

Supplementary Information for

Racial Composition and Population Well-being Across U.S. Counties

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Supplementary Information includes:

Supplementary Text

Supplementary Table S1

Supplementary Figures S1

Supplementary Figures S2

Supplementary Figures S3

References for SI reference citations

Supplementary text

Data Sources

Gallup-Sharecare Well-being Index, Gallup U.S. Daily Poll. The samples were stratified to ensure that the unweighted samples were proportionate by U.S. Census region and time zone within region. The data was weighted daily to compensate for selection biases and nonresponse, and to match targets from the U.S. Census Bureau by age, sex, region, sex, education, ethnicity, race, and population density of self-reported location.

American Community Survey. While the survey is reported annually for areas with populations of 65,000 or more, ACS also collects sample cases to provide 5-year estimates for smaller geographic areas. We chose to utilize the 5-year estimates in this study for more comprehensive geographic coverage.

Respondent Level Covariates. Demographic information was collected from respondents, including age, sex, marital status, education, and annual household income. See the below for the variables pulled from the Gallup U.S. Poll and how they were recoded for this study to remove non-response¹. The following continuous variables were grand mean centered: age, annual household income.

Variable	Question	Response	Recoded Response
Age	Please tell me your age.	Age (numeric) 100 = (refused to answer)	Age (numeric) 100 = N/A
Sex	Are you male or female? (For those who refused to select their response, interviewer coded their sex as male or female.)	1 = Male 2 = Female	0 = Female 1 = Male
Marital Status ^b	What is your current marital status?	1 = Single/Never been married 2 = Married 3 = Separated 4 = Divorced 5 = Widowed 8 = Domestic partnership/Living with partner (not legally married) 6 = (DK) 7 = (Refused)	1 = Single/Never been married 2 = Married 3 = Separated 4 = Divorced 5 = Widowed 8 = Domestic partnership/ Living with partner (not legally married) 6 = N/A 7 = N/A
Education ^b	What is your highest completed level of education?	01 = Less than high school diploma	01 = Less than high school diploma

	[Revised since May 2014] What is the highest level of school you have completed or the highest degree you have received?	02 = High school degree or diploma 03 = Technical/Vocational school 04 = Some college 05 = College graduate 06 = Post graduate work or degree 07 = (DK) 08 = (Refused)	02 = High school degree or diploma 03 = Technical/Vocational school 04 = Some college 05 = College graduate 06 = Post graduate work or degree 07 = N/A 08 = N/A
Annual Household Income ^{a,b}	What is your total annual household income, before taxes? Please include income from wages and salaries, remittances from family members living elsewhere, farming, and all other sources?	01 = Under \$720 02 = \$720 to \$5,999 03 = \$6,000 to \$11,999 04 = \$12,000 to \$23,999 05 = \$24,000 to \$35,999 06 = \$36,000 to \$47,999 07 = \$48,000 to \$59,999 08 = \$60,000 to \$89,999 09 = \$90,000 to \$119,999 10 = \$120,000 to \$179,999 11 = \$180,000 to \$239,999 12 = \$240,000 and over 98 = (DK) 99 = (Refused)	01 = Under \$720 02 = \$720 to \$5,999 03 = \$6,000 to \$11,999 04 = \$12,000 to \$23,999 05 = \$24,000 to \$35,999 06 = \$36,000 to \$47,999 07 = \$48,000 to \$59,999 08 = \$60,000 to \$89,999 09 = \$90,000 to \$119,999 10 = \$120,000 to \$179,999 11 = \$180,000 to \$239,999 12 = \$240,000 and over 98 = N/A 99 = N/A

Note: Participants with missing values were not included in the analyses as planned in the preregistration. ^aA log2 transformation was applied to the variable to reduce the impact of outliers by compressing the data's range and bringing extreme values closer to the mean. ^bbefore categorical variables, the category with the highest frequency was set as the reference level.

Table S1. Average Life Satisfaction by Race in 2008-2012 and 2013-2017

	2008-2012		2013-2017	
	<i>n</i>	Life satisfaction	<i>n</i>	Life satisfaction
White	1,067,310	6.93 (1.90)	547,728	7.12 (1.88)
Black	97,193	6.86 (2.11)	66,341	6.89 (2.08)
Hispanic	88,517	6.86 (2.10)	69,794	7.08 (2.03)
Indigenous	35,303	6.65 (2.17)	11,035	6.76 (2.24)
Asian	23,300	6.98 (1.76)	16,696	7.15 (1.63)

Note. Data are reported as means (*SD*). Life satisfaction was assessed on a scale ranging from 0 ("Worst Possible") to 10 ("Best Possible").

County Level Covariates. All county level covariates were grand mean centered.

Median household income. Median household income (variable code S1903) was obtained from the ACS 5-year estimates at the county level for 2012 and 2017.

