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## MEASURING QUALITY OF LIFE: ECONOMIC, SOCIAL, AND SUBJECTIVE INDICATORS

**ABSTRACT.** Thinkers have discussed the “good life” and the desirable society for millennia. In the last decades, scientists offered several alternative approaches to defining and measuring quality of life: social indicators such as health and levels of crime, subjective well-being measures (assessing people’s evaluative reactions to their lives and societies), and economic indices. These alternative indicators assess three philosophical approaches to well-being that are based, respectively, on normative ideals, subjective experiences, and the ability to select goods and services that one desires. The strengths and weaknesses of the various approaches are reviewed. It is argued that social indicators and subjective well-being measures are necessary to evaluate a society, and add substantially to the regnant economic indicators that are now favored by policy makers. Each approach to measuring the quality of life contains information that is not contained in the other measures.

### INTRODUCTION

Questions regarding the essential qualities of a good society and the good life have captured the minds of the greatest thinkers across time and cultures. For example, in Aristotle’s concept of *eudaimonia*, individuals were called on to realize their full potentialities in order to achieve a “good life.” In contrast, Eastern philosophers stressed the virtue of restraining individual desires, and prescribed an ideology that encouraged the equal distribution of resources among people. In the categorical imperative, Emanuel Kant called for individuals to achieve a good society by acting in a moral way such that their actions could be the basis of universal laws. A challenging agenda laid down by recent trends in the social and behavioral sciences is to design scientific ways of measuring human well-being.

There are three major philosophical approaches to determining the quality of life (Brock, 1993). The first approach describes characteristics of the good life that are dictated by normative ideals based on a religious, philosophical, or other systems. For example, we might believe that the good life must include helping others because this is dictated by our religious principles. Another example of this approach is that Kant believed that judgments about the correctness

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of behavior, and therefore the good life, come from rational thought. These approaches to quality of life depend neither on the subjective experience of people nor on the fulfillment of their wishes. As we will see, this approach to quality of life is most clearly related to the social indicators tradition in the social sciences.

The second approach to defining the good life is based on the satisfaction of preferences. Within the constraints of the resources they possess, the assumption is that people will select those things that will most enhance their quality of life. Thus, in this tradition the definition of the quality of life of a society is based on whether the citizens can obtain the things they desire. People select the best quality of life for themselves that is commensurate with their resources and their individual desires. This approach to utility or the good life based on people's choices undergirds much of modern economic thinking. The third definition of quality of life is in terms of the experience of individuals. If a person experiences her life as good and desirable, it is assumed to be so. In this approach, factors such as feelings of joy, pleasure, contentment, and life satisfaction are paramount. Obviously, this approach to defining the quality of life is most associated with the subjective well-being tradition in the behavioral sciences.

These three approaches to defining quality of life have often competed in political and philosophical thought. Policy makers currently weight choice utility most heavily, however, because of the preeminence they grant to economic considerations. Nevertheless, there are limitations to a definition of quality of life that rests solely on economics and people's ability to obtain the marketplace goods and services that they choose. In the first place, economic progress may not guarantee other important factors such as an absence of crime. In some cases, economic progress might even be thought to be inversely correlated with certain facets of quality of life such as leisure time or a healthy environment. In the second place, people's choices may not make them happy, or may be inconsistent with normative ideals. In other words, people might want things that are not good or that will not make them happy. Berridge (1996), for example, found that wanting and liking arise from two different neural systems, and therefore wanting things may not be an accurate predictor of whether those things will increase subjective well-being.

In addition, measuring utility based on people's choices rests on a set of questionable assumptions about rationality and the transitivity of choices (Kahneman and Varey, 1991). Finally, the analyses of a good society only in terms of market factors clearly deemphasizes important elements that influence the quality of life such as love, self-development, and possessing meaning in life. Thus, researchers have increasingly turned to additional approaches to defining and measuring the quality of life.

During the last few decades, two new scientific approaches to measuring quality of life have been initiated – “objective” or social indicators, and the measurement of subjective well-being (SWB). Land (1996) provides a history of the social indicators and subjective well-being movements in the social sciences. The social indicators movement focuses its attention on measuring. The growth of the social indicators movement coincided with the questioning of economic growth in terms of whether more was always better (Land, 1996). Subjective well-being research, in contrast, is concerned with individuals' subjective experience of their lives. The underlying assumption is that well-being can be defined by people's conscious experiences – in terms of hedonic feelings or cognitive satisfactions. The field is built on the presumption that to understand the individuals' experiential quality of well-being, it is appropriate to directly examine how a person feels about life in the context of his or her own standards.

The empirical study of well-being is more than an intellectual exercise. The significance of this effort becomes obvious when we understand that findings in social indicator and subjective well-being research have direct relevance to the fundamental concerns of societies and individuals. For instance, to determine whether the quality of a society is improving or deteriorating, it is imperative to gain empirical evidence that is based on more than intuitions. Particularly, at a time when industrialization is transforming the lifestyles and values of every society on earth, scientific knowledge regarding human well-being is vital in determining whether material affluence should be the dominant concern in attaining a desirable quality of life. In addition to informing policy, subjective well-being findings and social indicators can also assist individuals in their everyday life decisions, such as where and how to live.

Social indicators and subjective well-being measures are based on different definitions of quality of life. The central thesis of this paper is that despite the conceptual and methodological differences between social indicators and SWB, scientific approaches to well-being need to take a comprehensive view of the phenomenon by incorporating the strengths of each perspective.

