for nonmarket transactions and externalities in production and does not measure the value of social interactions, such as friendships or family ties. The report highlighted the insights that subjective well-being data contribute to understanding human well-being and recommended that statistical offices should collect such measures along with GDP and other objective indicators. In fact, the recommendations by Stiglitz et al. (2009) have inspired the OECD's Better Life Index, a dashboard with 11 dimensions of well-being. As a result, the OECD (2013) also published recommendations and best practices for collecting subjective well-being measures, which have been very influential in happiness economics.

Like most economic measures, self-reported data are subject to bias due to the survey design, extraneous factors during the interview, such as the weather, or observed or unobserved characteristics of the respondent. As explained below, happiness economists usually carefully net these out by either using panel data, which trace the same individuals over time, or by statistically accounting for personal characteristics and interview peculiarities (e.g., interview mode, presence of others during the interview, and day of the week).

Dimensions of Subjective Well-Being

Happiness is a buzz word that attracts immediate attention. This explains why many social scientists use the term "happiness," although they often mean "life satisfaction" or "subjective well-being." Happiness is just one of many emotions that people experience at any one point in time. It differs from evaluations of one's life in general, or satisfaction with one's job, for example.

Subjective well-being has three separate but related dimensions – affective (hedonic), evaluative, and eudaimonic (Graham and Nikolova 2015; OECD 2013; Stone and Mackie 2013) (Fig. 1). Affective subjective well-being refers to temporary experiences of emotions – positive ones such as happiness or joy, or negative ones such as stress, anger, and sadness. Such positive and negative feelings and emotions are usually short-term and are influenced by the immediate circumstances and states of being and doing. Positive and negative affects are distinct from each other (Kapteyn et al. 2015; Stone and Mackie 2013) and can coexist. For example, Graham and Nikolova (2013) find that access to information and communication technologies (ICT), such as cell phones, can enhance the daily happiness of the poorest people through the capabilities they provide, such as making a financial transaction. However, ICT access also contributes to greater stress and anger, likely because it makes these poor cohorts aware of material goods and opportunities they lack. Affective well-being is typically measured via survey responses or experientially using the experience sampling method or the day reconstruction method (see the ▶ "Measuring Subjective Well-Being" chapter in this handbook). In large-scale surveys, hedonic well-being is elicited by asking respondents how they felt during
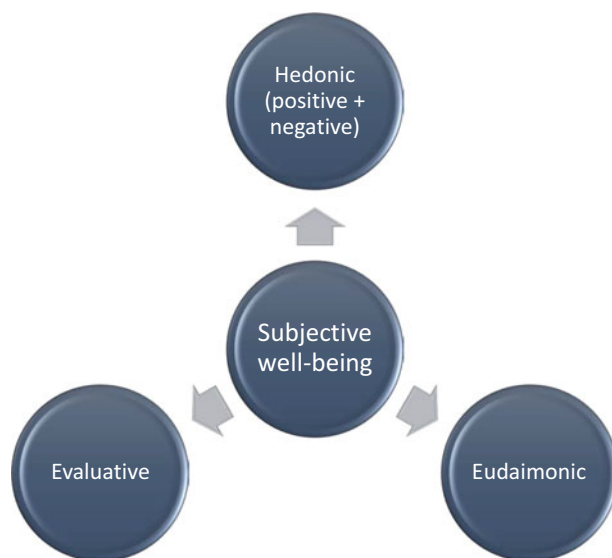
Fig. 1 Dimensions of subjective well-being. (Source: Authors)

the previous day. For example, surveys ask: "Did you experience a lot of anger yesterday?" with possible responses being yes and no.

Evaluative well-being, in contrast, is a judgment about one's overall life circumstances and requires reflecting on life as a whole. Evaluative well-being also relates to specific assessments of life domains, such as work, family, housing, income, and the living standard. It is typically elicited using survey questions asking, "How satisfied are you with your life as a whole?" whereby respondents can choose an answer from 0 to 10 or 1 to 7. Another single-item question available in the Gallup World Poll, a large-scale *survey* in over 150 countries, is the Cantril ladder-of-life question (Cantril 1965). Specifically, respondents are asked to picture a ladder with steps from 0 (the worst possible life that they can imagine for themselves) to 10 (the best possible life that they can imagine) and rate their current life using this ladder. The ladder-of-life question is self-anchoring, which means that the scale is relative to each respondent's aspirations and understanding of his/her best possible life. The correlation between ladder-of-life and lifesatisfaction questions is about 0.75 (Bjørnskov 2010).

The important point about life evaluations is that judging one's satisfaction with life as a whole requires a cognitive evaluation of one's circumstances, both past and present. Unlike the short-run hedonic well-being, evaluative well-being measures usually reflect people's capabilities, means, and long-term opportunities (Graham and Nikolova 2015).

That said, answers to life evaluations are also subject to focusing illusion, which refers to people's tendency to exaggerate the importance of different factors when asked to think about them (Kahneman et al. 2006). For example, asking questions about dating, marriage, or health makes these issues more salient in people's minds and actually changes their subsequent subjective well-being answers. In a similar vein, surveys asking respondents to evaluate their life circumstances as a whole may invoke a focusing illusion in the answers, by unconsciously prompting people to think about their relative economic standing or other material means (Kahneman et al. 2006). Nevertheless, despite these challenges, economists and students of economics and business tend to put a higher weight on measure of life satisfaction than on worthwhileness, happiness, and anxiety (O'Donnell and Oswald 2015).

The correlation between affective and evaluative measures of SWB has been reported to be between 0.4 and 0.8 (OECD 2013). That between evaluative and eudaimonic dimensions is about 0.25–0.29 (OECD 2013). Despite this correlation, the measures are also clearly distinct. For example, respondents may report being happy with their daily lives, but at the same time, have lowlife evaluations. Having a pleasant or unpleasant time is distinct from thinking that all in all, given all circumstances in one's life, this is the best possible life one can imagine for oneself. For example, Knabe et al. (2010) show that while the unemployed in Germany are much less satisfied with their lives than the employed, there are no differences between the two groups in terms of daily positive and negative emotions. As the authors put it in the title of their paper, the unemployed are "dissatisfied with life, but having a good day," mostly because they can spend more time *on leisure activities*.

Evaluative and affective subjective well-being are typically available in surveys and, therefore, widely used in research. Unfortunately, this is not yet the case with eudaimonic measures of well-being, which are much less well understood and measured. The economics of happiness has mostly pursued eudaimonic well-being by investigating life purpose. For example, Graham and Nikolova (2015) provide insights into the determinants of eudaimonia based on a question in the Gallup World Poll on whether respondents have meaning and purpose in their lives. They find that belief in hard work, health, and freedom perceptions are the most important determinant of having a life purpose. Nevertheless, the Gallup question on meaning was only asked in 2 years and in a very limited sample of countries.

In addition, in the psychology literature, eudaimonic well-being is broader than having meaning and purpose in life and refers to the process of living well and having aspects, such as competence, autonomy, personal growth, and relatedness (Fabian 2020; Ryff 2014). Economists are beginning to explore these factors and introduce them into standard economic models (e.g., Nikolova and Cnossen 2020). However, there is still no consensus on whether multi-item scales or single-item scales should be used to measure eudaimonia, even though the OECD recommends the latter (OECD 2013). A recent example of a multi-item eudaimonic scale from the psychology literature includes that by Marsh et al. (2020).