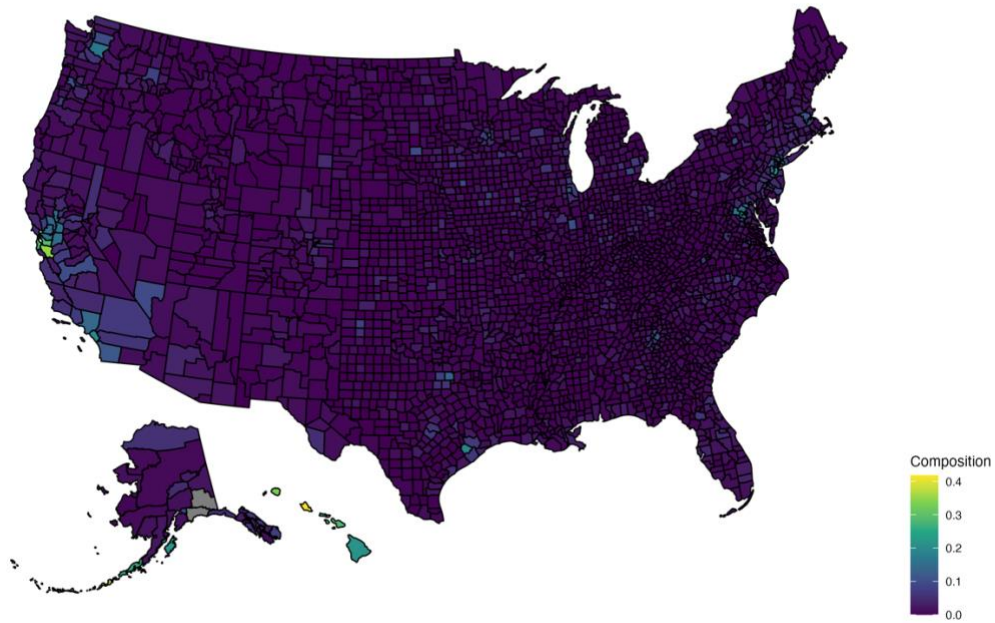
Crime rate. Data was obtained from the Uniform Crime Reporting Program database managed by the United States Department of Justice, Federal Bureau of Investigation, and archived by the Inter-University Consortium for Political and Social Research United States Department of Justice (2008 - 2014, 2016)². County-Level Detailed Arrest and Offense Data for the years 2008, 2009, 2010, 2011, 2012, 2013, 2014, and 2016 were obtained. Tables for County-Level Detailed Arrest and Offense Data for 2015 and 2017 were unavailable. Total crime was computed as the total number of crimes (arrests per 100,000 people) classified in the Uniform Crime Reporting System (UCR) Index: murder, rape, robbery, aggravated assault, burglary, larceny, motor vehicle theft, arson. 5-year estimates of crime rate were computed for each county, with data from 2008-2012 included in the 2012 estimates, and data from 2013, 2014, and 2016 included in the 2017 estimates.

Unemployment rate. Unemployment rate was obtained from the U.S. Bureau of Labor Statistics Local Area Unemployment Statistics (LAUS) program³. Annual unemployment rate by county and year for 2008-2017 was used to compute 5-year estimates of unemployment rate for each county, with data from 2008-2012 included in the 2012 estimates, and data from 2013-2017 included in the 2017 estimates.

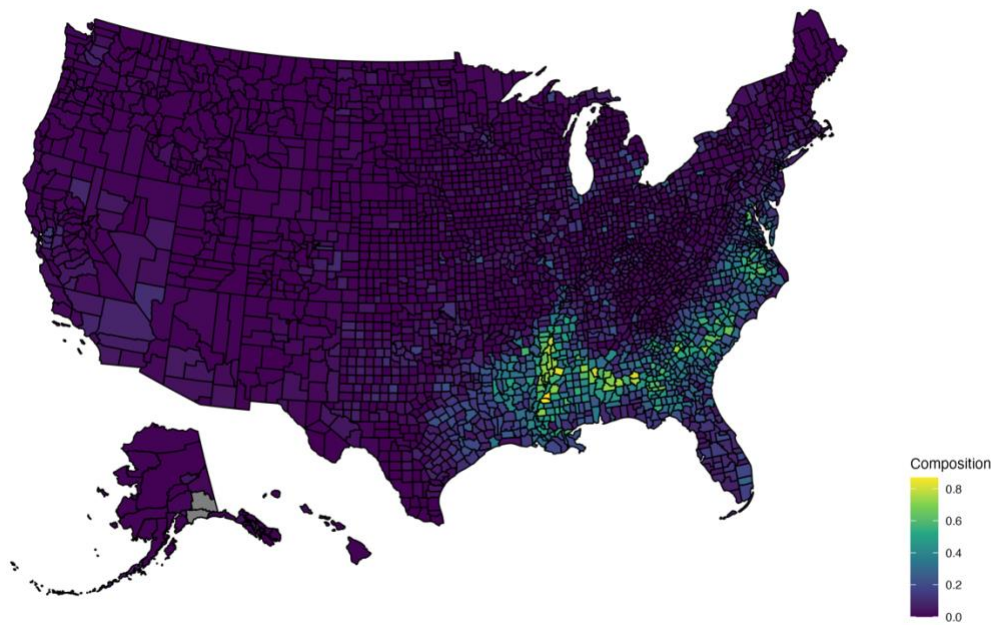
Population density. Population density for each county was computed using the population total (obtained from ACS 5-year estimates) divided by the land area by square mile (people per square mile) (obtained from the Census). County land area in square miles was obtained from the Census Bureau 2010 National Counties Gazetteer Files (variable ALAND_SQMI)⁴. The 2010 file was used as it was the only decennial census available within the time range of this study (2008-2017). Missing county data were imputed from the state specific 2010 State-Based County Subdivisions Gazetteer Files.

