



Happy States of America: A state-level analysis of psychological, economic, and social well-being

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ABSTRACT

Cross-national research indicates that well-being is comparatively high in wealthy nations where importance is placed on freedom, self-expression, and independence. The present research aimed to replicate and extend previous work by examining the geographic distribution and correlates of well-being within the US. Links between the Gallup Organization's Well-being Index and state-level indicators of wealth, class structure, education, social diversity, and personality were examined. Results suggested that residents of states with high levels of well-being were wealthier, better educated, more tolerant, and emotionally stable compared to residents of states with comparatively low levels of well-being. Analyses indicated that connections between well-being and class structure, diversity, and personality remained after controlling income. Causes and consequences of regional differences in well-being are discussed.

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1. Introduction

Recent research on well-being has greatly informed our understanding of the psychological, social, and economic factors that contribute to happiness. For instance, we know that well-being—people's subjective cognitive and affective evaluations of their quality of life—is positively associated with income, work productivity, sociability, creativity, and physical health (Lyubomirsky, King, & Diener, 2005). And we know from research on cultural differences in well-being that people in wealthy and democratic nations are happier than people in poorer and undemocratic nations (Diener, Oishi, & Lucas, 2003; Steel & Ones, 2002; Stevenson & Wolfers, 2008; Veenhoven, 1993).

That research provides useful insights into the psychological, societal, and cultural correlates of well-being at the individual and national levels of analysis. But to develop a complete understanding of this phenomenon, it is necessary to also consider how well-being is distributed within nations. Indeed, investigating the regional distribution and correlates of well-being within nations will yield valuable information for developing and evaluating policy initiatives aimed at fostering psychological health and well-being (Diener, 2000; Diener & Seligman, 2004). The present research is designed to take a first step at achieving that aim by

investigating the geographic distribution and correlates of well-being within the United States. Specifically, the questions this work aims to address are: how is happiness distributed across the US? And, what are the social and economic characteristics of happy regions?

1.1. The geography of well-being

Most of the research on geography and well-being has been done at the national level (e.g., Inglehart & Klingemann 2000; Lynn & Steel, 2006; Steel & Ones, 2002; Veenhoven, 1993). Results from several international studies converge showing consistent mean differences in well-being across nations. For example, Canada, Denmark, Switzerland and the US invariably have the highest well-being scores compared to other nations while many nations in Eastern Europe and Africa score near the bottom (Diener, 2000; Veenhoven, 1993). What accounts for these national differences?

In general, nations with high levels of well-being are those where people are individualistic and value independence and autonomy (Diener et al., 2003; Hofstede, 2001). Explanations for the link suggest that in individualistic societies people have a wide variety of options for how to live their lives, success is usually attributed to personal ability, and people have more freedom to express themselves than do people in more collectivistic societies. Nations that score high on measures of well-being also score highly on indexes of human rights and social equality. In line with explanations for the happiness and individualism link, nations that

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protect the rights of people of a different gender, race, nationality, religion, or sexual orientation afford a greater proportion of its population the freedom to pursue a life that is satisfying and rewarding. A number of studies have also found positive linear relationships between national levels of well-being and income (Diener & Suh, 1997; Diener et al., 2003; Easterlin, 1995; Schyns, 1998).

Research on personality has also shed some light on the nature of national levels of well-being. For example, Steel and Ones (2002) found that national levels of happiness and satisfaction were negatively related to levels of Neuroticism and positively related to Extraversion and Openness. Thus it seems that personality traits that are common to a geographic region contribute to national levels of well-being.

The cross-national research provides considerable evidence that well-being is not uniformly distributed around the globe but that it is geographically clustered. In nations where basic needs are taken care of, where people have the freedom to be themselves, and where differences are tolerated, people appear to be generally happy. So we now have some clues about which aspects of place are related to well-being. But is nationality a sufficient proxy for place? Is it enough for understanding the impact place has on well-being? The nations in which people live obviously have a profound effect on their lives, but so too do the regions within the countries they live. Thus, if we are going to develop an understanding of the interplay between place and well-being, it is necessary to look within nations.

One of the only studies that directly investigated regional differences in well-being was conducted by Plaut, Markus, and Lachman (2002). Using a nationally representative sample of US residents, they compared each of the nine US Census divisions on psychological, social, and physical well-being. Their results revealed high levels of well-being in the New England, Great Plain, Southwest, and Mountain regions, and comparatively lower levels in the Mid-Atlantic, Midwest, West Coast, and especially Southeastern and South Central regions. The results from this work demonstrate that there are intra-national differences in well-being. But because the regional differences in well-being were not compared to any social indicators or outcome variables, it is hard to know how important or meaningful those differences are.

A recent study of personality differences within the US provides reasons to believe that well-being varies across the US and that differences in well-being are related to important state-level variables. Using a sample of over three-quarters of million US residents, Rentfrow, Gosling, and Potter (2008) mapped the distribution of the Big Five personality dimensions and examined their connections with a variety of social indicators. Their results indicated that Neuroticism, for instance, was high from Maine to Louisiana and comparatively lower in the Mountain and West Coast states. Furthermore, statewide differences in Neuroticism were negatively related to community involvement and life expectancy, and positively related to deaths due to cancer and heart disease.

In summary, the research reviewed makes a compelling case that there are national and regional differences in well-being. The so-called “good life” is not available to just anyone, but mainly to those who live in developed countries and in places where people are allowed to be themselves. Moreover, the research indicates that the differences in well-being are associated with cultural and societal processes. In places with strong communities, where people are able to work together and are open and accepting of those from different walks of life, individuals are generally happy and healthy. However, in places that lack such values and ideologies, people are unhappy, tense, and emotionally unstable, and physically unhealthy.