#### “OBJECTIVE” OR SOCIAL INDICATORS

Social indicators are societal measures that reflect people's objective circumstances in a given cultural or geographic unit. The hallmark of social indicators is that they are based on objective, quantitative statistics rather than on individuals' subjective perceptions of their social environment. Under the conceptual umbrella of social indicators, variables representing a wide range of societal domains have been measured and studied. For instance, variables such as infant mortality, doctors per capita, and longevity are assessed in the health domain, and homicide rates, police per capita, and rates of rape are assessed to detect crime-related quality of life. Indices derived from areas such as ecology, human rights, welfare, and education also have been sampled frequently as social indicators.

A possible objection to social indicators is that wealth accounts for so much variance in them, that they are not needed. For example, Diener and Diener (1995) reports correlations between the wealth of nations and social indicators that are often so high that one might wonder whether we should bother with the indicators when wealth may account for much of the quality of life of nations. For example, the wealth of nations correlated 0.82 with number of books published per capita, 0.73 with income equality within nations, and 0.70 with the percentage of persons attending universities. Figure 1 presents the relation between the composite Advanced QOL Index of Diener (1996) and the per capita purchasing power of nations. The Advanced QOL Index is made up of variables such as physicians per capita, savings rate, income equality, and environmental treaties signed. These two indices correlate an astonishing 0.91 ( $p < 0.001$ ), a figure that would lead many to accept the notion that the economic indices are sufficient and that we do not need any further indicators.

Figure 1 demonstrates, however, that there is more to quality of life than simply living in a wealthy nation. Compare Israel with Tunisia, which has less than half of the income of Israel and yet achieves approximately the same quality of life on the social indicator index. Similarly, one can compare Spain and Mauritius, two nations with similar incomes. Note that Spain is one-half of a standard deviation above average in quality of life, whereas Mauritius is an equal distance below average. If we argue that economic indicators are sufficient, the people of Mauritius would likely object. If we argue that we do not need economic indicators because we ought to measure social indicators that more directly reflect quality of life, the people of Tunisia are likely to protest. Even with a correlation between the two types of measures that is virtually unheard of in the social sciences, the two are not equivalent, and each gives us valuable information not contained in the other indicator. Thus, strong correlations between economic indices and social indicators does not suggest that the latter are not needed. Quite the contrary, one value of social indicators is that they contain information beyond that which is contained in economic measures. At the same time, it is clear that wealth can provide an important first approximation to the material quality of life in nations.

#### *Strengths and Weaknesses of Social Indicators*

Objectivity is one strength of social indicators. These indicators usually can be relatively easily defined and quantified without relying heavily on individual perceptions. As a result, it is technically convenient to make comparisons of social indicators across nations, regions, demographic sectors, and time. Note that “objectivity” can have several different meanings in this context. It can mean that there is widespread agreement about the value of what is being measured. For example, virtually everyone in modern nations may agree that infant mortality is bad and that literacy is good. “Objectivity” may also mean that the characteristic can be measured with great precision, and with little measurement error. For example, at least in principle, infant mortality is something that can be consensually defined and accurately measured. Finally, social indicators can be “objective” in that they do not depend on people’s perceptions, but

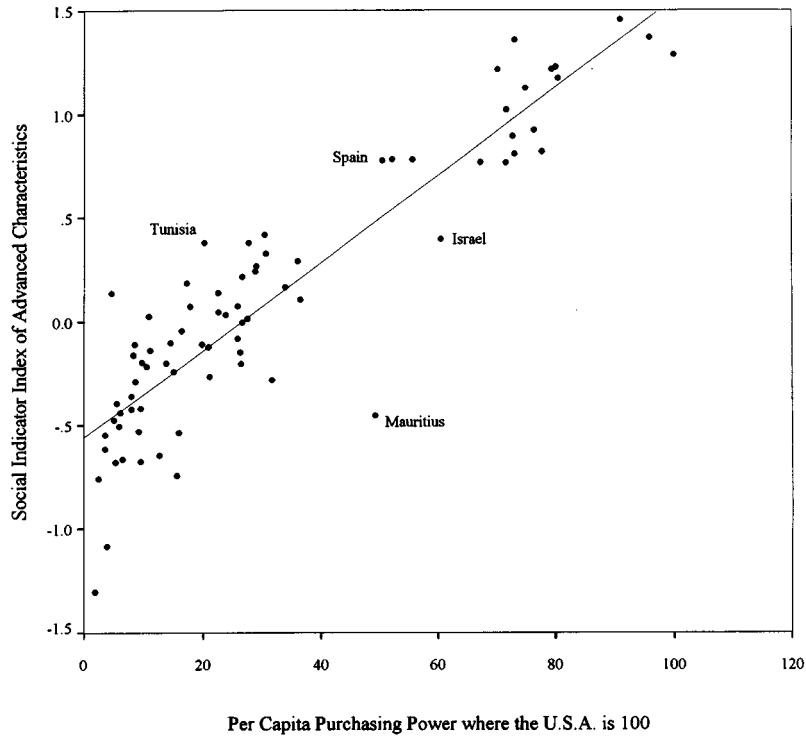


Figure 1. Economic quality of life compared to a Social Indicator Index.

can be measured in the same way by trained people and in a fashion that is relatively independent of people's opinions.

Another strength of social indicators is that they often reflect the normative ideals of a society. People are likely to value an absence of crime and clean air, for example. Furthermore, people may value these things regardless of whether they influence happiness. Thus, social indicators can assess societal qualities that do not rest solely on their influence on subjective well-being, but which are based on widely shared values.

Another strong point of social indicators is that by including measures across various life domains, they are able to capture important aspects of society that are not sufficiently reflected in purely economic yardsticks. For instance, by assessing common global problems such as human rights, deforestation, and pollution, social indicators can initiate cooperative solutions to global problems and provide opportunities to learn from one another by highlighting the

diverse paths of development. Although economists may try to interpret issues such as human rights and pollution solely in economic terms, these approaches often remain unconvincing. Thus, social indicators can capture important qualities of the society that are not adequately assessed by either subjective well-being measures or economic indices.