Supplementary Figure S1. County Composition by Racial Group (2017)

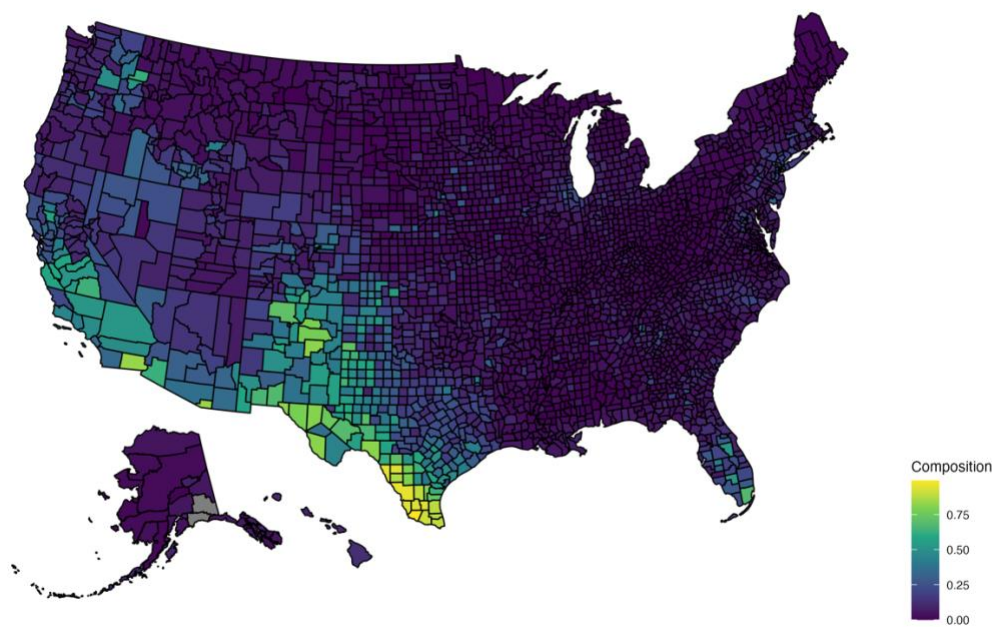
Asian Composition by County (2017)



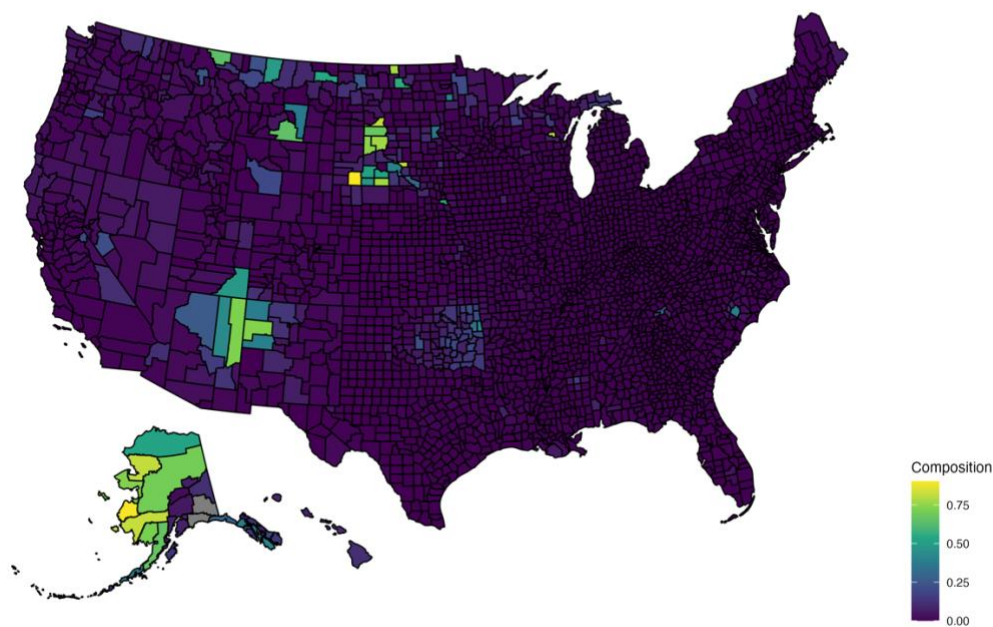
Black Composition by County (2017)