1.2. Overview of the present research

There are good reasons to expect the interplay of place and well-being to go deeper than the national level. Indeed, regions

within nations vary on many of the same indicators that are associated with national levels of well-being. Within the US there are significant differences in income, with median incomes (values from 2006) as high as \$37,043 in the District of Columbia and as low as \$18,165 in Mississippi. Cost of living also varies considerably across the country, with median housing prices as high as \$535,700 in California and as low as \$88,600 in Mississippi. There are also notable differences in the proportion of people with college degrees; 22% of Colorado residents have received some form of higher education, compared to 10% in West Virginia. There are also regional differences in the degree to which people are open and tolerant toward individuals from different cultural backgrounds, racial groups, religious faiths, and sexual orientations. Thus, it seems reasonable to suppose that there are regional differences in well-being across the US.

The aim of this research was to examine the geographic distribution and the state-level correlates of well-being within the US. Specifically, in line with Stevenson and Wolfers' (2008) national level research, we should expect individuals who live in wealthy states to be happier, on average, than those who live in poorer states. Based on previous research indicating that people in democratic and tolerant societies are happier than those in restricted and less open societies (Diener, Diener, & Diener, 1995; Hofstede, 2001), we should expect well-being to be comparatively high in states that are inclusive and where people have the freedom to express themselves. This latter hypothesis is particularly important, as previous work indicates that freedom, equality, and social relationships have more influence on well-being in wealthy, as compared to poor, societies (Diener & Seligman, 2004). Finally, as Steel and Ones (2002) observed at the national level, we should expect state-level Neuroticism to be inversely related to well-being.

2. Methods

We used data from a recent survey of health and well-being administered by the Gallup Organization to examine the regional distribution of happiness in the US. To develop an understanding of the factors related to regional variation in well-being, we examined correlations between state levels of well-being and indicators of economic prosperity, educational and occupational status, inclusiveness, and personality. Descriptive statistics for all measures and variables are provided in Table 1.

2.1. Well-being

State-level well-being was measured using data from The Gallup Organization's Well-Being Index. Beginning in 2008, the Well-Being Index tracked well-being of US residents by interviewing approximately 1000 adults seven days a week, excluding only major holidays. The state-level data are based on responses from 353,039 individuals who were interviewed between January 2 and December 30, 2008. The sample of individuals is weighted to represent the overall American population and is publically available at the state and Congressional District levels. The Well-Being Index was designed to measure psychological, physical, and social well-being and consists of six sub-indices:

2.1.1. Life evaluation

This sub-index was comprised of two items that asked respondents to evaluate their current life situation and their anticipated life situation 5 years later.

2.1.2. Emotional health

This sub-index is a composite measure of respondents' daily experiences and measured the degree of positive and negative af-

Table 1

Descriptive statistics for independent and dependent variables.

	Min	Max	Mean	SD
Well-being	61.20	69.20	65.47	1.69
<i>Economic indicators</i>				
GRP per capita	32892.91	80936.20	48411.61	9105.65
Income	32387.24	61602.66	42360.74	6347.97
Median housing value	88,600	535,700	196,466	103096.94
<i>Educational and occupational indicators</i>				
Human capital	0.10	0.22	0.17	0.03
Creative class	0.22	0.37	0.29	0.03
Super-creatives	0.08	0.15	0.12	0.02
Service class	0.41	0.53	0.45	0.02
Working class	0.18	0.33	0.25	0.04
<i>Inclusiveness indicators</i>				
Bohemians	0.43	1.60	0.88	0.25
Gay index	0.48	1.42	0.92	0.22
Immigrants	0.01	0.27	0.08	0.06
<i>Personality indicators</i>				
Extraversion	3.19	3.34	3.25	0.03
Agreeableness	3.46	3.67	3.62	0.03
Conscientiousness	3.35	3.52	3.45	0.03
Neuroticism	2.88	3.10	3.00	0.05
Openness	3.72	3.95	3.88	0.05

Note: Min = minimum; Max = maximum; SD = standard deviation; GRP = gross regional product; N = 50.

fect respondents experienced the previous day. Sample positive affect items included enjoyment, happiness, and smiling or laughter. Sample negative affect items included worry, sadness, and anger.

2.1.3. Physical health

This sub-index included questions about body-mass, number of absent from work due to illness, self-reports of pain, energy, and daily health experiences.

2.1.4. Healthy behavior

This sub-index measured behavioral habits that are associated with physical health, such as smoking, eating habits, and exercise.

2.1.5. Work environment

This sub-index measured respondents' perceptions and feelings about their work environment. The index included questions about job satisfaction, whether respondents used their strengths at work, and relations with supervisors.

2.1.6. Basic access

This sub-index measured respondents' access to basic needs. The index included items pertaining to community satisfaction, and access to clean water, medicine, affordable fruits and vegetables, and affordable health care.

The Well-Being Index is the weighted composite of these six sub-indices. As can be seen in Table 2, the correlations between the sub-indices and the Well-Being Index are generally high (mean $r = .52$), with the basic access index showing the weakest relationship ($r = .24$) and the life-evaluation index showing the strongest

relationship ($r = .61$). Although some of the sub-indices do not fit neatly with conventional conceptualizations of the well-being construct, there is considerable evidence that the domains measured by the sub-indices are closely related to well-being (Diener et al., 2003; Lyubomirsky et al., 2005).

2.2. Economic indicators

2.2.1. Gross regional product (GRP) per capita

GRP per capita is one of the most commonly used economic measures. GRP per capita is a measure of the value of everything that was produced in a region in a year and reflects the level of productivity as well as the standard of living in a state. It is highly related to indexes of regional productivity and wage levels. The current study used 2005 GRP per capita data from the US Bureau of Economic Analysis (n.d.).

2.2.2. Average income levels

Income is the sum of the amounts reported separately for wage or salary income including net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; social security or railroad retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income. It is measured on a per capita basis and is from the 2005 US Bureau of Economic Analysis (n.d.).

2.2.3. Median housing value

This is the median housing value for "owner-occupied housing units". State-level median housing values are from on the 2005 to 2007 American Community Survey administered by the US Census.

2.3. Educational and occupational indicators

2.3.1. Human capital

Human capital is a measure of educational attainment in a region and is based on the percentage of the regional labor force with a bachelor's degree or above. In the present study we used educational attainment data from the 2005 to 2007 American Community Survey administered by the US Census.

Table 2

Correlations between state-level well-being and six sub-indices.

