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EMPIRICAL ARTICLE

Racial differences in the income–well-being gradient

Bouke Klein Teeselink[1], Jin Kim[2], and Gal Zauberman[3]

[1]Department of Political Economy, King's College London, London, UK; [2]D'Amore-McKim School of Business, Northeastern University, Boston, MA, USA and [3]Yale School of Management, New Haven, CT, USA

Corresponding author: Bouke Klein Teeselink; Email: bouke.klein_teeselink@kcl.ac.uk

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Abstract

Existing research documents a log-linear relationship between income and subjective well-being, known as the income–well-being gradient. Using data from millions of Americans, mainly from the Gallup Daily Poll, we find significant racial differences in this gradient. Whites exhibit a steeper income–well-being gradient than Blacks, Hispanics, and Asians. These gradient differences remain after accounting for demographic, socioeconomic, neighborhood, and relative income factors. Additional analyses reveal similar racial heterogeneity in (i) other well-being measures, (ii) expected future well-being, and (iii) the age–well-being relationship. These findings underscore the important role of race in the well-being relationships and the need to better understand the dimensions of heterogeneity in the income–well-being gradient.

1. Introduction

A large body of research has studied the relationship between income and subjective well-being, showing that the well-being enhancing effect of income diminishes as income increases (Diener and Biswas-Diener, 2002; Dwyer and Dunn, 2022; Kahneman and Deaton, 2010; Killingsworth, 2021; Killingsworth et al., 2023; Klein Teeselink and Zauberman, 2023; Layard et al., 2008; Lindqvist et al., 2020). However, there has been relatively little research investigating the heterogeneity of this income–well-being gradient across different subgroups of the population.

One group characteristic that has received particular attention in both the well-being and the income inequality literature is race (Akee et al., 2019; Cummings, 2020; Iceland and Ludwig-Dehm, 2019; Stevenson and Wolfers, 2008, 2013). Prior research documents large differences between racial groups in terms of both average income and well-being levels separately, but to the best of our knowledge, no research has investigated whether and how the well-documented association between income and well-being systematically differs between racial groups. This gap in research deserves attention, because racial differences in subjective well-being—a socially important outcome—may stem from (1) racial differences in income, (2) baseline differences in well-being between racial groups, or (3) racial differences in the income–well-being gradient. Understanding these different patterns of association could provide valuable insights into the drivers underlying the relationship between income and well-being, while acknowledging the limitations of inferring causal relationships from observed correlational patterns.

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This article examines differences in the income–well-being relationship across racial groups using data on millions of Americans from the Gallup Daily Poll (GP). The data contain responses to a large set of questions asking respondents to rate their subjective well-being across various evaluative and experiential dimensions. Compared to other surveys, the GP surveys a much larger number of individuals from minority groups, which makes the survey a particularly useful source to examine the relationship between income and well-being across racial groups. We supplement the GP data ($N = 2,252,805$) with a data set from the Panel Study of Income Dynamics (PSID; Institute for Social Research (2024)), which contains a smaller number of observations ($N = 217,656$) but has the advantage of tracking the same individuals over time.

Our results demonstrate that the relationship between income and well-being differs markedly between racial groups. For a large range of observed income levels, the income–well-being gradient is considerably steeper for Whites than for Blacks, Hispanics, and Asians, suggesting that higher income levels correlate with greater increases in reported subjective well-being among Whites compared to other racial groups. The between-race differences in the gradient are sizable: Whites are the least happy of all racial groups at low income levels, and the happiest at high income levels, whereas the opposite holds true for Asians.

Our findings on racial differences in the income–well-being gradient led us to explore whether similar patterns of heterogeneity exist in other well-being relationships. First, we examine whether racial differences in the income–well-being gradient are consistent across alternative measures of subjective well-being, including positive life evaluations and the absence of negative affect. Second, we investigate the relationship between income and expected future well-being across racial groups, which might help explain observed differences in the income–well-being gradient. Third, we explore whether racial heterogeneity extends to another well-documented pattern in well-being research—the U-shaped relationship between age and subjective well-being. Collectively, these analyses help determine whether our observed heterogeneity is limited to the income–well-being gradient or reflects broader differences in how fundamental life factors translate into subjective experiences across racial groups.