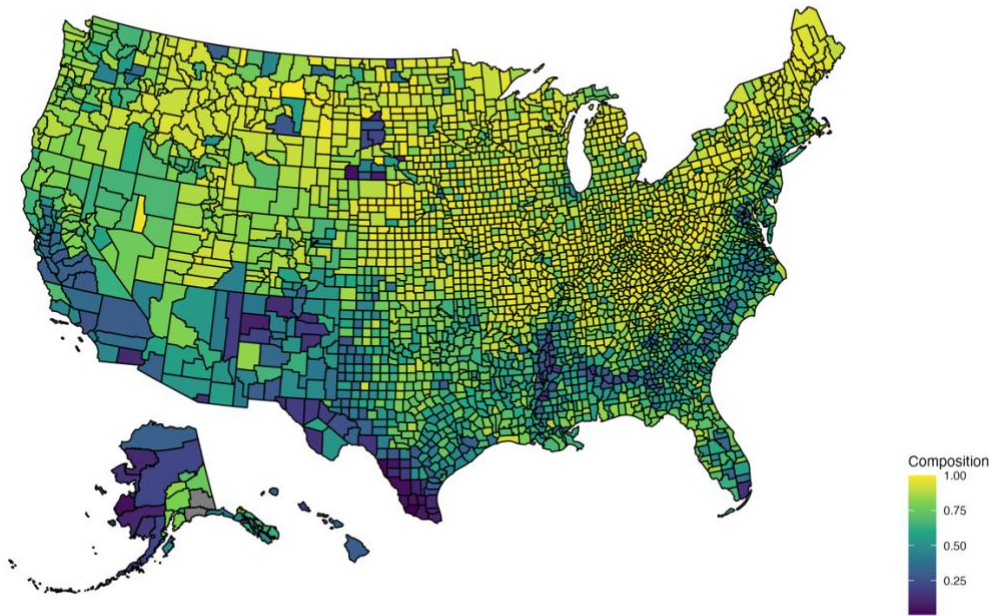
Hispanic Composition by County (2017)



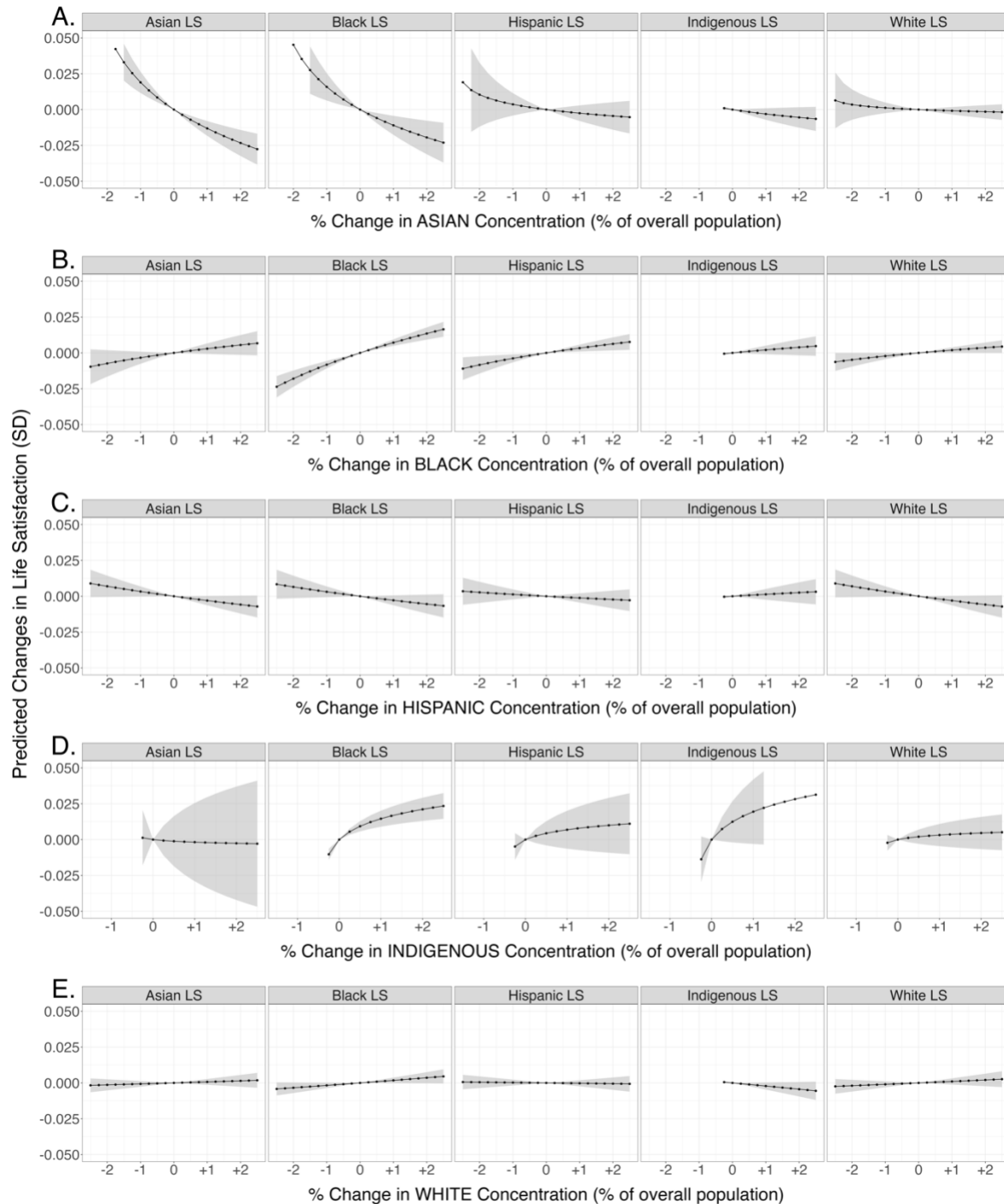
Indigenous Composition by County (2017)



White Composition by County (2017)