Analyzing Subjective Well-Being Data

The econometric analysis of subjective well-being data typically takes two forms. In the first scenario, subjective well-being is used to predict different outcomes. For example, studies have looked at how subjective well-being influences consumption and savings (Guven 2012), whether happier and more life satisfied people are more likely to migrate (Graham and Markowitz 2011; Graham and Nikolova 2018; Ivlevs 2014; Otrachshenko and Popova 2014), or whether happiness and life satisfaction influence job search and future labor market outcomes (Gielen and Van Ours 2014; Krause 2013; O'Connor 2020). In this analysis, the outcome Y of individual/country i is determined by:

$$Y_i = \alpha + \beta X_i + \gamma S_i + \varepsilon_i \qquad (1)$$

where X denotes observable characterizes (e.g., age, education, income, marital status, in the individual-level case, or the unemployment rate, measures of institutional quality, life expectancy, and GDP in country-level analyses), and S is a measure of subjective well-being. The inclusion of X in the regression allows researchers to hold constant these observable factors and objective life circumstances. If the coefficient estimate γ is statistically significant, conditional on X, then S brings additional information and has explanatory power above and beyond the objective characteristics. In panel data estimations, it is possible to use the lag of subjective well-being and see how subjective well-being in the previous period affects current outcomes.

Instead of using S as an explanatory variable as in Eq. (1), many studies examine how different aspects of one's living and working environment or life events influence *subjective well-being*. These analyses are in fact far more common in the happiness economics literature and usually follow empirical specifications taking the form:

$$S_i = \alpha + \beta X_i + \varepsilon_i \qquad (2)$$

If panel data following the same countries or individuals over time are available, Eqs. (1) and (2) also include individual or country fixed effects denoted by π_i. Individual fixed effects can account for certain sources of endogeneity, such as those related to time-invariant unobservable factors (e.g., personality traits, or motivation and ability). Country fixed effects account for fixed traits, such as geography and culture. Finally, with both pooled cross-sectional and panel designs, Eq. (1) includes τ_t, which are time fixed effects that account for common shocks experienced in different time periods (e.g., the Great Recession). Studies relying on data collected at a single moment in time do not feature this term.

Estimating Eq. (2) using econometric techniques requires assumptions about the reporting function and the cardinality versus ordinality of self-assessed SWB (Ferrer-i-Carbonell and Frijters 2004). These *assumptions* are:

Assumption 1. Self-reported SWB is a positive monotonic transformation of the unmeasurable concept "well-being" or "welfare" W. Therefore, for an individual i observed at times t and j, if $S_{it} > S_{ij}$, then $W_{it} > W_{ij}$

This assumption implies that measured self-reported SWB answers are reflective of the concept of welfare, which itself is "metaphysical" and unmeasurable (Ferrer-i-Carbonell and Frijters 2004).

Assumption 2. Self-reported SWB data are ordinally comparable across individuals i and k: if $S_i > S_k$, then $W_i > W_k$

The second assumption requires that individuals answering SWB questions have a common understanding of what well-being is and report their innate well-being in the same fashion based on the given scale. Therefore, according to this assumption, the interpretation of "completely satisfied" or "completely dissatisfied" and its translation in terms of a numerical scale is the same across individuals.

Assumption 3. Self-reported SWB answers are cardinally comparable across individuals. As such, $S_i - S_k = y(W_i, W_k)$, where $y(W_i, W_k)$ is assumed to be: $W_i - W_k$ and $S_i - S_k = W_i - W_k$

Estimating Eq. (2) using Ordinary Least Squares (OLS), a common practice in the literature, requires Assumption 3 about cardinality (MacKerron 2012). A major advantage of the cardinality assumption is the ability to apply fixed effects estimators, which net out the influence of time-invariant unobservables. When using individual-level data, these include motivation, ability, and personal idiosyncrasies in answering SWB questions and the interpretation of the SWB scale. Nevertheless,

cardinality assumptions are quite strong. For example, for a life satisfaction question measured on a scale from 0 (not at all satisfied) to 10 (completely satisfied), the cardinality assumption implies that the relative difference between responses at 0 and 1 is the same as the relative difference between responses at 8 and 9.

In contrast, ordinality assumptions underpinning ordered logit or probit estimators are weaker because they accept that the relative difference between the answers at different points of the scale is unknown. Still, people are assumed to share the same interpretation of each answer on the scale (Ferrer-i-Carbonell and Frijters 2004). The probit and logit estimators take the SWB scales as arbitrary and regard the ordinal response to SWB questions as the discrete manifestations of a continuous latent SWB. Using maximum likelihood methods, estimators such as ordered logit or *ordered probit*, estimate a coefficient vector that predicts the latent SWB variable based on the set of control variables X and a set of cutoff points where the values of the latent SWB variable switch between the different values of the observed scale. The general disadvantage of using latent models is that they cannot be used with fixed effects, though workarounds and alternatives exist, such as the blow-up and cluster estimator (see Riedl and Geishecker 2014). Other estimates that have been used in the literature include generalized ordered models (which allow for the impact of X to vary along the distribution of outcomes), fixed effects ordered logits, and probit-adapted OLS (POLS) (see MacKerron 2012 for an overview).

In practice, using OLS or ordered probit/logit estimators has yielded similar results in terms of the statistical significance of the included covariates and the relative magnitudes (i.e., the size of one coefficient estimate relative to another one) (Ferrer-i-Carbonell and Frijters 2004; Riedl and Geishecker 2014). Nevertheless, recent research (Bond and Lang 2019; Schröder and Yitzhaki 2017) has challenged the plausibility of the three assumptions and existing approaches to estimating Eq. (2) using SWB data and has claimed that most of the findings in the SWB literature can be reversed with certain monotonic increasing transformations of SWB data. Kaiser and Vendrik (2019) show, however, that in most instances, reversals of the sort that Bond and Lang (2019) and Schröder and Yithaki (2017) describe, are based on the assumption that people use the SWB response scale in a strongly nonlinear fashion, which is implausible. In an OLS context, reversals are rarely even possible. Moreover, most of the recent criticisms already have been addressed at length, and proposed solutions include using median coefficient values rather than means, replicating findings based on very short-response scales with longer, more reliable ones, and adjusting for response scale bias based on findings from vignette analysis (Chen et al. 2019; Kaiser and Vendrik 2019).

As explained in the next sections, researchers have estimated equations such as (2) based on different datasets using different countries, time periods, and individuals. These analyses reveal remarkably consistent *patterns*. While not all contemporary economists are convinced of the validity of the happiness economics approach, the proliferation of peer-reviewed articles on subjective well-being in mainstream economics journals demonstrates the growing relevance of the field.

Methodological and Conceptual Issues

This section provides a brief overview of some of the key methodological and conceptual issues, which are discussed in much detail in OECD (2013), Stone and Krueger (2018), and Stone and Mackie (2013). Over four decades of research on SWB demonstrates that these metrics are useful, valid, and reliable, and most, though not all, issues related to SWB measurement have now been tackled (Stone and Krueger 2018; Stone and Mackie 2013). Since 2013, the OECD and the US National Academy of Sciences have provided much guidance on what subjective well-being is and how such measures should be collected validly and reliably, not just by academics, but also by official statistics offices around the world (Durand and Smith 2013; OECD 2013; Stone and Mackie 2013). Increasing use of these *best practices* has certainly helped resolve certain methodological issues, such as framing and context effects (Stone and Krueger 2018).