Social indicators, however, also suffer from several weaknesses. First, social indicators are fallible. To take one example, it is known that rape incidents are greatly underreported to the police, and therefore rape statistics are suspect. Furthermore, the possibility that the degree of underreporting may differ across cultures (e.g., more underreporting of rape in conservative societies) is an additional threat to the usefulness of the figures. Similarly, it is more difficult to measure infant mortality in nations where most infants are born at home. In nations where birth records are inadequate, it is difficult to determine longevity. Thus, although social indicators are thought to be “objective,” they are often contaminated by measurement problems.

Even when something can be measured objectively, many considerations must enter into interpreting the numbers. For example, Becker et al. (1987) point out that housing costs in an area can be measured in a very objective way. Yet, they point out that apartments may be left out of such figures, even when they are the predominant source of housing in an area. Furthermore, property taxes can vary dramatically between areas and usually do not appear in the housing cost figures. Further, housing costs are often based on a new mortgage, a factor that would be relevant to new buyers, but which would not influence the quality of life of someone who bought their home 30 years ago. In addition, the average homes in different areas may differ dramatically in quality. Thus, Becker et al. conclude that “the housing-cost data, although they are seemingly quite objective, are potentially quite far removed from the kind of data that we would like to use in ranking places to live” (p. 172).

Another limitation of social indicators is the inevitable role of subjective decisions in selecting and measuring the variables. Just as the gross domestic product index (GDP) in the U.S.A. does not count volunteer work or housework as part of the economic service sector, other indicators also necessarily rely on subjective decisions

in including or excluding things. For instance, what counts as murder varies across legal jurisdictions. Similarly, the index of deforestation in a nation usually does not accurately reflect the amount of old-growth forests that are felled because new plantings are subtracted from logging. Nevertheless, there are heated debates about the merits of new, managed groves versus old-growth timber areas. Thus, hectares of deforestation may not represent the completely objective fact that it appears to be. Ultimately, someone must decide what types of cutting of trees and what types of planting of trees are to be counted. In other words, it is inevitable that subjective judgments will enter into the ostensibly "objective" figures.

Even when variables are accurately measured and there is agreement about what should be counted, there is still the question of whether they unequivocally represent the society's notion of "good". It is often difficult, for instance, to agree on an optimum between "too much" and "too little" spending on controversial issues such as social welfare and national security. Even in the case of basic indices such as infant mortality and longevity, it is not clear where the optimum point lies. For example, infant mortality might be reduced from five per 1,000 births to one only with an enormous medical expense, and by saving some infants who are badly deformed or severely retarded. Whether this decrease would be desirable and worth the cost to society is a subjective value judgement. Similarly, many question the wisdom of extending longevity by keeping people alive who are extremely senile or severely incapacitated. Another example is that, although most people dislike deforestation, they may believe that the benefits often outweigh the costs. In sum, questions often arise about the optimum levels of indicators, and about tradeoffs between specific indicators and other values.

Becker et al. (1987) present an informative analysis of weather indicators in assessing the quality of life of American cities. The rankings of American cities has often included a climate factor that is based on an arcane formula. Basically, the formula rates cities highly that remain close to 70 degrees all year round, and penalize places that have extremely cold or extremely hot temperatures. Yet, Becker et al., point out, some people enjoy hot weather and others like cold weather, and yet others relish distinct changes of season. Who is to decide that a place is better if it has a mild climate? Thus,



the idea of social indicators rests on the assumption that there is a widespread agreement in a community about what factors are most desirable, a presumption that is often problematic in complex and heterogenous societies (Land, 1996).

Another weakness of current social indicators is that the variables are usually selected in an ad hoc fashion, constantly creating controversies among researchers as to which variables to choose and how they should be weighted. For instance, in rating the quality of major cities in the U.S.A., those with a more academic bent may include the number of libraries and museums in the overall index, whereas others might stress the importance of leisure opportunities such as hunting and horse racing. How should the investigator proceed in selecting or weighting some social indicators over numerous others?

A dramatic illustration of the effects of weighting of indicators comes from a study by Becker, Denby, McGill, and Wilks (1987). They studied the quality of life in the 329 metropolitan areas of the U.S.A., based on variables such as climate, health care, crime, and economics that are usually used to rank cities. Becker et al. found that, depending on the weights given to the variables, there were 134 different cities that could be rated first and 150 different cities that could be rated last. Indeed, there were 59 cities that could be rated *either* first or last, depending on the differential weighting of the very same variables! Although the quality of life of cities or nations may be judged to be totally different depending on the selection and weighting of measures, a procedure for resolving how to weight the indicators is lacking. If we cannot agree on how to weight indicators, and there are tradeoffs between them, judging the quality of life based on multiple indicators is problematical. Adding to the confusion is the fact that different people inevitably give differential importance to various indicators.

Secondly, because goals and means to those goals are often assessed simultaneously in many social indicators studies, it is difficult to determine whether means indicators are the cause or an effect of the referred phenomenon. For example, police control (means indicator) is more necessary in areas with high crime rates (ends indicator). A "police per capita" figure, therefore, carries an ambiguity of being either a cause or a consequence of the crime rate in the given area.

Another important methodological issue is whether to use a general index (combination of indicators) of quality of life, or to use the individual indicators separately. When indicators are combined, the general index gains simplicity and breadth at the cost of more detailed information. If we use a global index such as Diener's QOL Index (1995) to assess the quality of life of nations, we may overlook important differences on specific social indicators. The use of multiple indices, on the other hand, allows the researcher to observe one's object of interest from multiple angles but does not allow a parsimonious understanding of the data.