Supplementary Figure S2. One-to-Many Comparisons

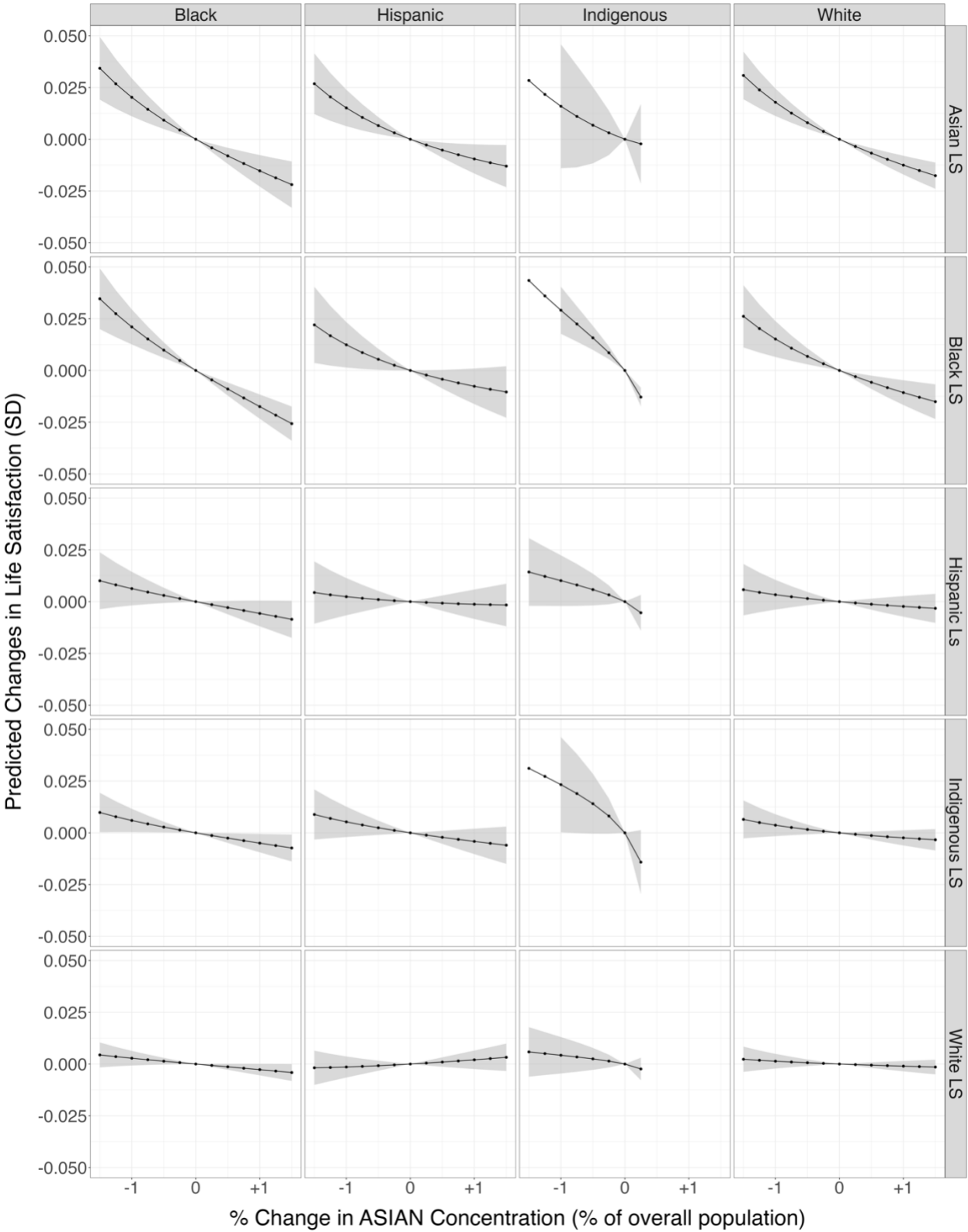


Note. Predicted changes in life satisfaction for each racial group corresponding to a +/-1.5% shift in the population concentration of one racial group relative to all other racial groups. Statistical significance can be determined by the 95% confidence bands, with bands not overlapping with zero considered statistically significant. For the Indigenous group, with a geometric mean of