Sub-indices	Well-Being Index
Life evaluation	.61**
Emotional health	.58**
Physical health	.58**
Healthy behavior	.58**
Work environment	.46**
Basic access	.24

** $p < .01$.

2.3.2. Creative class

The creative class is defined as an occupational sector in which individuals who work in it “engage in complex problem solving that involves a great deal of independent judgment and requires high levels of education or human capital (p. 8).” The major occupational groups comprising the creative class include: computer and math occupations; architecture and engineering; life, physical, and social science; education, training, and library positions; arts and design work; and entertainment, sports, and media occupations – as well as other professional and knowledge work occupations including management occupations, business and financial operations, legal positions, healthcare practitioners, technical occupations, and high-end sales and sales management. The variable is measured as share of the regional labor force. The creative class index used in the present study was based on occupational data from the US Bureau of Labor Statistics for the year 2006. The same index has been used in a number of studies around the world (e.g., Florida, 2002; Marlet & van Woerkens, 2004; Fritsch, 2007; McGranahan & Wojan, 2007).

2.3.3. Super-creative class

The super-creative class consists of a narrower group of creative occupations that Florida (2002) defined as those involving more intense use of creativity on the job. Such occupations include computer and math occupations; architecture and engineering; life, physical, and social science; education, training, and library positions; arts and design work; and selected entertainment, sports, and media occupations. This variable is measured as share of the regional labor force and is based on occupational data from the US Bureau of Labor Statistics for the year 2006.

2.3.4. Service class

The proportion of state residents working in the service class industry was based on occupational data from the US Bureau of Labor Statistics for the year 2006. Service class was measured as share of the regional labor force employed in health care support, food preparation, and food-service-related occupations, building and grounds cleaning and maintenance, personal care and service, low-end sales, office and administrative support, community and social services, and protective services.

2.3.5. Working class

This group consists of occupations related to construction and extraction, installation, maintenance and repair, production, transportation and material moving occupations. The variable is measured as share of the regional labor force. All data is from the US Bureau of Labor Statistics for the year 2006.

2.4. Inclusiveness indicators

2.4.1. Bohemians

This variable is based on a location quotient for individuals employed in the arts, design and related occupations. The data are from the US Bureau of Economic Analysis (n.d.).

2.4.2. Gay index

This variable is based on Florida (2002) and is also based on a location quotient for gay and lesbian households. The data are from the 2005 to 2007 American Community Survey.

2.4.3. Foreign born

The foreign-born variable is based on the share of foreign-born in relation to the total state population. The data are from the 2005 to 2007 American Community Survey administered by the US Census.

2.4.4. Personality indicators

To examine associations between state levels of well-being and personality, we used the personality estimates reported in Table 1 of Rentfrow et al. (2008). That research reported state-level personality estimates for each of the 50 states and Washington DC for each of the Big Five personality dimensions (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness). The personality estimates were based on responses from 619,397 US residents who completed John and Srivastava's (1999) Big Five Inventory.

3. Results

3.1. Geographic distribution of well-being

To develop a sense of how well-being is distributed across the US, we mapped the state well-being scores. As can be seen in Fig. 1, well-being tends to be highest in the mountain and west coast states. Indeed, most of the mountain and west coast states rank in the top half of the Well-Being Index. States along the eastern seaboard tend to be moderate to high in well-being. State-level well-being tends to be lowest in the Midwest and southern states. The map displayed in Fig. 1 clearly shows that well-being is not uniformly distributed across the US but that well-being is clustered. What might account for such clustering?

3.2. Correlates of state-level well-being

One of our aims was to explore the factors related to regional variation in well-being. Are people in wealthy states happier than people living in less wealthy states? To what extent does education and job sector relate to regional differences in well-being? Are people who live in places that are open and accepting of differences more or less happier than people who live in less tolerant environments? To what extent do regional differences in well-being relate to differences in personality? To explore those questions and develop an understanding of the possible causes and consequences underlying regional variation in well-being, we examined the correlations between state levels of well-being and the economic, educational and occupational, inclusiveness, and personality indicators (Table 3, data column 1) we also ran partial correlations to determine whether the correlations were driven by GRP per capita (Table 3, data column, 2) or income (Table 3, data column, 3) we chose not to use regression techniques because doing so would suggest causal relationships, which our restricted data do not allow for testing. Also, since we mainly use scatterplots, we chose not to log our variables, despite the fact that some of the variables are not linear in their relationships (e.g., well-being in relation to GRP per capita, income, housing values or foreign born). This means that the graphs present the real values, which is more informative.

3.2.1. Economic indicators

As can be seen in Table 3, well-being was significantly related to all three of the economic indicators, most strongly with median housing value, followed by median income, and per capita GRP. We created scatterplots to get a better sense of the relationships between well-being and the three economic indicators. Fig. 2 illustrates the relation between well-being and GRP per capita (top left panel) as well as Average Income (top right panel). Both of these measures relate to the Easterlin Paradox as well as the work Stevenson and Wolfers (2008). Based on some states that score low on GRP per capita and income (West Virginia, Kentucky, Mississippi, Arkansas and Indiana) we found a non-linear relationship. A clear outlier is Utah, which is the top-performer in terms of well-being, but which at the same time scores relatively low in