Although many of the dilemmas observed in the current field ought to be decided in reference to the theoretical assumptions and the goals of each study, the lack of methodological and conceptual order inevitably calls for significant amounts of subjective judgment in the research process. In response to the need for a conceptual framework for selecting quality of life measures, Diener (1995) recently proposed a value based index of quality of life, with the suggestion that variables selected for measuring quality of life are commonly reflective of the prominent values endorsed in the society. The value based index of quality of life proposed by Diener is grounded on the universal structure of values constructed by Schwartz (1994). Although the relative emphasis among the values differ across cultures, Schwartz compiled a comprehensive set of 45 etic values that can be arranged around a two-dimensional circular structure that consists of seven pie-shaped value regions – Hierarchy, Mastery, Affective Autonomy, Intellectual Autonomy, Egalitarian Commitment, Harmony, and Conservatism. To ensure systematic representation, Diener's quality of life measure was created by sampling two variables from each of the seven value regions using indices from the *Compendium of Social Statistics and Indicators* (United Nations, 1991), the *1991 Demographic Yearbook* (United Nations, 1992), and the *World Development Report 1994* (World Bank, 1994).

The Diener QOL Index has two separate indices – the Basic QOL Index and the Advanced QOL Index. Previous measures of quality of life were often based on variables that discriminate the quality of life of nations at one level of economic development, but were less sensitive to the quality of life features of nations at a different level

of development. Diener and Diener (1995), for instance, found that roughly 62 percent of the variance in the overall quality of life of nations was accounted for by income (per capita GDP). Despite the high relation, however, a significant number of quality of life variables had a nonlinear relation with income. For example, quality of life variables such as literacy and percent attending tertiary schools rose rapidly with income among low income nations but leveled off at high levels of income. On the other hand, variables reflecting advanced scientific activity, such as Nobel prizes per capita, were found to accelerate rapidly at the upper levels of income. Overall, the findings indicated that advanced scientific achievements and technology tend to emerge after the basic physical needs of the citizens are fulfilled during a society's economic development process. Accordingly, Diener found the Basic QOL Index to be more sensitive in differentiating the quality of life in less wealthy nations, and the Advanced QOL Index better at discriminating wealthier societies.

Using values as a conceptual vehicle for constructing and selecting quality of life variables is an important option for social indicators research. Universal human values suggest a systematic way of selecting social indicators that reflects diverse dimensions of well-being. In addition to the general value system approach, measurement of culture specific values can assist in the creation of refined social indicator composite indices that reflect the indigenous concerns of each society. For instance, the percentage of elderly citizens living apart from their offspring may be an important measure in Eastern cultures where filial piety is considered an important social value (Sung, 1995). Although Diener's index has a number of shortcomings that were in part due to the restricted nature of the variables that were available, the idea that societal values can serve as one source by which to systematically choose social indicators is a promising suggestion for future studies.

Probably the largest limitation of social indicators stems from the fact that objective indicators may not accurately reflect people's experience of well-being (Andrews and Withey, 1976; Campbell et al., 1976). Individuals' sense of well-being is an experience that is far more complex and multiply determined than assumed by descriptive social indicators based on external circumstances in a society. As Schneider (1976) pointed out, despite their intuitive appeal, there is

no *a priori* reason to believe that aggregated social indicators actually reflect the quality of life experienced by people. Such misperceptions, according to Schneider, lead to a confusion of the important difference between the physical and psychological aspects of well-being. The work of Campbell, Converse, and Rodgers indicated that objective factors were only modestly correlated with people's reported levels of subjective well-being. As researchers realized the imperfect relation between objective conditions and psychological well-being, many accepted the importance of directly assessing the subjective, experiential elements of well-being.

#### SUBJECTIVE WELL-BEING

The basic premise of SWB research is that in order to understand the well-being of an individual, it is important to directly measure the individual's cognitive and affective reactions to her or his whole life, as well as to specific domains of life (for a review of the field, see Diener, 1984; Myers and Diener, 1995). Subjective well-being research has philosophical roots in the utilitarian tradition of Jeremy Bentham. He maintained that there are two sovereign motives, pleasures and pain, and therefore that societies ought to strive for "the greatest happiness of the greatest numbers."

Subjective well-being consists of three interrelated components: life satisfaction, pleasant affect, and unpleasant affect. Affect refers to pleasant and unpleasant moods and emotions, whereas life satisfaction refers to a cognitive sense of satisfaction with life. Both affect and reported satisfaction judgments represent people's evaluations of their lives and circumstances. Based on numerous findings that uncover a relative independence between pleasant and unpleasant affect (Bradburn, 1969; Diener and Emmons, 1985), SWB includes both positive and negative affective experiences of the individual. In contrast to the traditional clinical models of mental health, subjective well-being does not simply refer to an absence of negative experiences. High SWB, also includes the presence of positive affect, and satisfaction with life and domains of life such as work and leisure. Because an individual or a society that is high on one of the SWB factors can still be low on the others, all three of the separable components should be assessed.

As the term indicates, subjective well-being is primarily concerned with the respondents' own internal judgment of well-being, rather than what policy makers, academics, or others consider important. In economics, consumers' choices are used as measure of utility that is based on the individual's behavior rather than on the judgments of experts. In SWB, the concept that is analogous to utility based on choice in economics is experience – how people internally react to and experience the events and situations in their lives. Whereas an economist would judge the quality of a job by people's choices regarding this work versus other work, a subjective well-being researcher would assess the quality of the job by people's pleasant experiences and unpleasant experiences, and satisfaction related to the position.