Validity and Reliability

Validating SWB measures is challenging and can only be done indirectly. This is because subjective well-being is not like height or temperature – it is abstract and metaphysical. That said, SWB measures plausibly predict future behavior and choices (De Neve et al. 2013), attesting to their convergent validity. For example, subjective well-being measures explain voting patterns and do so even better than macroeconomic factors, such as GDP per capita, inflation, and unemployment (Liberini et al. 2017; Ward 2020). The fact that subjective reports of well-being can explain future actions (e.g., migration or job switching) provides some reassurance that these measures have informational value and are not simply noise (Clark 2016a). Also, SWB measures have meaningful and logical correlations with other variables (Di Tella and MacCulloch 2006). For example, if they were simply noise, these measures would be (statistically) unrelated to life events and circumstances, such as unemployment, marriage, or death of a family member; nonetheless, many cross-sectional and panel data find that they are, suggesting their construct validity. Other indirect validations show that SWB measures correlate with the frequency of "genuine" Duchene smiles, biological markers, such as brain activity and cortisol, and ratings made by friends and partners (OECD 2011).

Reliability refers to internal consistency and test-retest reliability. Since this chapter's focus is on single-item measures of subjective well-being where computing a standard measure such as Chronbach's alpha is not possible, we only discuss test-retest reliability. Krueger and Schkade (2008) report test-retest correlations of life evaluations and affect measures of about 0.5–0.7 for 1–14 days. Moreover, *reliability* tests suggest that SWB is relatively stable over the life course (Ehrhardt et al. 2000; Headey and Wearing 1991). In general, the test-retest reliability of affective measures is lower than that of evaluative ones, and there is not much evidence on the test-retest reliability of eudaimonic well-being. Moreover, the test-retest reliability of SWB measures is lower than that of objective variables such as

income or education (Krueger and Schkade 2008; OECD 2013). Finally, unsurprisingly, the test-retest reliability of SWB measures is higher at the country than the individual level (OECD 2013).

Much like their objective counterparts, SWB indicators are imperfect, though in different ways. Certain *response modes* (e.g., phone vs. in-person interviews), temporary moods, or the presence of others can distort the answers to SWB questions (Conti and Pudney 2011; Deaton and Stone 2016; Dolan and Kavetsos 2016; Krueger and Schkade 2008). For example, asking about politics, health, or social capital before a subjective well-being question influences the responses (Deaton and Stone 2016; Lee et al. 2016; Nikolova and Sanfey 2016). This is why the OECD (2013) recommends that *surveys* first elicit subjective well-being questions and then proceed to other topics.

Limits to Validity: Differences in Response Styles and Comparability of SWB Scores

By now, most of the validity and reliability issues have been addressed – either through the recommendations by the OECD (2013) on how to collect SWB measures or via statistical techniques, including interviewer fixed effects in regression analyses.

Systematic differences in the interpretation of the subjective well-being questions or scales based on *culture*, expectations, or language may be problematic if researchers compare unadjusted SWB levels between different groups (e.g., comparisons of SWB scores across countries or between men and women). This is less of an issue if researchers analyze *changes* in SWB between different countries or groups rather than *levels*. Therefore, rankings of raw SWB scores, which often make for interesting headlines in the media, should be treated with extreme caution.

The cross-country comparability of SWB levels remains an open area of research. Exton et al. (2015) review the existing literature on SWB and culture and distinguish between cultural bias (i.e., *measurement error*) and *cultural impact* (i.e., culture shaping how people experience their lives). Exton et al. (2015) provide the most extensive analysis regarding the cross-country comparability of SWB scores and conclude that culture could account for between 6% and 18% of the country-specific unexplained variance in SWB scores.

Among several methods attempting to study and control for culture in SWB responses, *vignettes* have received the most attention among economists. This method asks respondents to rate the SWB of hypothetical individuals whose life circumstances are described in a short story (vignette) (see, for example, Angelini et al. 2014). The idea behind vignettes is that all interviewees read the same hypothetical scenario, which should have the same meaning to all of them. Therefore, cross-country differences in how people evaluate the vignettes reflect differences in the use of SWB scales across cultures. This information can be used to adjust cross-country SWB scores and net out the role of culture. Some studies using vignette adjustments find that life or job satisfaction country rankings can change

(Angelini et al. 2014; Kapteyn et al. 2013; Kristensen and Johansson 2008). Therefore, cross-country differences in the vignette answers can be used to adjust respondents' self-reports of subjective well-being.

An example of a vignette, taken from Angelini et al. (2014, p. 646) is as follows:

> 1. John is 63 years old. His wife died 2 years ago and he still spends a lot of time thinking about her. He has 4 children and 10 grandchildren who visit him regularly. John can make ends meet but has no money for extras such as expensive gifts to his grandchildren. He has had to stop working recently due to heart problems. He gets tired easily. Otherwise, he has no serious health conditions. How satisfied with his life do you think John is?
>
> 2. Carry is 72 years old and a widow. Her total after tax income is about 1100 per month. She owns the house she lives in and has a large circle of friends. She plays bridge twice a week and goes on vacation regularly with some friends. Lately she has been suffering from arthritis, which makes working in the house and garden painful. How satisfied with her life do you think Carry is?

Nevertheless, the vignette method has several limitations. Most importantly, real differences in life circumstances and quality of life in a country influence how people perceive the scenarios presented in the vignettes. For example, life expectancy, retirement age, norms, and attitudes regarding retirement and health expenditures differ across countries, influencing how people in different countries evaluate the circumstances described in the vignettes. Another example from Kapteyn et al.'s (2013) study assumes that having the median income in the United States and the Netherlands presents comparable economic circumstances. As such, vignettes are liable to country-level differences in public goods, norms, aspirations, and expectations, suggesting that they cannot fully provide adjustments for cross-country subjective well-being answers. However, they are an important first step toward understanding cultural differences in SWB answers.

Adaptation

Adaptation is one of the most critical challenges to SWB research. From a methodological viewpoint, there are two problematic aspects related to adaptation – (i) subjective well-being restoring to its predetermined baseline (i.e., "set point") after positive and negative life events, and (ii) changes in the way people evaluate their lives over time (recalibration) (Stone and Krueger 2018). First, complete adaptation implies that life events, such as a divorce or the birth of a child, initially change subjective well-being, but after a few years, subjective well-being levels go back to the levels before the life event. If subjective well-being levels always return to a genetically predetermined *set point*, policy interventions can only have temporary rather than long-lasting effects. Moreover, complete adaptation would imply that the impact of different policies or life events on subjective well-being based on short-run analyses may be overestimated (OECD 2013). Then, the key questions for policy may relate to understanding what policies improve people's SWB without being subject to adaptation and, conversely, how policies and interventions can

speed up the adaptation to negative events and encourage resilience. Indeed, the ability to adapt is a defense mechanism shielding people from adversity and, as such, is a good thing (Graham 2011). In this sense, adaptation is related to resilience.

Economists and psychologists have studied how people's happiness and life satisfaction change before and after different life events, i.e., whether they anticipate and adapt to them (Clark et al. 2008b). Economists tend to reject claims of complete adaptation, and psychologists tend to believe in set-point theory and the idea that people have predetermined levels of happiness to which they return after life shocks. Research generally shows that individuals adapt to *most* positive and negative life shocks and events, such as divorce, the death of a spouse, marriage, or the birth of a child, though there are some country differences (Clark 2016b). For example, in all contexts in which it has been studied, the birth of a child is preceded by an increase in subjective well-being (in anticipation) and then complete adaptation to it over time (Clark 2016b). Nevertheless, the results are more mixed when it comes to marriage. For instance, the evidence from Germany, Switzerland, the UK, and Australia points to complete adaptation to marriage. However, marriage leads to lasting increases in life satisfaction in Russia and South Korea (among men).