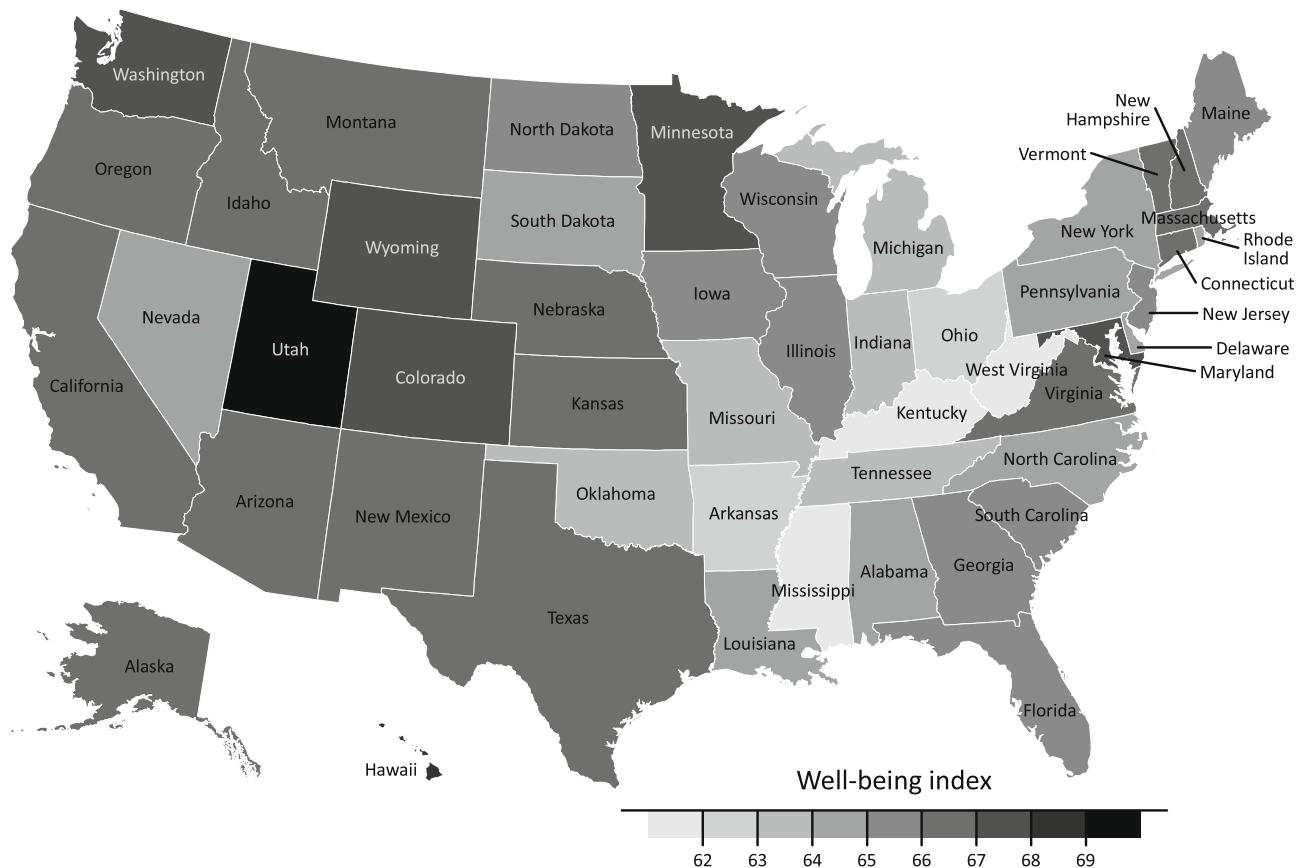


Fig. 1. Map of state-level well-being scores.

Table 3

Correlations between the state-level Well-Being Index and sub-indices and the economic, educational and occupational, inclusiveness, and personality indicators.

State-level indicators	Well-Being Index			Well-Being sub-indices					
	Bivariate	Controlling for GRP per capita	Controlling for income	Life evaluation	Emotional health	Physical health	Healthy behavior	Work environment	Basic access
<i>Economic</i>									
GRP per capita	.39**			.31*	.22	.42**	.29*	.31*	.35*
Income	.45**			.28*	.17	.43**	.45**	-.13	.45**
Median housing value	.56**	.45**	.37**	.40**	.19	.40**	.64**	-.10	.38**
<i>Educational and occupational</i>									
Human capital	.79**	.74**	.72**	.30*	.37**	.46**	.46**	.20	.36**
Creative class	.49**	.38**	.29*	.24	.09	.24	.43**	.16	.23
Super-creatives	.63**	.56**	.50**	.25	.17	.24	.45**	.26	.18
Service class	.17	.09	.17	.15	.24	.33*	.43**	-.22	.19
Working class	-.50**	-.37**	-.28*	-.30*	-.22	-.41**	-.64**	-.04	-.32*
<i>Inclusiveness</i>									
Bohemians	.49**	.42**	.35*	.13	.22	.44**	.35*	.08	.55**
Gay index	.30*	.20	.14	.26	.22	-.02	.38**	-.07	-.12
Immigrants	.48**	.36*	.28*	.45**	.12	.41**	.44**	-.11	.26
<i>Personality</i>									
Extraversion	-.13	-.08	-.01	-.21	.11	.19	-.25	-.09	.23
Agreeableness	-.10	.09	.10	-.17	-.21	-.14	-.34*	.00	.02
Conscientiousness	-.11	-.07	.13	.00	-.17	-.04	-.33*	.05	-.20
Neuroticism	-.61**	-.62**	-.70**	-.41**	-.55**	-.41**	-.16	-.40**	-.08
Openness	.13	.12	-.01	.16	-.30*	-.04	.37**	.06	.01

* $p < .05$.** $p < .01$.

terms of GRP per capita and incomes. The slope of the curve also indicates a positive relation between GRP per capita and average income (Connecticut, Massachusetts, New Jersey, Delaware, Alas-

ka). However, as we reach higher levels of GRP per capita, an additional raise does not seem to add much to the well-being. This indicates that there is a decrease in the marginal well-being effect,

as states grow richer. Also, as the significant correlations in Table 3 indicate, we can detect a relationship between well-being and being financially better off. But still, the variation is enough to conclude that it takes more than incomes or GRP per capita to explain the state happiness levels.

We also examined the relationships between the economic indicators and each of the Well-Being sub-indices. As can be seen in Table 3 (data columns 4–9), GRP per capita was strongly related to physical health ($r = .42, ps < .01$), whereas income was strongly related to healthy behavior, basic access, and physical health ($rs > .43, ps < .01$).