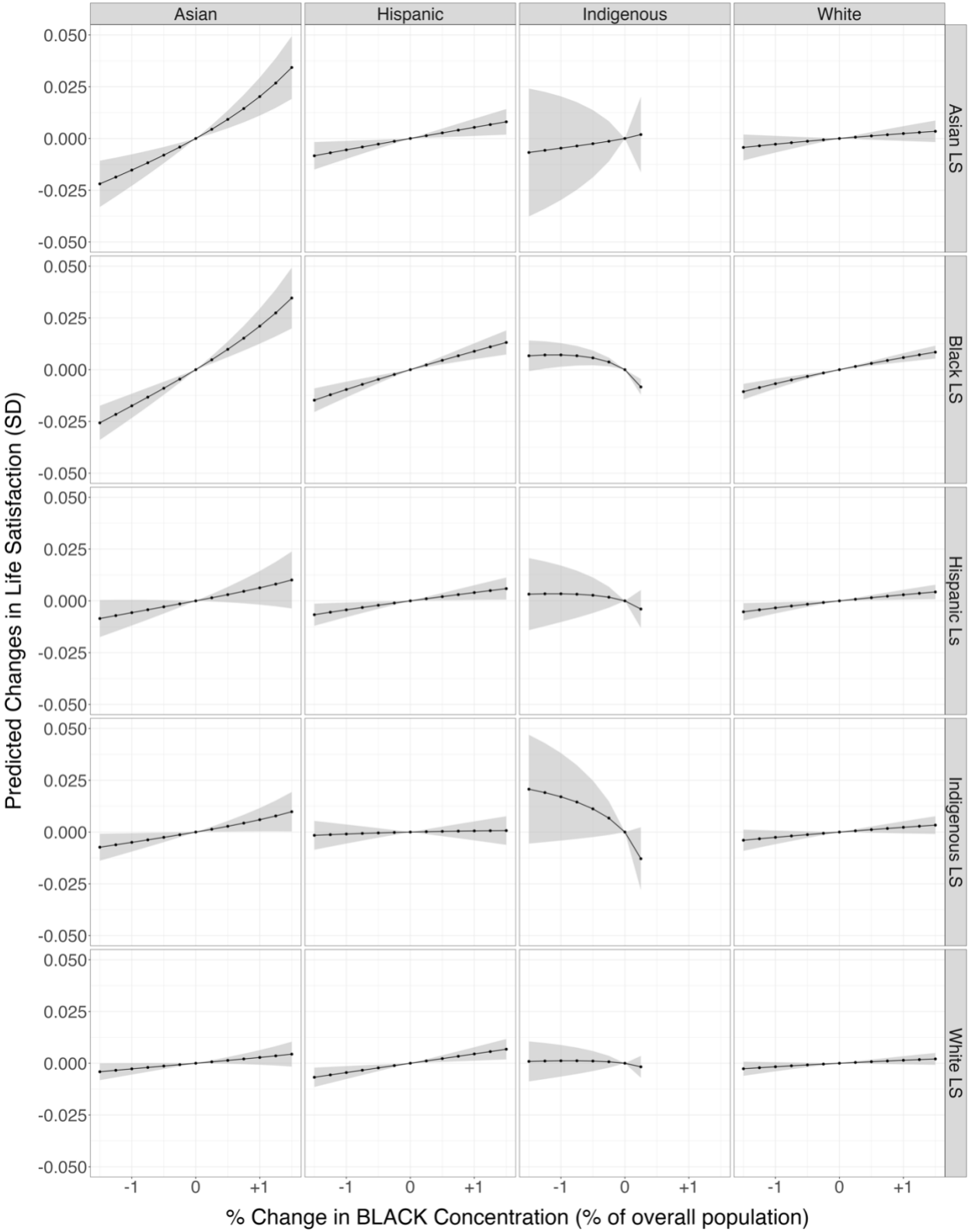
0.4% in our sample, we do not estimate predicted changes for population decreases beyond this geometric mean (-0.4%).

Supplementary Figure S3. Full One-to-One Comparisons

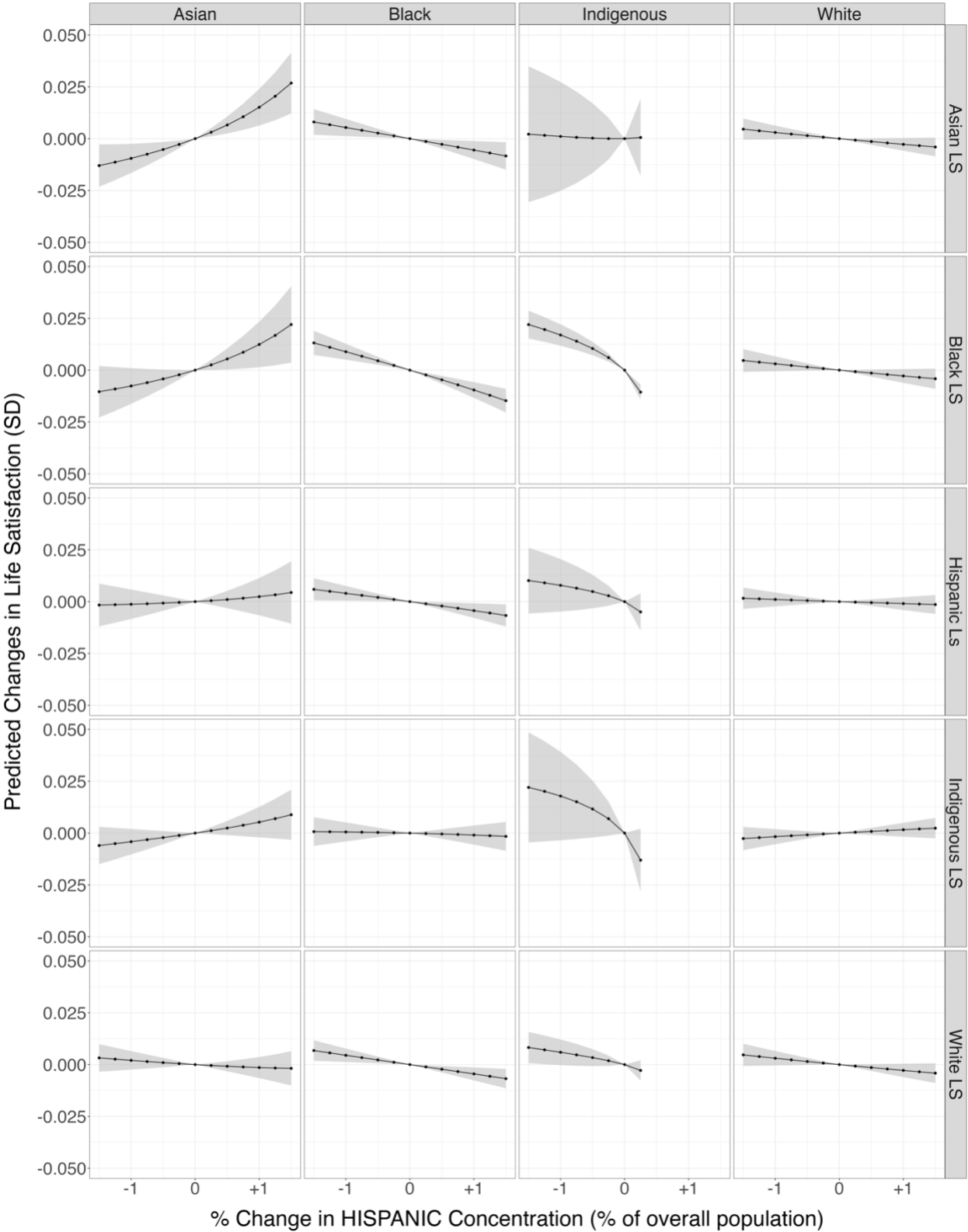
A. Change in Asian concentration relative to each of the other racial groups