However, many recent studies show that adaptation to income and other aspects of economic and social life is incomplete. In other words, people's life satisfaction and happiness levels may recover after a shock, but not go back to their original levels. For instance, people do not fully adapt to disability. Oswald and Powdthavee (2008) use British longitudinal data to document that only half to a third of the subjective well-being dip following disability dissipates over a 5-year period.

Moreover, people do not adapt at all to unemployment, pollution, or poverty, meaning that their life satisfaction and happiness levels continue to decline with time spent in the condition (Clark 2016b; Clark et al. 2016). Using cohort data and applying a life-course approach to subjective well-being, Clark and Lepinteur (2019) also document, rather depressingly, that past unemployment continues to reduce current life satisfaction. As such, past unemployment experiences are really scarring. In addition, Nikolova et al. (2020) show that there is no adaptation to involuntarily losing a salaried job or a business – the dramatic dip in life satisfaction following both events lasts 2 or more years, albeit being much stronger for failed entrepreneurs (Fig. 2). In general, it seems that people adapt to situations that bring pleasant and unpleasant certainty, while they fail to adapt to situations of uncertainty and volatility (Graham 2011).

There is a second issue related to adaptation that poses challenges for happiness researchers. Specifically, recalibration refers to the fact that people may change how they report their subjective well-being over time (Ubel et al. 2010). For example, suppose that Person A, who experiences no change in life circumstances themselves, initially rates their life satisfaction at 5 on a scale of 0–10. Suppose that Person A's childhood friend becomes seriously injured in an accident and must spend the rest of their life in a wheelchair. As a result of this accident and seeing how the friend's life circumstances and opportunities have changed, Person A revises their life evaluation and now rates their life as a 7 (on a scale of 0–10) as opposed to 5 but has experienced no changes in life circumstances.
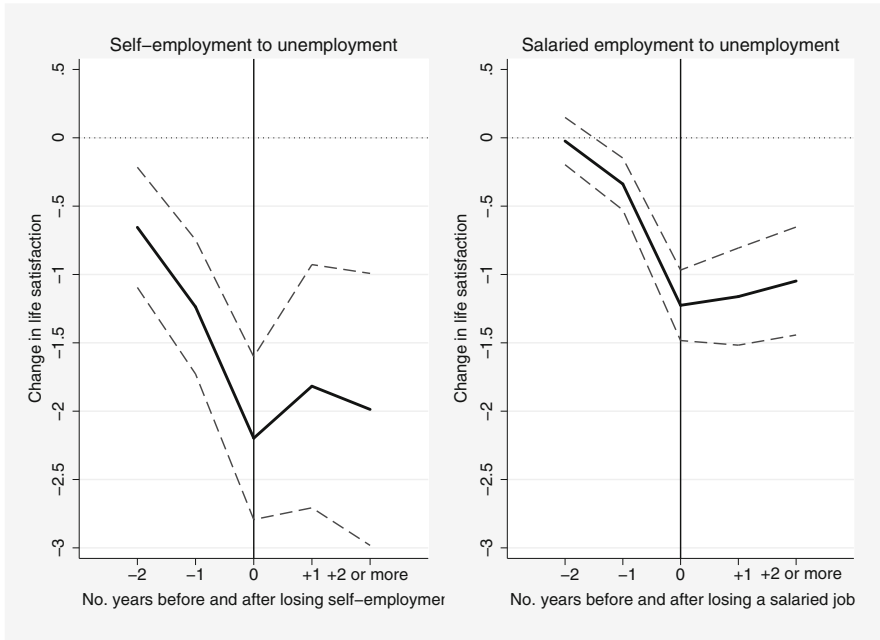
Fig. 2 Life satisfaction patterns before and after losing self-employment and salaried employment. (Source: Nikolova et al. (2020) based on data from the German Socio-Economic Panel v.34. Notes: The figure illustrates the within-person changes in life satisfaction following the switch from self-employment to unemployment (left panel), and salaried employment to unemployment due to a company closure (right panel) based on fixed-effects regressions. The reference category is 3 or more years before becoming unemployed. The analysis sample in this graph is based on respondents who are observed 3 or more years before becoming unemployed and then remain unemployed for 2 or more years. The dashed lines refer to the 95% confidence interval. The x-axis denotes the number of years before and after becoming unemployed. The y-axis designates the change in life satisfaction. Life satisfaction is measured on a scale ranging from 0 (completely dissatisfied) to 10 (completely satisfied). The findings should be interpreted as the within-person change in life satisfaction with respect to the score 3 (or more) years before that person becomes unemployed)

Both issues related to adaptation are still subject to ongoing research. The goal is to distinguish between resilience and *habituation* and develop statistical techniques to deal with recalibration (Stone and Krueger 2018).

Determinants of Subjective Well-Being

Subjective Well-Being and the Individual

There is now a large body of literature on the correlates of happiness and life satisfaction at the individual level, which reveals universal *patterns* across different contexts (Bhuiyan and Szulga 2017; Blanchflower and Oswald 2004). With the

availability of the Gallup World Poll now surveying about 150 countries worldwide since 2005/2006, studies have shown that the key individual-level subjective well-being determinants are generally similar across different societies and levels of development (Graham 2009; Helliwell and Barrington-Leigh 2010). Happiness and life satisfaction are negatively correlated with unemployment and divorce. The healthy, the married (as well as those in stable partnerships), and urban residents generally have high life satisfaction and happiness levels than their counterparts. SWB is also higher among the young and the old, with a dip occurring around the 40s or early 50s (Steptoe et al. 2015; Blanchflower and Oswald 2008). Additionally, both own income and the income of a reference group (i.e., relative income) matter for happiness and life satisfaction (e.g., Clark et al. 2008; FitzRoy and Nolan 2020; Senik 2009 and see ▶ "Wage Satisfaction and Reference Wages" chapter in this handbook). Studies generally find that women are happier and more life satisfied than men, except in places where gender rights are compromised (Graham and Chattopadhyay 2013). Stevenson and Wolfers (2009) find a trend of declining female happiness in several industrialized countries, including the United States, although later studies suggest that trend has since reversed, with men experiencing greater declines (Herbst 2011). The evidence on how having children is associated with life satisfaction and happiness remains mixed (MacKerron 2012).
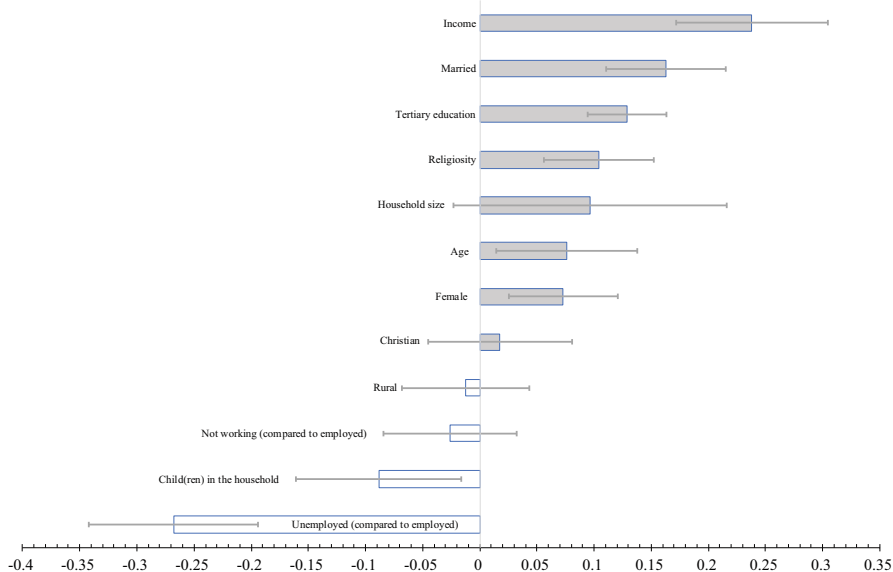
Figure 3 shows the determinants of life evaluations (based on the Cantril ladder-of-life question, measured on a scale of 0–10) in the US sample of the Gallup World Poll for 2009–2018. Evidently, income is strongly positively associated with life evaluations, while unemployment has the greatest negative association with perceptions of best possible life, which is an evaluative well-being measure. Household size, living in a rural environment, being out of the labor force, and being Christian are unassociated with life evaluations, which is evident from the fact that the 95% confidence intervals are crossing the zero axis.