Median housing value and well-being were also strongly related, as can be seen in the scatterplot in the bottom left panel of Fig. 2. That relationship suggests that people are happier in places where housing is comparatively expensive. To determine whether that association reflected the links between well-being, income, and per capita GRP, we ran a partial correlation between housing values and well-being, controlling for GRP per capita and income. The results indicated that the relation between housing values and well-being remained significant ($rs = .45, .37, p < .01$, controlling for GRP per capita and income, respectively). As before, a non-linear relationship emerged, with the same set of states in the bottom, but with Hawaii and California as two extreme outliers in terms of housing values.

The patterns of correlations between median housing value and the well-being sub-indices were similar to the other economic indicators. Specifically, median housing value was most strongly related to health behavior, followed by life evaluation, and physical health ($rs > .40, ps < .01$).

3.2.2. Educational and occupational indicators

As can be seen in Table 3, statewide differences in well-being were significantly related to most of the variables examined. Well-being was most strongly related to human capital ($r = .79$), followed by share of super-creatives ($r = .63$), the occupational group with tasks that involve more intense use of creativity. The correlation between well-being and the creative class was comparatively smaller ($r = .49$), an occupational measure that also includes more creative professionals, such as managers, business and finance, and law occupations. In addition, the correlation between well-being and working class occupations was of the same magnitude as for the creative class but negative ($r = -.50$). The correlation between well-being and the service class occupations was not significant.

Scatterplots for the significant relationships between well-being and the four educational and occupational indicators can be seen in Fig. 3. Overall, the scatterplots suggest that in states where well-being is high, there are more occupations that involve

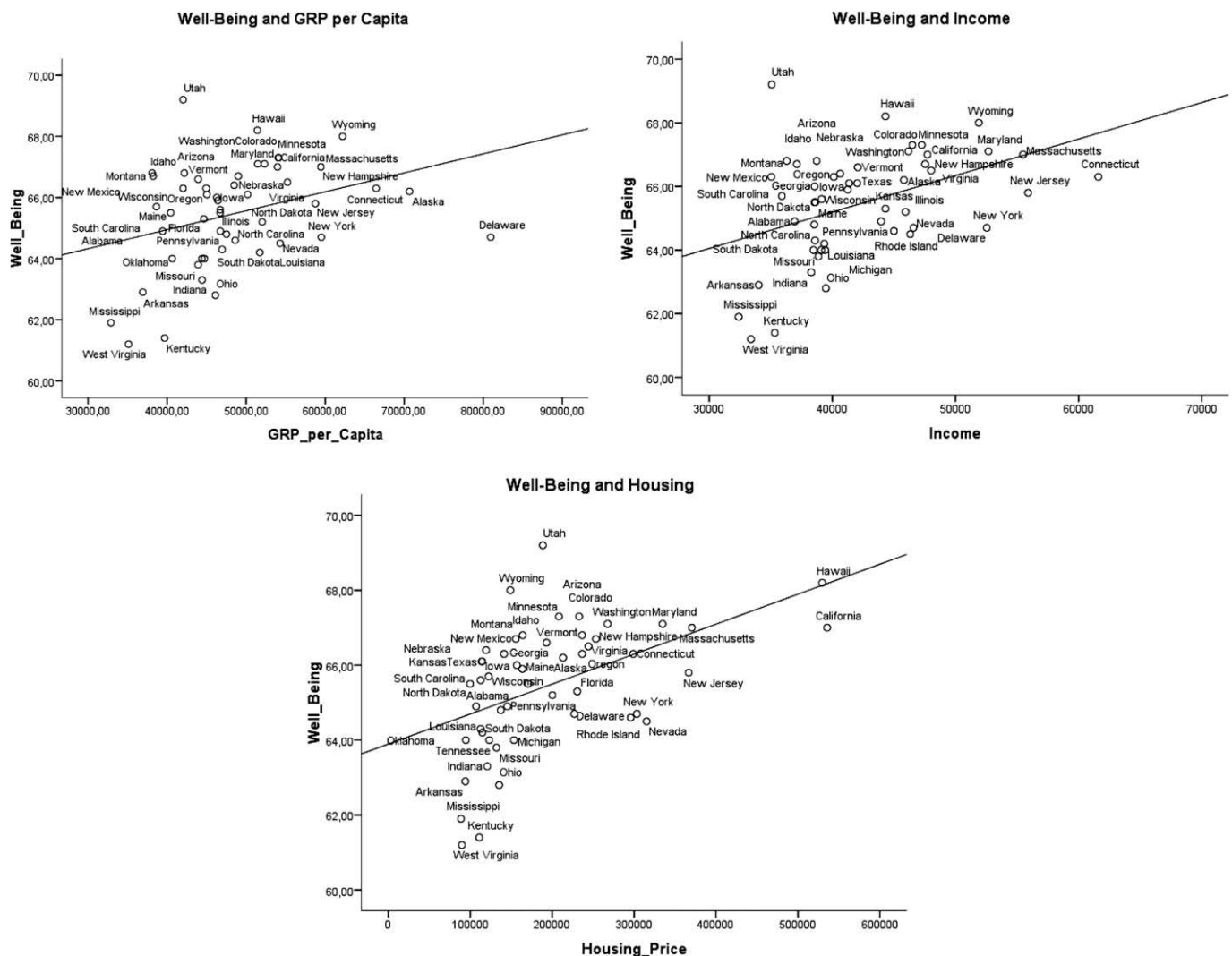


Fig. 2. Scatterplots of well-being and economic indicators.