Subjective well-being researchers have uncovered a number of intriguing findings at the individual, social, and cultural levels that complement previous notions of well-being that were based largely on objective indicators. One interesting finding is that virtually all nations are on average above the neutral point on life satisfaction and hedonic balance measures (Diener and Diener, 1996). For example, in the World Value Survey II of nationally representative samples of 43 nations and regions (e.g., N. Ireland), a positive hedonic balance above neutrality was found in all 40 societies that reported this variable, and only 3 (7%) of the societies were below the midpoint of the life-satisfaction scale. Another interesting finding is the surprisingly small correlations that are often obtained between SWB and objective resources. For instance, subjective well-being correlated 0.13 with physical attractiveness (Diener et al., 1995), 0.12 with income (Diener et al., 1993), 0.10 with physician-rated health (Okun and George, 1984), and 0.17 with intelligence (Campbell et al., 1976).

The small correlations between SWB and objective resources may be due to a number of factors. The first possibility is that people rapidly adapt to their levels of resources and experiences. Even dramatic life events, such as winning a lottery or experiencing a spinal cord injury, seem to have a short-lived effects on people's SWB (Brickman et al., 1978; Suh, Diener and Fujita, 1996). Another important reason for the low correlation between objective circumstances and subjective well-being is that the experience of well-being is influenced not only by external life conditions but also by stable

dispositional characteristics. Just as a glass of water can be perceived either as half-full or as half-empty, objectively similar life circumstances can be construed very differently, depending on the individual's personality. Major personality traits that are associated with SWB are extraversion and neuroticism (Costa and McCrae, 1980; Diener et al., 1992), optimism (Scheier and Carver, 1993), and self-esteem (Campbell, 1981; Diener and Diener, 1995).

People's psychological adjustment strategies to objective conditions appear to be remarkably flexible. A recent study by Diener and Fujita (1995), for instance, illustrates the importance of understanding the adjustment processes that are involved in the relation between objective resources and personal well-being. Respondents with different resources emphasized varying personal goals, which required the resources that they possessed. Similarly, participants pursued a variety of different goals with a given resource. People tended to choose personal goals for which they had relevant resources, and the degree of congruence of individuals' goals with their resources predicted their SWB.

In a similar vein, people flexibly adjust their cognitive attention and expectancies to external circumstances in ways that are advantageous to themselves. Many objective resources, such as wealth and physical attractiveness, are relatively concrete matters on which interpersonal comparisons are easy to make. Thus, it seems possible that objective resources should strongly influence individuals' SWB because how people perceive their assets in comparison to others may determine how they feel about their lives and circumstances. Diener and Fujita (1996) reported results, however, that run counter to the predictions suggested by this social comparison approach. When college students were requested to evaluate themselves and a comparison other (roommate) on diverse personal characteristics (e.g., physical attractiveness, health), they reported the most satisfaction with the characteristics on which they also rated their roommate to be high. For instance, the respondents were more satisfied with their social life when they also rated their roommate's social life favorably, disconfirming the idea that people are more likely to be dissatisfied when they are forced to compare themselves to nearby others who are superior to themselves. The review of the social comparison literature by Diener and Fujita suggests that the objec-

tive level of other people in one's environment is often much less important than flexible coping strategies such as whom one selects for comparison. Furthermore, their review indicates that there are large differences in how frequently individuals compare themselves to others.

Rather than being forced to compare one's resources with others, individuals often take an active role in the comparison process by selecting targets and the domains that are likely to result in beneficial comparisons (e.g., Kruglanski and Mayseless, 1990; Wood et al., 1985). When the prospects of social comparison are unfavorable, individuals often rearrange the priority of their goals and redirect their attention to tasks or situations that are more likely to result in a positive outcome for themselves. Being primarily concerned with the objective quantity of resources, however, social indicators often have the weakness of being unable to reflect the flexible psychological processes that mediate the link between external resources and individual experiences.

Subjective well-being findings at the national and cultural levels also show interesting patterns. In their study of the mean SWB levels of 55 nations, Diener, Diener, and Diener (1995) found that SWB relates strongly to income, human rights, and societal equality. The income and SWB relation in this study ( $r = 0.59$ ) was stronger than the typical findings within the U.S.A., probably because the range of income is larger across nations than it is in highly developed countries. In addition, in correlations that are based on mean levels of variables across societies, individual factors (e.g., an individual's temperament and the quality of her marriage) that can influence individual subjective well-being tend to be averaged out, and therefore these society-wide variables often correlate more strongly with mean level differences of SWB across nations.

The overall pattern of variables that relate significantly to SWB suggests that the degree to which a society fulfills the basic needs of individuals and provides opportunities for them to achieve their goals are important determinants of national SWB. For instance, income allows various means for meeting one's needs and goals, whereas human rights and equality reflect freedom and opportunities for pursuing individual goals within a society. A number of other societal variables, including income growth, however, did not relate

to SWB in the Diener et al. study. One possible reason why a nation's SWB level does not relate to its rate of income growth is because the norms on which judgments of material well-being are based increase along with the income growth of the society (Easterlin, 1995).

Another notable finding at the international level was the strong relation between SWB and individualism (Diener, Diener, and Diener, 1995). The strong covariation between individualism and SWB ( $r = 0.77$ ) across nations, which persisted even when the income level of nations was controlled, has interesting implications. The finding raises the possibility that cultural factors play an important role in determining national levels of well-being. For instance, based on objective social indicators alone, it is unclear why affluent collectivistic countries such as Japan rank modestly in SWB. In addition, depending on the cultural characteristics of the society, the causes of SWB may also be different across nations. Compared to the findings in highly individualistic countries (e.g., the U.S.A.), Diener and Diener (1995), for instance, found that the relation between self-esteem and SWB was substantially lower in collectivistic nations where personal attributes are emphasized less. By exploring why SWB correlates so highly with individualism, one can gain important insights into human well-being in general. For example, are members of individualistic cultures happier because their society affords more personal freedom and self-determination? Do individualistic people consciously strive to be happier because positive emotions are considered to be more desirable in individualistic cultures (Diener et al., 1995)? Although the exact relation between individualism and SWB is yet to be determined, the topic raises issues that have major implications for understanding well-being.