Nevertheless, there are important differences in the patterns regarding the SWB determinants across levels of development (Bhuiyan and Szulga 2017; Graham and Nikolova 2015). For example, there is a life satisfaction and positive affect differential in favor of urban residents in low-income countries and in favor of rural residents in developed countries (Burger et al. 2020; Easterlin et al. 2011). At low levels of economic development, as captured by GDP per capita levels, living in an urban setting means higher incomes and higher opportunities than living in a rural setting. However, at high levels of economic development, the disappointments of urban life, such as congestion, inequality, and anomie may dominate, and residents of rural areas may experience higher happiness and life satisfaction than urban dwellers (Burger et al. 2020; Easterlin et al. 2011).

Moreover, the short-run relationship between income and subjective well-being at the individual level deserves some attention. Calculations from the Gallup World Poll individual-level sample for 2009–2018 show that the simple correlation coefficient between life evaluations and per capita household income is 0.33, and that between smiling the previous day and income is 0.05.

It is widely accepted in the literature that in a cross-section, rich individuals within a country have higher positive hedonic well-being and life satisfaction levels
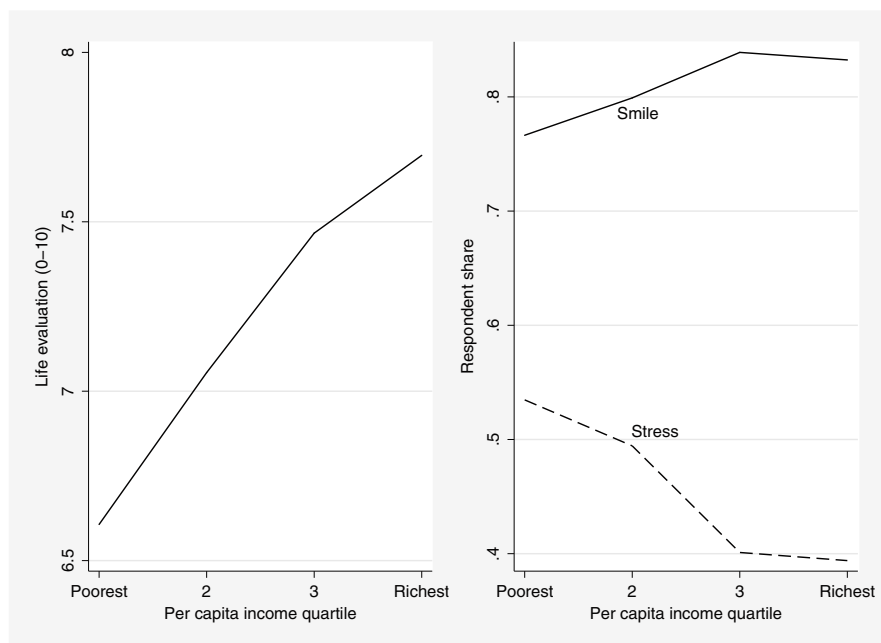
Fig. 3 The determinants of individual-level life evaluations in the United States, 2009–2018. (Source: Authors based on Gallup World Poll data for the United States, 2009–2018, N = 6,268. Notes: The bars represent the change in life evaluations (on a 0–10 scale) associated with a one-standard deviation change in the corresponding determinant. The whiskers are based on 95% confidence intervals. They were obtained from regressing evaluations of one's best possible life on the variables identified above, along with year-fixed effects. The reference category for the employment status variables is "employed" (full time or part time). Income is per capita household income in international dollars and is log-transformed; the subsequent point estimate is used to calculate the association with a doubling of per capita income. Gallup calculates per capita annual income in using the World Bank's individual consumption PPP conversion factor, making income estimates comparable across all countries. Life evaluations are based on the ladder-of-life question for the period 2009–2018, asking respondents to rate their current life circumstances on a ladder going from 0 to 10, where 0 is the worst possible life imaginable, and 10 is the best possible life imaginable)

than their poorer compatriots. Nevertheless, while the positive relationship between household income and positive affect tapers off at a household income of about 75,000 USD, the relationship between income and life satisfaction continues in a linear fashion (Kahneman and Deaton 2010). In other words, while additional household *income* is unassociated with *additional* positive affect beyond a household income of 75,000 USD when it comes to life evaluations, additional income continuously brings additional life satisfaction, and there is no satiation point in the short run. Figure 4 below illustrates these points using estimations based on data for the United States from the Gallup World Poll, averaged for 2009–2018.

Studying the causal relationship between income and subjective well-being is challenging because income increases (or decreases) are usually non-random and anticipated. For example, workers who have high unobserved ability and motivation are both more likely to be happy and satisfied with their lives and also more likely to

Fig. 4 Life evaluations, positive and negative hedonic well-being, United States, 2009–2018. (Source: Authors based on Gallup World Poll data for the United States for 2009–2018. Notes: Life evaluations are based on the ladder-of-life question, averaged for the period 2009–2018, asking respondents to rate their current life circumstances on a ladder going from 0 to 10, where 0 is the worst possible life imaginable, and 10 is the best possible life imaginable. Smile is based on the share of respondents reporting that they smiled or laughed a lot the day before, averaged for the period 2009–2018. Stress is based on the share of respondents reporting that they experienced a lot of stress the day before, averaged for the period 2009–2018. Gallup calculates per capita annual income in using the World Bank's individual consumption PPP conversion factor, making income estimates comparable across all countries. The income variable is log-transformed and individuals are placed within four bins (income quartile groups) based on the overall individual income distribution in the United States during the 2009–2018 period)

put a lot of effort on the job and earn a higher income. Exogenous shocks in income are rare, though economists have used some clever identification strategies to study the effect of income on SWB.

For example, winning the lottery may be used as a viable identification strategy, mainly because it is independent of one's happiness levels. One much-cited psychology study (Brickman et al. 1978) cross-sectionally compared the average happiness and mood levels of 22 lottery winners to those of a control group of 22 nonwinners. It concluded that winning the lottery is unassociated with happiness. Another study (Kuhn et al. 2011) with a robust research design and using Dutch data, which also controls statistically for the number of lottery tickets bought, also found no effect of winning the lottery on happiness. Nevertheless, a problem with the lottery tickets studies is that winning the lottery can only happen if individuals

purchase lottery tickets. The more money lottery players spend on tickets, the greater the chance of winning. Therefore, results documenting happiness gains from lottery wins that do not control for the number of tickets purchased have a downward bias; once this bias is corrected for, the results seem to suggest that lottery wins are associated with both life satisfaction and happiness (Kim and Oswald 2020).