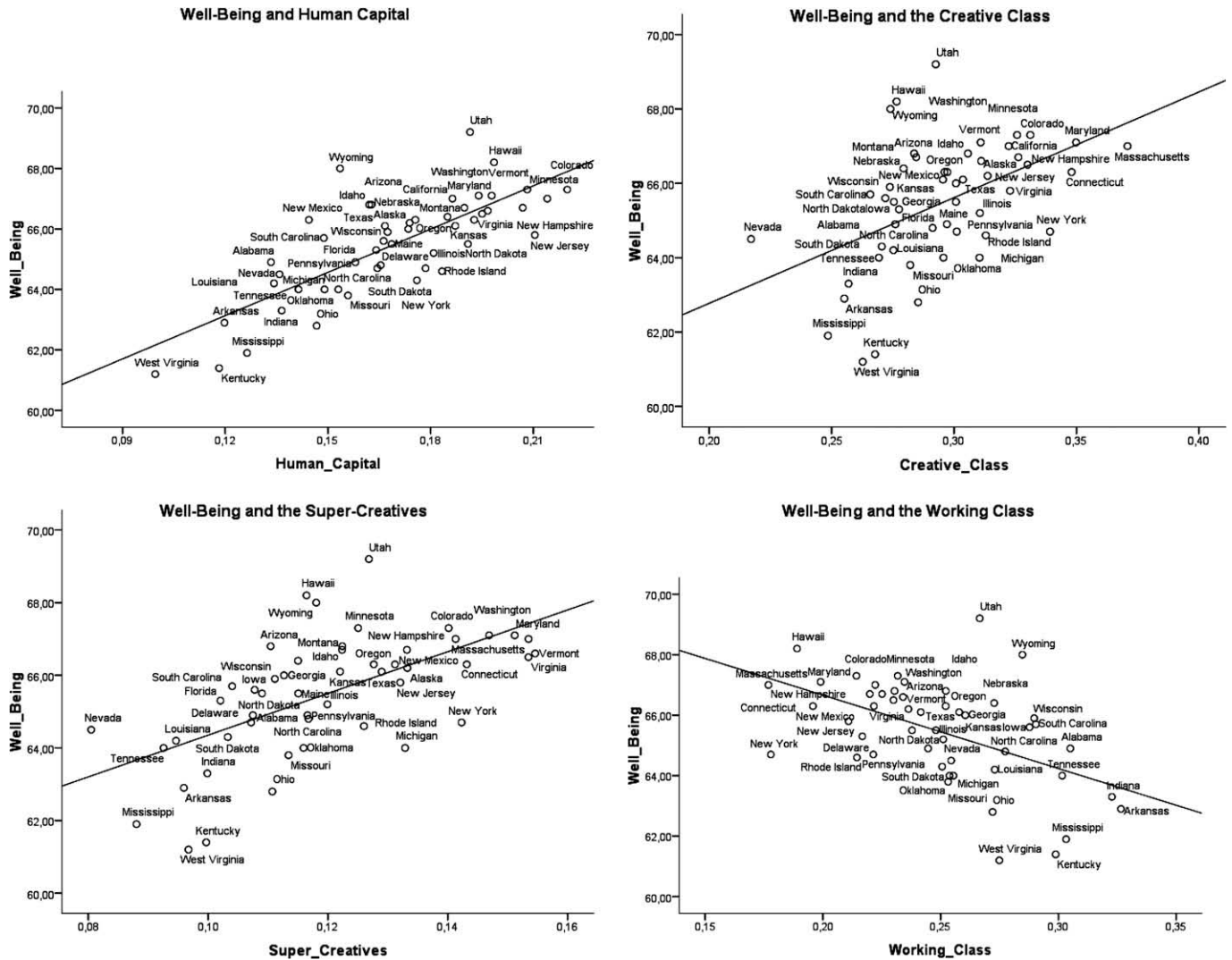


Fig. 3. Scatterplots of well-being and educational and occupational indicators.

creative tasks than in states where well-being is low. As can be seen in the top left panel of Fig. 3, well-being was strongly related to human capital. This suggests that, in general, people are happier in states where a large proportion of the labor force have advanced education. The relationship between super-creatives and well-being is also stronger than for the creative class (see top right and bottom left panels, respectively). In terms of creative and super-creative occupations we find Vermont, Virginia, Maryland, Massachusetts and Washington as top-performers. Among the states with low levels of education, creative occupational tasks as well as low well-being we find West Virginia, Mississippi, Arkansas, Kentucky and West Virginia, in other words approximately the same states that also scored low on average incomes and GRP per capita. Nevada, with its strong service based economy, scores low for creative and super-creative occupations, but is in the mid-range in terms of well-being.

As can be seen in the bottom right panel of Fig. 3, there is a large negative correlation between well-being and working class. Working class in our definition includes; construction and extraction, installation, maintenance and repair, production, transportation and material moving occupations. States with a higher share of such manufacturing occupations also have a lower average well-being level (e.g., Arkansas, Indiana, Mississippi, Kentucky, and West Virginia). Among the top-performers we find Hawaii, Massa-

chusetts, and Maryland. However, it is interesting to note that New York, the state with the lowest share of manufacturing class occupations, actually performs far below its expected value in terms of well-being. To make sure we did not capture an income or GRP per capita effect, we ran a partial correlation between well-being and manufacturing occupations. When GRP per capita and income were controlled (Table 3, columns 2 and 3), the correlations remained statistically significant ($r_s = -.37, -.28$; $p_s < .05$, respectively).

Analyses of the relations between the well-being sub-indices and the educational and occupational indicators revealed strong relations with the healthy behavior sub-index. As can be seen in Table 3, human capital, creative, super-creative, and service class were positively related to healthy behavior ($r_s > .43$, $p_s < .01$) and the proportion of working class residents in a state was negatively related to healthy behavior ($r = -.64$, $p < .01$). The significant positive relationships between the well-being sub-indices and human capital suggest that the level of education in a state contributes substantially to many aspects of psychological and physical well-being.

3.2.3. Inclusiveness indicators

As can be seen in the third section of Table 3, well-being was positively related to the proportion of bohemians, gays, and for-

eign-born residents. These correlations suggest that where there is social and cultural diversity people tend to be happier than in places that are more homogenous.

The scatterplots in Fig. 4 shows similar patterns of relationships between well-being and the three inclusiveness indicators. As can be seen in the top left panel, the top performing states are California, Minnesota and Massachusetts, while New York once more has a lower level of well-being than expected, as does Nevada. In the bottom we find West Virginia, Mississippi, Kentucky, and Arkansas. The scatterplot for well-being and gays is in the top right panel of Fig. 3. The scatter shows that states with large gay populations, such as Vermont, California, Massachusetts, Washington, and New Mexico, tend to have higher levels of well-being than do states with comparatively smaller gay populations, such as West Virginia, Kentucky, Mississippi, Arkansas, and Ohio. States with small gay populations but that still have greater than expected well-being scores include Montana, Nebraska, Iowa, and North Dakota. Finally, as can be seen in the bottom left panel of Fig. 4, the states with small bohemian and gay populations (West Virginia, Kentucky, Mississippi, Arkansas, and Ohio) also had comparatively small percentages of foreign-born residents. California, New York, New Jersey, and Nevada scored high in terms of foreign born, but have well-being scores below what would be expected from their share of foreign born. Wyoming, Utah and Hawaii all have a well-being value above what would be expected given their share of foreign born.