It is important to note that SWB should not be equated with frivolous hedonism. Subjective well-being is not a state of simply being merry without having any deeper concerns. The central elements of well-being, a sense of satisfaction with one's life and positive affective experiences, are derived from the context of one's most important values and goals. If people value altruism or hard work, these are the behaviors that are likely to bring them a feeling of long-term satisfaction. Subjective well-being is most likely to



be experienced when people work for and make progress towards personal goals that derive from their important values.

### *Strengths and Weaknesses of SWB Measures*

Despite the impression that “subjective” connotes lesser scientific credibility, SWB measures possess adequate validity. For example, temporal stabilities in the range of 0.5 to 0.7 have been found over a period of several years for self-reports of global well-being (Diener, 1994; Suh et al., 1996) and response artifacts appear not to be as strong as some claim (Diener et al., 1991; Diener et al., 1995). Also, SWB reports converge with other methods of well-being measurement, such as with the reports of significant others, daily mood ratings, number of positive and negative events recalled, and clinical interviews (Pavot et al., 1991; Seidlitz and Diener, 1993).

The major advantage of subjective well-being measures is that they capture experiences that are important to the individual. Because most objective social indicators are indirect measures of how people feel about their life conditions, SWB measures provide an important additional assessment that can be used to evaluate the evidence summarized by objective indicators. If objective and subjective indicators converge, the researcher can make more definitive conclusions about quality of life. Where objective and subjective measures diverge, a deeper analysis of the meaning of the indicators is required.

Another strength of subjective well-being measures is that when proven inadequate, they are often easier to modify in later studies than objective indicators, which are usually compiled by sources (e.g., governments) beyond the reach of most investigators (Davis and Fine-Davis, 1991). Third, by measuring the experience of well-being on a common dimension such as degree of satisfaction, SWB measures can more easily be compared across domains than can objective measures that usually involve different units of measurement (e.g., degree of pollution, calories, and income). Thus, it is theoretically possible to create a valid national indicator of SWB that can be used in international comparisons. Such an indicator has the advantage of summing across the diverse factors that influence people’s lives.

Subjective well-being measures also have a number of weaknesses. First, artifacts that produce particular findings have not been

completely eliminated. Although self-reported measures of well-being have adequate validity and reliability, it is naive to assume that every individual's responses are totally valid and accurate. For example, Schwartz and Strack (1991) review some of the situational factors that can influence people's life satisfaction reports. Therefore, whenever possible, SWB should be measured by multiple methods (e.g., informant reports, daily reports of moods, and, memory recall for positive and negative events) that do not share common methodological shortcomings.

Second, subjective well-being measures may not fully reflect the objective quality of community life in a locale because they may be more dependent on temperament and personal relationships than on societal factors. Also, because people naturally adapt to situations, social expectations may influence individuals' SWB. For example, poor economic conditions may be perceived less negatively if experts remind citizens about the nation's economic improvement from the past instead of focusing on the problems of the current economy. Thus, SWB findings are important, but are insufficient by themselves for evaluating a society.

Finally, it is important to realize that subjective well-being is a value that varies in importance across individuals and nations. Societies and individuals differ in the degree to which they believe that SWB is a key attribute of the good life. For instance, in contrast to a U.S.A. sample, almost 10 percent of a Chinese college student sample responded that they had never thought about whether they were happy with their lives (Suh, 1994). If happiness is only one among many values, other core values of the society must also be represented in the criteria by which that society is evaluated.

#### USING SOCIAL INDICATORS AND SUBJECTIVE WELL-BEING MEASURES TOGETHER

For policy makers, an accurate assessment of quality of life is necessary to answer several questions. Has the society progressed over time? Are the current policies achieving goals that match the ideals of the society? Have investments succeeded in bringing the desired outcomes? These are some of the fundamental questions requiring sound measures of quality of life. For individuals, the scientific

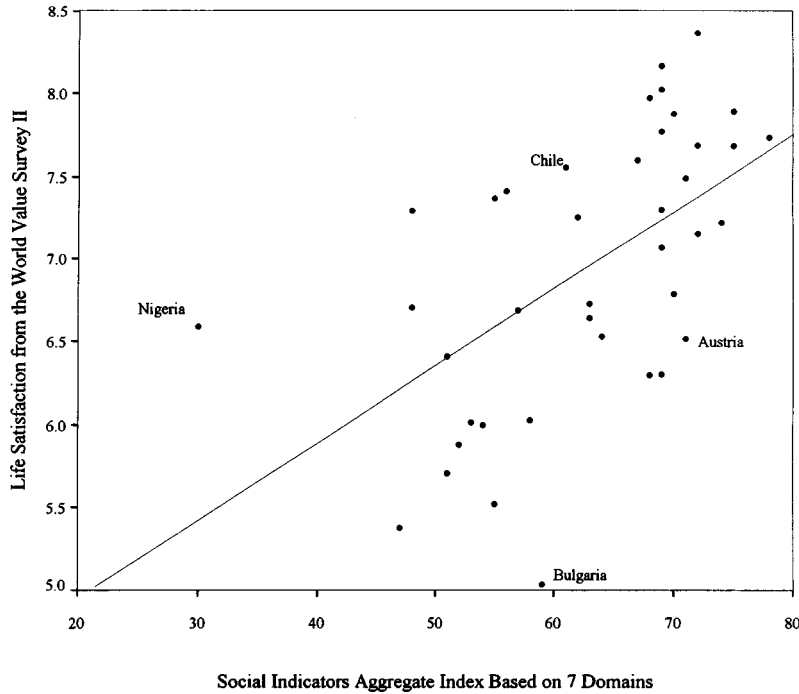
understanding of SWB can guide important decisions in life such as where and how to live. Scientific findings on well-being sometimes contradict lay beliefs that are prevalent in our culture. For instance, although material wealth is often prescribed as the shortest road to attaining happiness, Diener et al. (1985) found that 37 percent of the wealthiest Americans were less happy than the average American. In fact, people who aspire to gain material success and fame suffer more from depression and anxiety than others (Kasser and Ryan, 1993). Thus, the findings of quality of life studies can inform the future choices that people make.