Another example of an unanticipated income shock comes from the sudden and unexpected income increases brought by the reunification of West and East Germany in 1990 following the Fall of the *Berlin Wall*, which presented a unique natural experiment (Frijters et al. 2004; Powdthavee 2010a). Specifically, using panel data tracing the same East Germans over an 11-year period from 1991 to 2001, Frijters et al. (2004) find that a 1 percentage point rise in real household income increased life satisfaction by 0.5 points (on a 0–10 scale). This effect is substantive and similar to the magnitude of the effect of escaping the misery of unemployment and gaining full-time salaried employment (Powdthavee 2010a).

A final example of identifying the causal effect of income on life satisfaction comes from Powdthavee (2010b), who relies on longitudinal information on the same UK respondents over time and an instrumental variables technique. The idea behind the instrumental variable technique is that the instrument should be correlated with the endogenous variable of interest (in this case, income) but not with the error term of regression equations such as (2). Powdthavee (2010b) exploits survey information about whether the respondent showed their payslip to the interviewer to instrument for income. The author assumes, however, that letting the interviewer see the payslip is unassociated with time-varying unobserved heterogeneity. The results show that a £1,000-increase in real household income leads to a small increase of 0.04 points in life satisfaction (measured on a scale of 1–7).

The main conclusion of the studies on subjective well-being and income is that there is a positive, and likely causal, short-term relationship between SWB and income, though the exact nature and magnitude of the relationship depend on the context studied, the SWB measure, and the methodology.

SWB and Society

The key societal-level determinants of SWB refer to macroeconomic and institutional factors. Studying how these factors affect SWB typically requires cross-country data analysis of Eq. (2), and the conclusions are often sensitive to which countries are included or excluded from the analyses. The availability of the Gallup World Poll since 2005/2006 has enabled cross-country (and within-country) analyses of SWB by allowing annual comparisons across more than 150 countries worldwide.

Since 2012, the World Happiness Report, a publication of the United Nations Sustainable Development Solutions Network, has been publishing SWB research and country rankings based on life evaluations and positive and negative affect. With some variation, Northern European countries often top the list, while developing countries and those plagued by war, such as Syria, often lurk at the bottom. One of

the key findings of the researchers producing the World Happiness Report is that about three-quarters of the cross-country variation in life evaluations is due to six variables – GDP per capita, healthy life expectancy, freedom, generosity, trust, and social support – leaving only up to one-fifth of the cross-country variation unexplained. The unexplained differences in SWB outcomes could be due to four sources: unmeasured country circumstances (omitted variables), differences in appraisal styles (e.g., differences in optimism or pessimism), language differences, or cultural response styles of biases. The last bias relates to country-specific differences in how people answer SWB questions, regardless of their actual experiences. However, adding a geographic region of residence control (e.g., Latin America, Europe, etc.) does not seem to change the results (Helliwell et al. 2020), which suggests that the role of the cultural component in SWB may be limited.

One key question concerns the relationship between country-level income and individual – and country-level happiness and life satisfaction. The short-run cross-sectional evidence shows that there is a positive log-linear relationship between subjective well-being and income (*GDP per capita*), meaning that richer countries are, on average, more satisfied and happier than developing countries. The relationship between evaluative well-being and income is typically stronger than that between hedonic well-being and income, as illustrated by the steepness of the slopes in Fig. 5 versus Fig. 6 below. However, in the long-run, the evidence is mixed on whether there is a long-term relationship between growth and happiness/life satisfaction (see ► "The Easterlin Paradox" chapter in this Handbook). This remains a topic of ongoing *research* and debate. New research suggests that part of the debate may be because studies had not distinguished between negative and positive economic growth – at least in the short-run, individuals' life satisfaction and happiness react more strongly to macroeconomic declines than they do to upswings (De Neve et al. 2018).

Furthermore, inflation and unemployment both negatively influence happiness and life satisfaction at both the individual and country levels (Di Tella et al. 2003; Wolfers 2003). This research finds that unemployment has a much higher psychic (i.e., subjective well-being) cost, compared to inflation, which has implications for policymakers and central banks. Business cycle volatility, as captured by the standard deviation of unemployment and inflation, imposes additional subjective well-being costs (Wolfers 2003).

The ► "Institutions and Life Satisfaction" chapter in this handbook furnishes a comprehensive overview of the relationship of political (e.g., the degree of democracy), legal (e.g., the degree of the rule of law), and economic *institutions* (e.g., economic freedom). Functioning institutions mostly have a positive relationship with life satisfaction and happiness, though some studies find no relationship. Similarly, the relationship between inequality and SWB is surveyed in the chapter ► Inequality and Happiness in this handbook. The evidence on that topic is varied, with some contributions finding a positive and others reporting a negative relationship. It seems that individuals generally dislike inequality, yet, to some, inequality may signal the opportunity to make it to the top of the income distribution through hard work.
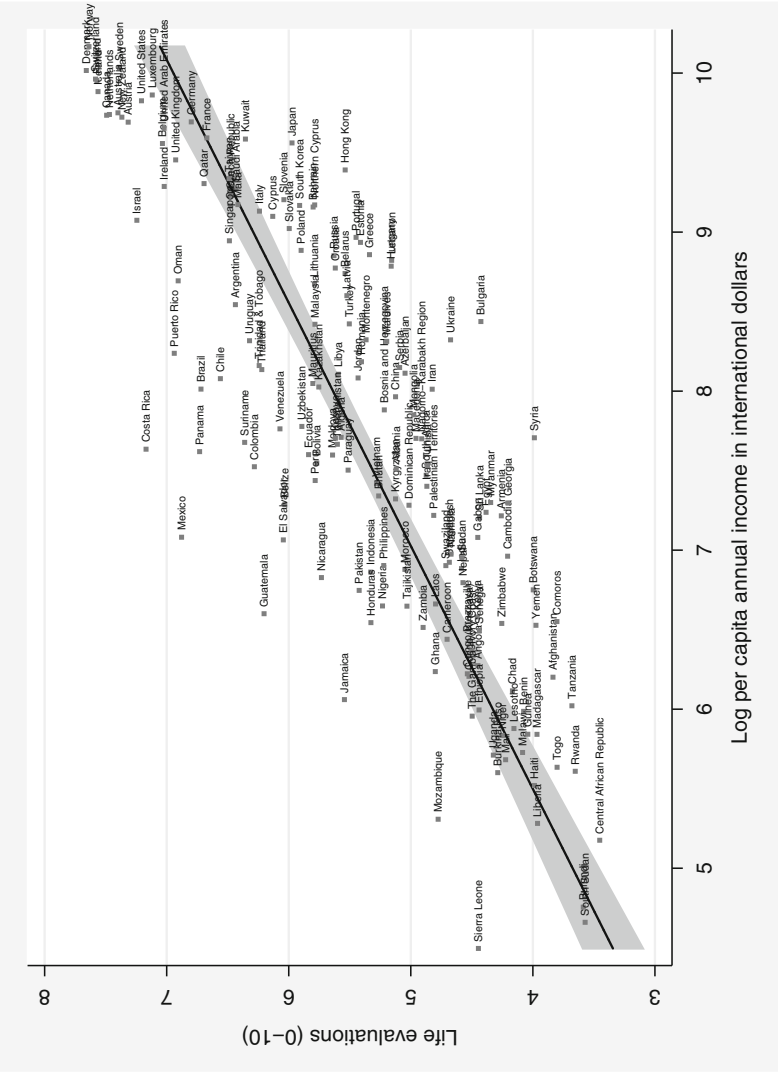
Fig. 5 (continued)