As can be seen in Table 3, we also ran partial correlations between well-being and the inclusiveness indicators, controlling for

GRP per capita and income. The Bohemian and well-being relations remained large ($r_s = .42, .35$; $p < .05$, controlling GRP per capita and income, respectively), but the links were smaller between well-being and the Gay Index ($r_s = .20, .14$; $n.s.$ GRP per capita and income, respectively) and foreign born ($r_s = .36, .28$; $p < .05$, GRP per capita and income, respectively).

As can be seen in Table 3, there were unique patterns of relationships between the inclusiveness indicators and the well-being sub-indices. Specifically, the proportion of bohemians in a state was strongly related to basic access, physical health, and healthy behavior ($r_s > .35$, $p_s < .05$). The gay index was positively linked to healthy behavior ($r = .38$, $p < .01$). And the proportion of immigrants in a state was positively related to physical health and healthy behavior in addition to life evaluation ($r_s > .41$, $p < .01$).

3.2.4. Personality indicators

As can be seen in the bottom section of Table 3, the only personality variable well-being was significantly related to was Neuroticism, such that states high in well-being were low in Neuroticism. The negative relationship between well-being and Neuroticism is consistent with research at both the individual and national levels of analysis (Lyubomirsky et al., 2005; Steel & Ones, 2002). Clearly, as can be seen in Fig. 5, the states that consistently performed badly in terms of well-being, show a higher level of Neuroticism; West Virginia, Mississippi, and Kentucky. The top-performer for well-being, Utah, is also the state with a significantly lower level of Neuroticism.

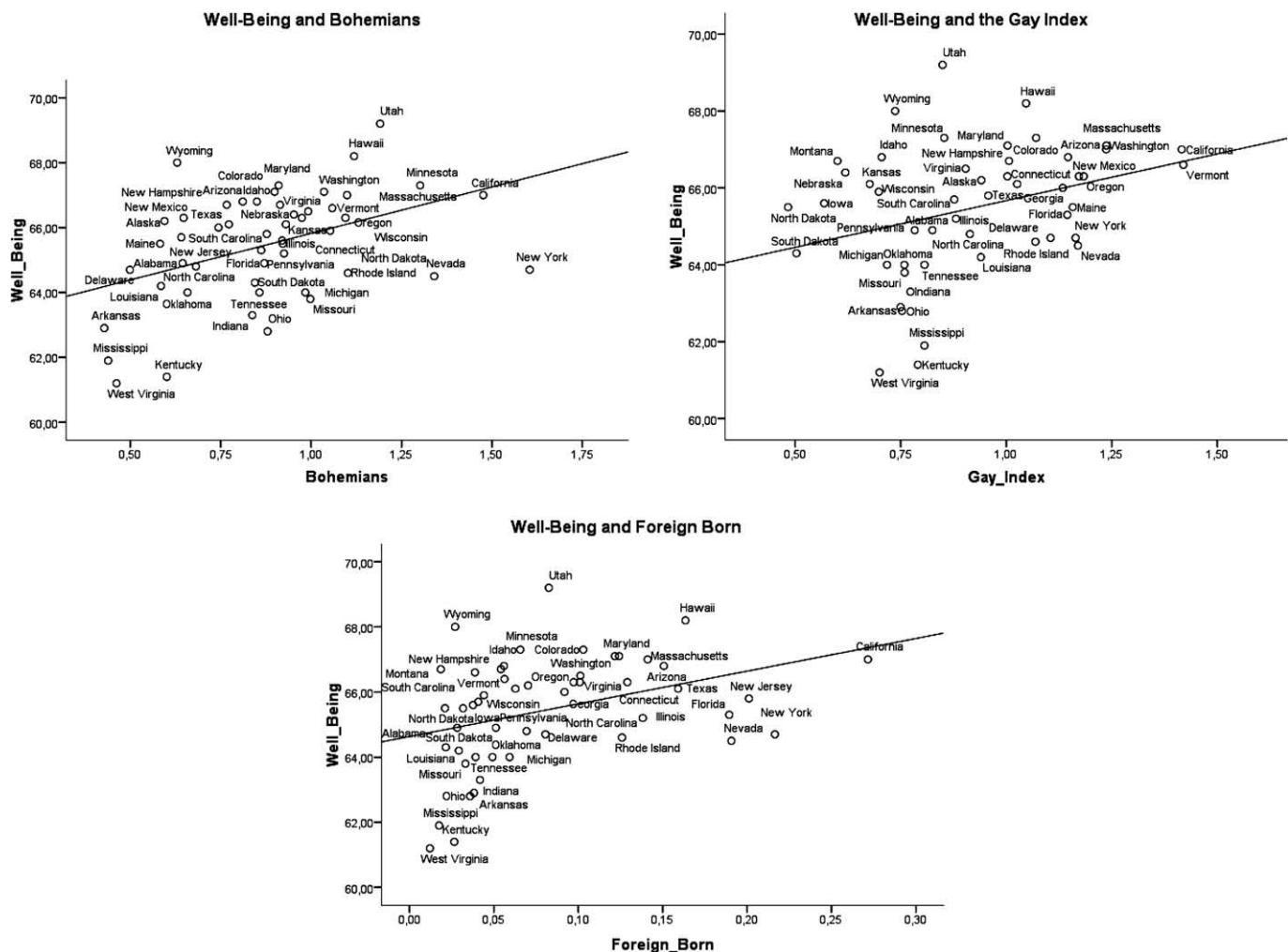


Fig. 4. Scatterplots of well-being and inclusiveness indicators.