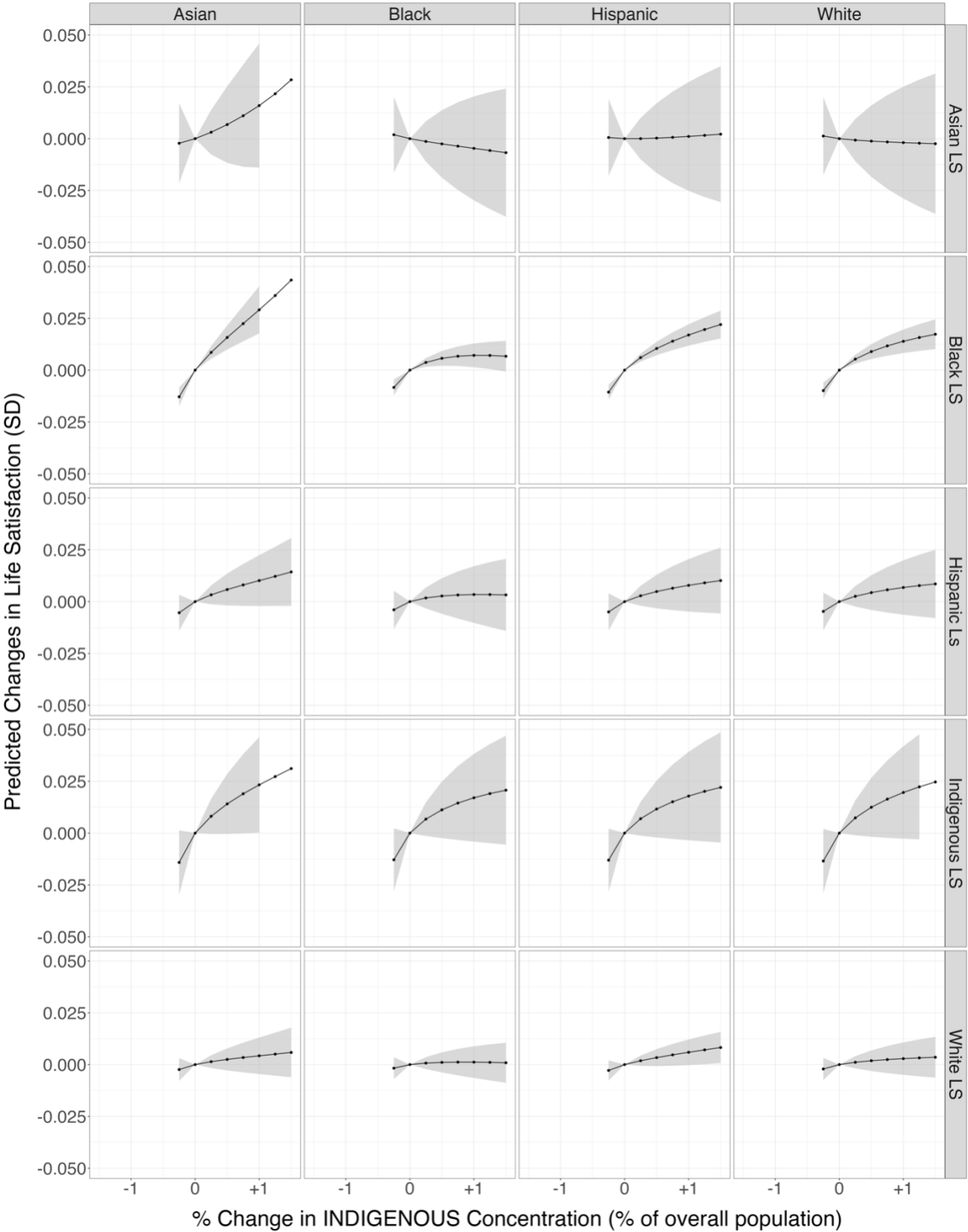
B. Change in Black concentration relative to each of the other racial groups