Beyond the topics related to macroeconomics and intuitions, the literature has examined the subjective well-being implications of tax policy (Gruber and Mullainathan 2005), pollution and climate change (Levinson 2012; Rehdanz and Maddison 2005), terrorism (Akay et al. 2020), international trade (Colantone et al. 2019), and *migration* flows (e.g., O'Connor 2019; see also ► "Happiness and Migration" chapter in this handbook). Finally, while most of the studies have mixed individual- with micro-level data without making any econometric adjustments, researchers increasingly realize the need to use *multilevel modeling* when studying macro- and micro-level determinants of subjective well-being at the same time (see ► "The Economic Geography of Happiness" chapter in this handbook).

Subjective Well-Being and Public Policy

Despite the emerging consensus regarding the *measurement* and *validity* of SWB, there is still a debate on how to best use these measures for public policy. Most of the policy efforts are in the first stages of systematically collecting SWB data according to the OECD guidelines. The second stage will be to use the insights of the SWB literature to design and evaluate policies. Following the OECD Guidelines (Durand and Smith 2013), governments worldwide, ranging from the United Kingdom, the Netherlands, to New Zealand, are broadening the range of welfare information they collect. They now increasingly use several well-being indicators, including objective and self-reported measures, as the basis for understanding differences in well-being.

This multidimensional approach to welfare measurement, advocated by the Stiglitz-Sen-Fitoussi Commission and the OECD Better Life Initiative, has included SWB measures as part of a broad dashboard comprising many well-being indicators, such as income and resources, environment, health, and education, among others (Durand 2015). Such use of SWB metrics can be informative when assessing the complex ramifications of policies and understanding who benefits and who loses and in what aspects of welfare. For example, a dashboard approach can help policymakers better understand and balance the consequences of interventions that increase welfare in some dimensions but not in others.

A second example of using SWB in policy relates to *cost-benefit analyses*. Policymakers have limited resources and must set priorities for which problems they will take on. They typically compare options by conducting cost-benefit analyses, which essentially add up the economic benefits of an existing or proposed

Fig. 5 Life evaluations and individual income, country-level evidence, 2009–2018. (Source: Authors based on Gallup World Poll data for 2009–2018, all available countries in the GWP except Somalia. Notes: Life evaluations are based on each country's average score on the ladder-of-life question for the period 2009–2018, asking respondents to rate their current life circumstances on a ladder going from 0 to 10, where 0 is the worst possible life imaginable, and 10 is the best possible life imaginable. Gallup calculates per capita annual income in using the World Bank's individual consumption PPP conversion factor, making income estimates comparable across all countries)

Fig. 6 (continued)

action and weigh these against the costs. To know which policy decisions are best for society in general or for specific 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 different experiences and life events, such as by calculating how much a person would be willing to pay to avoid having a health condition or work arrangement. Another advantage is that people are not prompted to directly think about the source of their well-being changes as these calculations are done by researchers ex-post.

For example, using the life satisfaction valuation approach, Nikolova and Ayhan (2019) calculate that the life satisfaction loss due to involuntary unemployment of one spouse "requires" a monetary compensation of about 50,000 Euros for the other spouse. In another example, Powdthavee and van den Berg (2011) calculate the "shadow prices" of having different health conditions, which allows an ex ante comparison of different costs and benefits of different health treatments. The authors find that depression and anxiety appear to be among the most debilitating health problems, requiring compensation of £455 million per year to offset the life satisfaction dip associated with having this condition. Such calculations can be made for many life events and circumstances, including social relationships, marriage, social interactions, death of a loved one, airport noise, pollution, and others (e.g., see ▶ "The Price of What Money can't Buy: Part II" in Powdthavee 2010a). This method makes it easy to compare the relative impact of such life events and circumstances using the same metric, which underscores the relevance for policy and cost-benefit analyses that can be used by judges, practitioners, environmental scientists, and others (Powdthavee 2010a).

Subjective well-being evidence can influence cost-benefit analyses in three important ways. First, the inclusion of subjective well-being assessments adds to the list of types of costs and benefits that can be quantified and included in such 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. Last, subjective well-being evidence demonstrates that a subjective 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 analyses, 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 (Graham and MacLennan 2020).

Fig. 6 Positive hedonic well-being and individual income, country-level evidence, 2009–2018. (Source: Authors based on Gallup World Poll data for 2009–2018, all available countries in the GWP except Somalia. Notes: The variable on the y-axis is based on the share of respondents in each country reporting that they smiled or laughed a lot the day before for the period 2009–2018. Gallup calculates per capita annual income in using the World Bank's individual consumption PPP conversion factor, making income estimates comparable across all countries)

SWB measures can be useful to policymakers. Yet, some caveats related to using SWB in policymaking apply. Governments should communicate to the public why SWB data are collected and how they are being used. They should not promote happiness or life satisfaction as the only societal goal and should not establish ministries to achieve that (Graham and MacLennan 2020). Currently, authoritarian governments, such as those of the United Arab Emirates or Venezuela, have proclaimed a focus on happiness and have established ministries to promote well-being. While this may sound benign, as Graham and MacLennan (2020, p. 9) argue, "Such moves can make the public suspicious of the government's motives and the data that are released." Moreover, a sole focus on SWB may make ordinary citizens automatic polling stations and their subjective well-being reports subject to misuse and misrepresentation by politicians (Frey and Stutzer 2010; Nikolova 2019). Besides, utilitarian policies that seek to maximize happiness as a government goal could be dangerous and lead to unethical decisions. For example, following the principle of maximizing total happiness could justify sacrificing the happiness of many people with low individual happiness to increase the happiness of few people with high individual utilities (MacKerron 2012). Nevertheless, empirically, this last concern may not be very serious: Given the law of diminishing marginal returns, which should also apply to SWB, it seems easier to make unhappy people happier than to make happy people happier.

However, the "new utilitarian" view on maximizing total happiness could, for example, justify ethnic cleansing. The expulsion of Nepalese minorities out of Bhutan, a country that seeks to promote Gross National Happiness, has been cited as one example of such misuse of SWB measures in a utilitarian fashion (Keating 2010; Schmidt 2017). Such considerations are less relevant for policy approaches that use SWB alongside a dashboard of different well-being indicators as the basis for welfare measurement and policy design and evaluation. Specifically, dashboard approaches examine in a disaggregated fashion many different well-being measures, such as income, subjective well-being, environmental quality, and education, which allow an understanding of whether and how, for example, certain policies may increase well-being in some dimensions but decrease it in others.

Finally, this chapter cautions against the increasing practice of merging income, happiness, and other data into composite "mashup" indices, which mix and match different metrics, scales, and conceptual bases into composite metrics that tell little novel information, and are rift with measurement error and bias.

The Future of SWB Research: Open Questions and New Directions

The research on SWB is continuously developing not just in terms of methods and data used but also in terms of topics. The research frontier in *happiness economics* has now moved way past looking at the determinants of different subjective well-being dimensions. In short, it is now well-known what makes people happy or satisfied with their lives. This overview offers some insights into the open questions

and new directions in the field. For further discussion and alternative views, see Clark (2018) and Frey (2020).