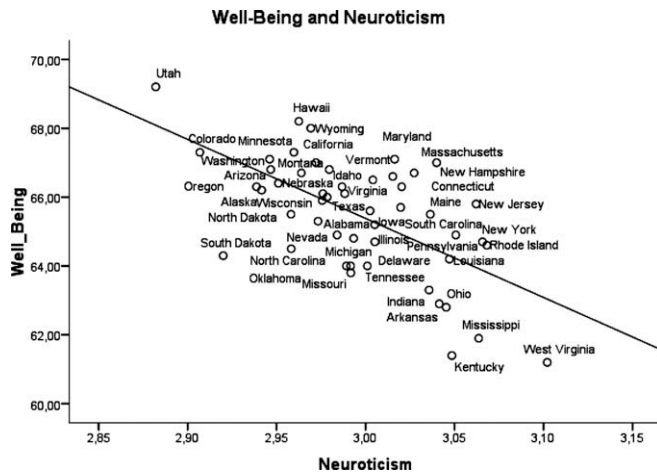


Fig. 5. Scatterplot of well-being and Neuroticism.

As can be seen in Table 3, Neuroticism was strongly related to four of the well-being sub-indices. Specifically, states high in Neuroticism tend to have lower scores on the work environment, physical health, life evaluation, and emotional health sub-indices ($r_s > .40$, $p_s < .01$). Interestingly, the healthy behavior sub-index was negatively related to Agreeableness and Conscientiousness ($r_s = -.34$ and $-.33$, $p_s < .01$, respectively), and positively related to Openness ($r = .37$, $p < .01$).

4. Discussion

The aim of this work was to examine the regional distribution of happiness in the US and the social, economic, and psychological correlates of state-level well-being. Cross-national research suggests that there is a relationship between well-being and income, freedom, equality, and emotional stability (Diener et al., 1995, 2003; Schyns, 1998; Stevenson & Wolfers, 2008). The present research extends our current understanding of well-being by bringing the analysis down to the state level. We used the Gallup Well-Being Index and related it to income, GRP per capita, educational and occupational variables, regional indicators of inclusiveness and social tolerance, and state-level personality indicators.

The results revealed that state-level well-being was positively related to economic output, income, and median housing value. Rates of human capital, creative workers, and white-collar workers were positively related to state-level well-being. States where well-being was high were also more inclusive and tolerant of diversity than were states low in well-being. And state-level well-being was negatively related to Neuroticism, suggesting that people in states where well-being is high are more relaxed, calm, and stable than are people in states where well-being is low. Additionally, the connections between well-being, and the occupational, inclusiveness, and personality indicators remained moderate in size after controlling for GRP per capita and income.

The results also revealed a number of interesting relationships between the Well-Being Index and the social indicators. The healthy behavior and physical health sub-indices were significantly related to most of the economic, educational and occupational, and inclusiveness indicators. The life-evaluation sub-index, which is most similar to conceptualizations of well-being studied in psychology, was positively related to all three of the economic indicators, human capital, and the proportion of immigrants, and negatively related to the proportion of working class and state-level Neuroticism. More broadly, the patterns of correlations among the sub-indices and the social indicators clearly show that different variables contribute to distinct components of well-being.

In general, the results converge nicely with previous research. We found that well-being was positively related to human capital and the creative class, and negatively related to the proportion of working class residents. Considering that the working-class index is comprised of jobs involving manual labor and physical exertion (e.g., construction, truck driving, farming), jobs with physically strenuous working conditions, the results are in line with previous research suggesting that working conditions contribute substantially to well-being (Diener & Seligman, 2004). Furthermore, the positive relationships between well-being and the proportion of bohemians, gays, and immigrants suggest that states high in well-being tend to be tolerant and accepting of people from diverse backgrounds. These findings dovetail nicely with cross-national research indicating that well-being is comparatively high in open and democratic nations where citizens place importance on self-expression, human rights, and equality (Inglehart & Oyserman, 2004; Kuppens, Realo, & Diener, 2008).

4.1. Limitations and future directions

There are a number of issues that limit the generalizability of the current results. The Well-Being Index was comprised of several sub-indices that do not fit neatly with psychological conceptualizations of the well-being construct. For example, the index includes a measure of work environment that assessed, among other things, respondents' perceptions of their supervisors. Although the various sub-indices are interesting in their own right, caution should be used when interpreting results from the composite Well-Being Index and generalizing them to psychological research. The life-evaluation index, which assessed respondents' degree of satisfaction with their lives, is most similar to conventional conceptualizations of well-being.

Another limitation of the present research is that the well-being data were collected during an economic recession. Considering the robust relationships between well-being and income, it is very likely that the state-level well-being scores are affected by the degree to which a state was hit by the economic downturn. Although unemployment and foreclosure has affected the entire country, some states have been more affected than others. A related limitation is that the economic, educational, and occupational indicators were all collected prior to the recession and therefore do not reflect the economic situation at the time in which the well-being data were collected. Nevertheless, as well-being and labor statistics data for the subsequent year are released (the 2009 Well-Being Index is currently underway), we will be able to examine regional variation in the effects of the recession on well-being.

A third limitation of the current research is that it fails to shed light on the causal nature of regional differences in well-being. Why are there regional differences in well-being? How stable are state levels of well-being? Can state and local policies effectively increase residents' levels of life satisfaction? Longitudinal research will greatly inform our understanding of the factors underlying regional variation in well-being and yield valuable information about the impact of place on psychological health. Such research would be invaluable for evaluating social and health policies aimed at promoting psychological health. The factors contributing to (or detracting from) well-being no doubt vary from place to place, so city- and neighborhood level research would also help identify which factors may be absent in a place (e.g., social capital, outdoor recreational space).

5. Conclusion

Drawing from theory and research at the individual and national levels, we examined statewide differences in well-being

and identified a number of characteristics common in happy states. Overall, the results were consistent with findings from previous research and lend further evidence for the close connections between well-being, affluence, freedom, and self-expression. We believe this is an important area that deserves serious attention and that exploring regional variation in happiness will provide valuable information about the connections between place and happiness.

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