Social indicators and subjective well-being measures are complementary. Not just ingredients alone, but also how they are cooked determine the taste of the final meal. Similarly, objective inputs are transformed by individuals and cultures to produce what is perceived by people as desirable or undesirable. Subjective well-being measures assess people's actual reactions that are involved in such a transactional process. What is good for people cannot be determined without taking their views into account. Being able to reflect the perspectives of individuals, subjective well-being measures allow people an input channel in which to voice their concerns and immediate demands for public funds and assistance. Measures that are based on objective standards, however, are also needed to judge the conditions of a society because people can be tolerably happy even in many undesirable circumstances.

The parallel use of social indicator and subjective well-being measures is important for a methodological reason as well. Because the measurement weaknesses of the two types of assessment are not the same, they provide alternative views of societal quality that are unlikely to be affected by common errors of measurement. Accordingly, it is a serious mistake for disciplines to engage in arguments involving the superiority of one's favorite measurement method over the others. Occasionally, political scientists or economists consider SWB measures to be "soft," although economic and social indicators also have conceptual and applied shortcomings. Psychologists, on the other hand, often accuse economic and social indicators researchers of ignoring the ultimate outcome measure of subjective well-being. Because neither set of measures is exhaustive, and the fact that each captures a different aspect of societal well-being, we

are well-advised to retain and emphasize the importance of both to policy makers.

Although social indicators and subjective well-being do correlate across societies, each type of measure yields additional information about the quality of life of societies. In Figure 2 we present the relation between life satisfaction and objective quality of life indicators across 40 nations. The subjective indicator is the reported life satisfaction of a nationally representative sample of individuals in each nation in the second World Value Survey. The social indicators index is taken from *International Living* (Lears, 1996), and includes economic, cost of living, ecology, health, culture and entertainment, freedom, and infrastructure indicators. The correlation between life satisfaction and the composite social indicator index is a strong 0.57 ( $p < 0.001$ ). Nevertheless, Figure 2 reveals that subjective well-being and objective quality of life indicators cannot be considered to be synonymous. For example, examine the social indicators values of Nigeria versus Austria, which have approximately the same mean levels of life satisfaction. On the 100-point scale, Nigeria scores only 30, whereas Austria scores over twice that high at 71. Similarly, Chile and Bulgaria share roughly the same social indicators score, but differ on average by over two scale points in life satisfaction. Despite the strong correlation between life satisfaction and quality of life as defined by social indicators, the two are not identical. The implications of the differences become most apparent when one examines nations that lie away from the regression line. We also conclude that the two are not equivalent, however, by the coefficient of determination (squaring the correlation) that suggests that scores on one index account for only about 32 percent of the variance in the other index. If one examines the mean life satisfaction and hedonic balance scores of the distributions of all nations, it is evident that several Scandinavian nations have subjective well-being greater than is predicted by their wealth or objective quality of life, and a number of Eastern European nations that were formerly in the Soviet bloc have lower subjective well-being than is predicted by economic or social indicator variables. Perhaps high expectations or dislocations in patterns of daily living have led to a lower feeling of well-being in the Eastern European nations.



Note: Means for 40 nations. Social indicators based on Lears (1996)

Figure 2. Mean subjective well-being and social indicators composite scores for nations.

What of the relation of subjective well-being measures and economic indicators? Table I presents SWB data from World War II to 1990 in the U.S.A., Japan, and France. Note that this era in these three nations represented one of the great economic growth periods in human history. Income increased dramatically during this time in all three nations, even when taxes and inflation were statistically controlled. For example, in the U.S.A. real income more than doubled, meaning that people could buy twice as many cars, bigger houses, twice as many appliances, better food, and so forth. Samuelson (1995) vividly describes the enormous increases in material welfare that occurred during the period. Yet, we can see that the SWB figures are virtually flat in all three nations. Thus, conclusions about quality of life as judged by the economic indicators diverge substantially from the conclusions drawn from the subjective indicators. Why did SWB not rise with income? One possibility is that

countervailing problems such as increased crime or divorce offset the gains in SWB produced by higher income. This explanation, however, does not seem as applicable to Japan as to the U.S.A. Another explanation is that expectations and desires rose as much or more so than income, and therefore no net increases in happiness or satisfaction occurred. Samuelson argues that expectations rose substantially in the U.S.A. after WW II, and created a sense of disappointment even in the midst of unprecedented prosperity. Whatever the explanation, it is clear that economic and subjective indicators may not follow the same path.

If objective quality of life accounts for only part of the variability in the subjective well-being of nations, what are the additional determinants? For one thing, Diener, Diener, and Diener (1995) show that a cultural factor such as individualism may account for additional amounts of variation in subjective well-being. It should be cautioned, however, that individualism covaries so strongly with the wealth of nations that it is in fact hard to separate the influence of the two. The subjective well-being data presented here from the World Value Survey are predicted, beyond the influence of income, by ratings of the importance of friends. In nations that on average rate friends as extremely important, there is a higher level of well-being, and this adds significantly in a regression equation to the influence of income in predicting both life satisfaction ( $p < 0.001$ ) and the hedonic balance between positive and negative affect ( $p < 0.01$ ). Thus, cultural and interpersonal factors, as well as temperament, may influence subjective well-being beyond the effects of societal quality of life variables.