First, one of the key questions in the SWB literature is what kind of tradeoffs people make between daily feelings and long-term life or job satisfaction. For example, it is unclear whether sacrificing daily happiness underlies human progress or whether the two can go hand-in-hand. That said, achieving extreme happiness and life satisfaction and avoiding negative feelings may neither be possible nor desirable (Kashdan and Biswas-Diener 2014). For instance, respondents with the highest life evaluation levels are less likely to become reemployed after losing their job (Krause 2013) and are less likely to value different capabilities and means, such as income, health, and education (Graham and Nikolova 2015). While positive affect and life evaluations have many benefits, research shows that there could be too much of a good thing. Both negative affect and more moderate levels of positive affect and life satisfaction may indeed be optimal for creativity and avoiding risky or unhealthy behaviors (Diener et al. 2018; Gruber et al. 2011).

Second, while interest in eudaimonic well-being is long-standing (Ryff 1989), the progress in measurement and analysis has been uneven, owing to the concept's theoretical complexity. As a result, some scholars remain unconvinced of empirical research on eudaimonia. Further research is urgently needed to better understand how to measure and interpret this SWB dimension and how to link its insights to economic theory and analysis (Nikolova and Cnossen 2020).

Third, little is known about whether and how geography matters when it comes to happiness and life satisfaction (Ballas and Dorling 2013; Ballas and Tranmer 2012). For example, to what extent does where people live affect how they feel and why (not)? Future research should prioritize explorations of how SWB is related to group and place identity, feelings of affiliation and belonging, and the ability to feel solidarity with other people and places. Adding a geographical dimension to the debate could involve a consideration of interdependencies between people in different neighborhoods, cities, regions, and countries (see ▶ "The Economic Geography of Happiness" chapter in this handbook).

Fourth, researchers are exploring new dimensions of SWB, including hope, optimism, and meaningfulness. Carol Graham, for example, has been studying the relationship between hope and future-oriented investments and outcomes. Some of her early work in this area, based on longitudinal data for Russians and isolating residual happiness, found that happier people did better over time in the labor market and health arenas, with the channel being optimism for their futures (Graham et al. 2004). Subsequently, papers by Guven (2011), Krause (2013) and O'Connor (2020) find residual life satisfaction, which is interpreted as positive cognitive bias (i.e., optimism or hope), affects future outcomes including social capital and the likelihood of reemployment.

Recently, based on panel data for the United States, O'Connor and Graham (2019) found that optimists live longer and are more likely to have higher levels of education (which may be in part due to belief in their futures). Graham and Pinto (2019) also document that despair and lack of hope are robustly associated with the trends in premature mortality among less than college-educated whites in the United

States (i.e., the so-called deaths of despair), at the level of individuals, races, and counties (based on Gallup data). Hope, much more than life satisfaction, seems to display a link to behaviors that determine better futures.

In another example of new SWB dimensions, Nikolova and Cnossen (2020) examine what matters for deriving meaningfulness from work and how that determines effort in the workplace. The authors propose that work meaningfulness is a eudaimonic dimension of well-being at work. They find that autonomy, competence, and relatedness explain about 60% of the variation in work meaningfulness perceptions. Meanwhile, extrinsic factors, such as income, benefits, and performance pay, are relatively unimportant for work meaningfulness.

In addition, a new line of research (e.g., Binder and Broekel 2012; Cordero et al. 2017; Nikolova and Popova 2020) has investigated *relative* happiness. While the determinants of absolute subjective well-being levels are well documented, much less is known about how individuals and countries use their resources and endowments to reach given subjective well-being levels, i.e., about their "happiness efficiency" (Binder and Broekel 2012). The central question of such analyses is how wastefully or productively nations and persons utilize their available resources, such as income, education, and health, to reach certain subjective well-being levels relative to peers with similar or lower resources. A measure of relative subjective well-being also contributes to debates in ecological economics, according to which achieving well-being and progress cannot hinge on continued GDP growth. While GDP growth is instrumental for satisfying basic consumption needs, it may not necessarily contribute to subjective well-being in the long-run (see ▶ "The Easterlin Paradox" chapter in this Handbook). Therefore, by utilizing resources more efficiently or equitably, well-being can be achieved without excessive use of resources and endangering the planet's carrying capacity. The growing consensus that human well-being, poverty reduction, and development must go hand-in-hand with preserving the health of the environment and embracing sustainability will likely make such analyses of relative happiness critical inputs in public policy decision-making in the future.

Finally, a growing body of literature has examined how different life events spill over within the family (e.g., Nikolova and Ayhan 2019). Other studies have specifically looked into how childhood circumstances matter for life satisfaction and well-being later in life, in part due to the greater availability of cohort data (e.g., Clark and Lee 2017; Flèche et al. 2019a, b; Nikolova and Nikolaev 2018; Powdthavee and Vernoit 2013 and see ▶ "Childhood Circumstances and Well-being Later in Life" chapter in this handbook).

Other emerging topics in the happiness economics literature relate to the perceived well-being consequences of automation (e.g., Hinks 2020) and routine work, as well as those brought by aspects of globalization, such as migration, trade, and offshoring. One promising area has been the application of big data and machine learning algorithms to the study of SWB (see the ▶ "Big Data and Happiness" chapter in this handbook). Other novel topics, related to SWB research and future directions in the field, are provided in the rest of the chapters in this Section of the handbook.

Summary

In sum, the inclusion of subjective well-being and the associated metrics into economic analysis has provided new insights into *social science* and policy. Like all metrics – and empirical data – there are biases and errors that need to be accounted for, and methodological best practices that are necessary to ensure robust analysis. The field has developed a great deal in just several decades and has gone from the use of happiness data in large-scale surveys to assess the non-income dimensions of welfare, to a much more complex approach that robustly identifies distinct dimensions of well-being, which can identify patterns stemming from innate traits and those that come from the environment people navigate throughout their lives (and how the two interact), to the causal properties of these dimensions, among other things. The assumptions underlying this *approach*, and the resulting data and analysis, provide important complements to what standard economic models and analysis find, and serve to deepen our understanding of human experience and behavior.

Where does all of this leave us? Subjective well-being research and the *happiness economics* approach have slowly carved an important field in mainstream economics because they reveal important insights about human well-being that income and labor market outcomes alone cannot convey. These measures have much promise in informing public policy debates about the consequences of different interventions. They can also be useful in terms of serving as *diagnostic tools* to identify misery and ill-being, understand their causes, and design policy interventions to alleviate suffering. Accordingly, well-trained academics and members of the general public who can correctly and credibly assess the data using theory, robust empirical methods, and a range of metrics as a guide will be essential for ensuring the wider and responsible use of such measures in the policy arena.

In terms of their broader meaning in the social sciences, by being interdisciplinary in nature, subjective well-being measures have arguably brought together different academic fields. This *cross-disciplinary exchange* can only enrich the theoretical and empirical space in which economists are working.

Cross-References

- ► Big Data and Happiness
- ► Childhood Circumstances and Well-Being Later in Life
- ► Happiness and Migration
- ► Happiness Versus Utility
- ► Inequality and Happiness
- ► Institutions and Life Satisfaction
- ► Measuring Subjective Well-Being
- ► The Easterlin Paradox
- ► The Economic Geography of Happiness
- ► Wage Satisfaction and Reference Wages

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