



We can't get no (life) satisfaction? Comment on Oswald and Wu (2010)

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ABSTRACT

Oswald and Wu (2010; *Science*) recently reported life satisfaction ranks for residents of the 50 U.S. states. Their rankings were framed as measures of “well-being,” but were derived from responses to only a single survey item (“In general, how satisfied are you with your life?”). Here we contrast Oswald and Wu’s subjective rankings with our (Pesta, McDaniel & Bertsch, 2010) objective measures of state well-being. Strangely, our global index of well-being correlates $-.43$ with Oswald and Wu’s life satisfaction ranks (intelligence, itself, correlates $-.33$ with these ranks). We argue that Oswald and Wu’s rankings are misleading for three reasons. First, their massive sample size created statistically significant effects with little practical value. Second, life satisfaction and well-being are different constructs. Third, Oswald and Wu adjusted their rankings for personal income differences across survey respondents. We see this as analogous to controlling for rainfall when attempting to measure precipitation. Accordingly, after re-adjusting life satisfaction by income, we show that Oswald and Wu’s ranks fail to correlate with any objective sub-domain of well-being.

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The journal, *Science*, recently featured an article by Oswald and Wu (2010) regarding differences in “life satisfaction” for people across the 50 U.S. states. Oswald and Wu reported that responses to a single-item, subjective measure of life satisfaction (i.e., “In general, how satisfied are you with your life?”) varied considerably across the 50 U.S. states. After controlling for miscellaneous demographic variables, Oswald and Wu concluded that Louisiana ranks highest in life satisfaction; whereas, New York ranks lowest. To validate rankings, they next showed that life satisfaction correlates strongly ($r = .60$) with an objective, composite measure of state amenities (e.g., sunshine hours, air quality, etc.). For three reasons, however, Oswald and Wu’s rankings provide an unfortunately misleading picture of U.S. state well-being.

First, Oswald and Wu characterized state differences in life satisfaction as being “not minor” (page 577). One impressive

feature of their study was the sample size—1.3 million respondents. Statistical significance, especially with massive samples, does not always equate to practical significance. The most extreme state difference in the paper (Louisiana versus New York) translates to only 12% of a one-point difference on the life satisfaction scale, where 1 = “very dissatisfied,” and 4 = “very satisfied.” This difference is a standardized mean difference (d) of .19 (Louisiana and New York differ by only .19 of a standard deviation). Their largest effect is therefore small using conventional interpretations of effect size. Objective measures of state well-being, discussed below, show substantially larger differences across states ($d = 4.4$, in the most extreme state comparison—Massachusetts versus Mississippi).

Second, in many places—including the manuscript’s title—Oswald and Wu use the terms “life satisfaction” and “well-being” synonymously. *Well-being*, however, is a multi-faceted construct. Steel, Schmidt, and Shultz (2008) argued that well-being comprises four distinct dimensions (life satisfaction, happiness, affect, and quality of life). Warr (2007) conceptualized well-being by appeal to the broad sub-domains of both physical and psychological health. Likewise, Pesta, McDaniel

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and Bertsch (2010) reported six diverse sub-dimensions of objective U.S. state well-being. Clearly, a single item, subjective measure of just life satisfaction is misleading as a surrogate for the psychological construct of well-being.

Third, Oswald and Wu report state satisfaction ranks after first controlling for household income. Their aim was to test a prediction made from the “compensating differentials” literature in economics. The idea is that nice places to live must offer some negative, like higher home prices, to offset their niceness. By controlling income, however, Oswald and Wu's resulting state ranks no longer represent raw life satisfaction (let alone, well-being). The adjusted ranks factor out the effects of household income on well-being across many sub-domains. Ignored is how one's finances may affect one's relative levels of health, education, exposure to crime, etc. We fear that this important caveat may be lost in the paper, as it is the adjusted ranks (and not what has been controlled to produce them) which will capture the reader's attention.

Bringing data to bear on this point, we (Pesta et al., 2010) derived the following, diverse sub-domains of U.S. state well-being: intelligence (IQ), religiosity, crime, education, health and income. We then factored the sub-domains into a single, global component of well-being for each U.S. State. Our global well-being scores, however, correlate inversely with Oswald and Wu's life satisfaction ranks ($r = -.43$). Oswald and Wu's most satisfied state, Louisiana, ranks second last on our measure of global well-being. New York, their least satisfied state, ranks at 17 (66%) on our list.

Simple correlations between our sub-domains and Oswald and Wu's measure of life satisfaction are equally untenable: IQ ($r = -.33$); Religiosity ($r = .43$); Crime ($r = .23$); Education ($r = -.28$); Health ($r = -.33$) and Income ($r = -.49$). The disparity across data sets stems from Oswald and Wu's practice of controlling for personal income when ranking states on satisfaction. Note that our measure of income correlates inversely with Oswald and Wu's corrected measure of life satisfaction. Consider the partial correlations between life satisfaction and the sub-domains when controlling for our

measure of state income: IQ ($r = -.06$); Religiosity ($r = .13$); Crime ($r = .03$); Education ($r = .06$) and Health ($r = -.03$). When re-adjusting for income, Oswald and Wu's life satisfaction ranks fail to correlate significantly with any objective sub-domain of well-being.

As interest in aggregate-level data (e.g., well-being, IQ, and personality) increases, we think that it is important to reach consensus on how these variables are reported in the literature. Reporting well-being (or IQ) adjusted for variables like income seems arbitrary unless driven by theory. Even when theory-driven, however, reporting only these adjusted results may lead to fundamental changes in how variables are interpreted. We suggest that the consensus should be to report aggregate constructs via the raw data, and use corrections separately (clearly labeled) in techniques like partial regression. Consensus on how the field operationalizes aggregate-level constructs across data sets seems critical to understanding how they affect group behavior.

In sum, we believe that Oswald and Wu's state rankings are misleading. Consider Louisiana as Oswald and Wu's most life-satisfied state. Objectively, Louisiana ranks first in crime and 49th in both health and intelligence. It ranks 48th in income, 43rd in education, and Louisiana is the 5th most (fundamentally) religious state in the country. Given the poor ranking of Louisiana on most social and economic indicators, it is not credible to conclude that Louisiana scores highest in well-being. Likewise, using a subjective, income-adjusted measure of life satisfaction to rank the 50 U.S. states on well-being is not credible.

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