### *Toward a More Sophisticated Understanding*

Despite the foregoing discussion, it should be noted that the social indicators and subjective well-being measures are not so clearly distinct as they first appear. The “objective” or external social indicators are replete with subjective decisions – from decisions of those who compile the data (police, doctors, etcetera) to the determination by the researcher to include or exclude specific variables. The objective indicators that researchers collect also inevitably reflect the subjective concerns of the society. The positivistic idea that we can obtain objective measures that are totally value-free is illusory.

TABLE I

Time trends in SWB based on data summarized by Veenhoven (1993) and the World Value Survey II

Scale: 0 to 10 (5 is neutral midpoint of scale)

	U.S.A.	Japan	France
	Happiness	Satisfaction	Hap./Balance
1946	7.4		5.5
47	7.3		
48	7.3		5.8
52	7.6		
56	7.7		
57	7.6		
58		5.7	
59		6.0	
1960		5.9	
61		5.9	
62		5.9	
63	7.3	6.1	
64	7.3	5.9	
65	7.0	5.8	6.3
66	7.7	5.8	
67		5.9	
68		6.0	
69		5.9	
1970	7.5	6.0	
71	7.2	5.7	
72	7.1	5.8	
73	7.1	5.9	
74	7.1	5.5	
75	7.3	5.8	6.9
76	7.2	5.8	6.4
77		6.0	6.5
78	7.3	6.0	6.2
79		6.1	6.6
1980	7.2	6.9	
81		5.9	
82	7.2	6.0	6.4
83	7.1	6.0	6.5
84	7.2	6.0	6.3
85	7.1	6.2	6.4
86	7.2	6.4	6.4
87	7.2	5.8	
88	7.3		
89	7.2		
1990		6.1	6.3

On the other hand, subjective measures may be more objective than is sometimes assumed. For instance, there are observable reactions that accompany SWB. Happy people talk and think more about positive things, have greater left frontal brain activity, can recall more positive than negative events from their lives, have lower absenteeism from work, and smile more. Therefore, although self-report measures of subjective well-being are subject to biases, they can be complemented with other nonself-report indicators of well-being. Thus, subjective indicators are perhaps less subjective than they at first appear, and objective indicators contain subjective elements.

A complexity that is often overlooked in the quality of life literature is that there are tradeoffs such that increasing a variable can have both desirable and undesirable consequences. For example, individualistic societies have high reports of mean subjective well-being, presumably because people are free to pursue their own goals, and because they can attribute their successes to their own efforts. At the same time, such societies also have higher rates of suicide (Diener, 1996). How can a nation have both higher reported happiness and a higher suicide rate? This paradox results perhaps from the fact that the freedom in these nations allows people to pursue their own ends. When this goes well, it is very rewarding, but when it goes badly, there is less social support on which to rely. A large number of people find rewarding lives in individualistic societies, but a higher percentage are also likely to feel acutely lonely. Thus, freedom is bought to some extent by the relative lack of support and security. Similarly, individualistic nations have high rates of reported material satisfaction, but also have high rates of divorce. If people are not very satisfied with their marriages, they are more likely to separate in nations where there are high levels of personal freedom. Thus, high levels of personal freedom are seen to have both desirable and undesirable consequences. In an agreeable environment, the individualistic alternative may benefit many people, whereas in harsh conditions the collectivistic alternative will offer greater security and order. Thus, it is impossible to dictate one best way for a society to be.

Eventually, at a more advanced level of understanding, we will be able to measure people's subjective reactions and understand how they are related to external conditions. For example, what are



the objective work conditions that covary with job satisfaction? To gain a full understanding of quality of life, we need to explore not only the external and internal aspects of well being, but also the transactional and reciprocal influences between the two. Ultimately, we can comprehend quality of life fully only if we understand the interplay between social indicators in a society, and the subjective reactions of the citizens of that society.

#### CONCLUSION

Economic, subjective and social indices can all shed light on a society's quality of life, as well as on how specific factors influence well-being. An example of the way researchers analyze how unemployment affects the quality of life should prove instructive in this regard. For a researcher proceeding from a normative ideal, involuntary unemployment is an evil, and social indicators can indicate the extent of this in a society. In addition, the social indicator researcher might analyse what other outcomes covary with unemployment, such as poorer healthcare or the likelihood of committing crimes. In contrast, the subjective well-being researcher wants to know whether unemployment affects people's moods and life satisfaction. The subjective well-being perspective also asks when people will enjoy their work. Finally, the economist will analyze unemployment in terms of its causes. Is there a discrepancy between the education of the available workforce and the jobs available? Do welfare payments induce people to choose unemployment instead of accepting lower paying jobs? Does the minimum wage law prevent some people from being hired? Notice, however, that how much people enjoy work can influence rates of unemployment. Thus, the social indicators perspective, subjective well-being measurement, and the economic approach can each tell us interesting and different things about the causes, consequences, and experience of unemployment.

We have argued that social indicators, subjective well-being measures, and economic indices are needed in unison to understand human quality of life, and to make informed policy decisions. Although the various measures each have a number of strengths and weaknesses, they are methodologically and conceptually comple-

mentary. Quality of life is a complex, multifaceted construct that requires multiple approaches from different theoretical angles. We encourage scientists from the various disciplines of social science to exploit the strengths of other's contributions in a collaborative effort. Instead of turf battles over who has the best indicator, each discipline needs to borrow insights about quality of life from the other fields. A thorough understanding of subjective well-being requires knowledge of how objective conditions influence people's evaluations of their lives. Similarly, a complete understanding of objective indicators and how to select them requires that we understand people's values, and have knowledge about how objective indicators influence people's experience of well-being.

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