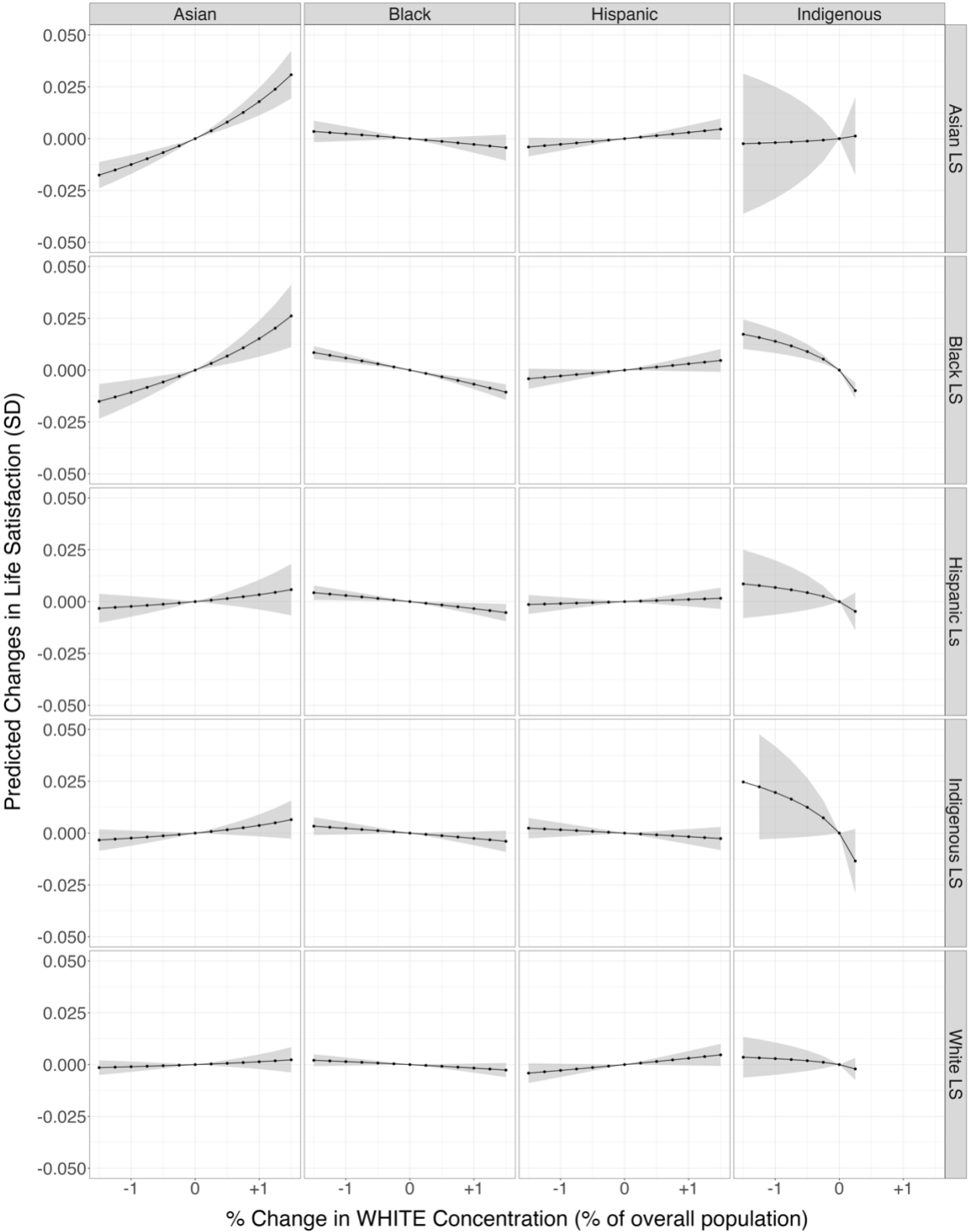
C. Change in Hispanic concentration relative to each of the other racial groups



D. Change in Indigenous concentration relative to each of the other racial groups



E. Change in White concentration relative to each of the other racial groups



Note. Predicted changes in life satisfaction for each racial group corresponding to a $\pm 1.5\%$ shift in the population concentration of one racial group (A: Asians, B: Blacks, C: Hispanics, D: Indigenous, E: Whites) relative to each of the other racial groups. Statistical significance can be determined by the 95% confidence bands, with bands not overlapping with zero considered statistically significant. For the Indigenous group, with a geometric mean of 0.4% in our sample, we do not estimate predicted changes for population decreases beyond this geometric mean (-0.4%).

References

1. Gallup Inc. Gallup Daily Methodology. (2017).
2. United States Department of Justice. Federal Bureau of Investigation. Uniform Crime Reporting Program Data: County-Level Detailed Arrest and Offense Data, United States. <https://doi.org/10.3886/ICPSR37059.v3> (2016).
3. Bureau of Labor Statistics. Local Area Unemployment Statistics (LAUS). (2018).
4. U.S. Census Bureau. 2010 Census Gazetteer Files. (2010).