Although these patterns are inherently correlational, understanding racial heterogeneity in well-being relationships offers valuable insights beyond simple documentation of differences. The observed systematic differences call into question the applicability of one-size-fits-all policies aimed at enhancing societal well-being. For example, income support for the poor might affect different demographic groups differently. From both theoretical and practical perspectives, the heterogeneity we document opens new avenues for research into why the same observed objective circumstances—whether income level or age—translate into such different subjective experiences across racial groups, potentially reflecting differences in cultural values, norms, goals, or discrimination.

Our findings on racial differences in the income–well-being gradient conceptually align with the propositions of the Minorities' Diminished Returns (MDR) theory, which posits minorities derive smaller benefits from socioeconomic resources than Whites (Assari, 2017, 2018b). While the MDR literature has examined how race moderates relationships between income and *other outcomes*, such as risk of depression (Assari, 2018c), chronic medical conditions (Assari, 2018a), and self-reported mental health (Assari et al., 2018), as well as how race moderates relationships between well-being and *its other predictors*, such as health (Cobb et al., 2020) and education (Assari, 2019), our research investigates racial heterogeneity in a relationship that has not been directly examined within the MDR literature, namely, how race moderates the *relationship between income and well-being*.

Our research further extends the MDR framework methodologically through several advances. First, we use larger and richer data from the Gallup Poll, which contains a wealth of different well-being measures rather than a single dichotomized well-being measure (e.g., the General Social Survey in Assari, 2019 and Cobb et al., 2020). This allows us to synthesize findings across different dimensions of well-being. Moreover, the size of the data (millions vs. thousands) allows us to obtain much more precise estimates than previous research. We also broaden the scope of MDR theory by moving beyond its traditional focus on Black–White differences and (primarily) health outcomes.[1]

[1] Although see Assari (2024) and Nicholson Jr et al. (2022) for examples of non-health related contributions.

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2. Methods

Consistent with much prior work on well-being, we use responses to the Cantril Ladder scale as our main outcome variable. This ladder scale asks respondents to rate the quality of their lives on a scale from 0, representing the worst possible life, to 10, representing the best possible life. To measure income, we use respondents' annual pre-tax household income (self-reported, chosen from 10 categories). Respondents report race as one of five categories: White, Black, Asian, Hispanic, and Other.[2] After excluding observations with missing or incomplete data, the Gallup Poll sample consists of 2,252,805 respondents between 2008 and 2019.

In our main analysis, we estimate the relationship between income and well-being for different racial groups. Income is measured in 10 income categories. To impose minimal restrictions on the functional form of the relationship between income and well-being, we include each income category as a separate dummy variable. Specifically, we estimate the following regression model for each racial group $g \in \{\text{Asian, Black, Hispanic, White}\}$:

$$Y_{it}^{g} = \sum_{k=1}^{10} \beta_k^g \mathbb{1}_{\text{Income in } k} + \delta_t + \delta X_{it}^{g} + \varepsilon_{it}. \tag{1}$$

Y_{it}^{g} denotes the subjective well-being of individual i in racial group g in year t, which ranges from 0 to 10 on the Cantril ladder scale. $\mathbb{1}_{\text{Income in group}k}$ is an indicator variable that takes the value of 1 if individual i belongs to income group $k \in \{1, \ldots, 10\}$. δ_t are year fixed effects. X_{it}^{g} is a vector of control variables, including gender, age, educational attainment, religion, and year of interview.[3] We include all these variables as fixed effects to impose minimal functional form restrictions. Our main coefficients of interest are β_k^g, which are our estimates for the marginal effect of income on well-being, using the lowest income category as a reference group. By separately estimating Equation (1) for each racial group, we allow for differences in the relationship between income and well-being, as well as covariates and well-being across racial groups.[4]

We adapt Equation (1) in several ways to conduct our additional analyses. To test alternative explanations for our observed patterns, we examine two factors. First, we assess the role of unobserved neighborhood characteristics by including zip code fixed effects in our models. Second, we investigate relative income considerations by interacting the income group indicators with zip code-level average income and adding zip code-level average income as a control variable. We also explore broader patterns of heterogeneity across racial groups. To do so, we (i) analyze alternative well-being measures as outcome variables, (ii) examine racial differences in the association between income and expected future well-being, and (iii) investigate differences in age–well-being patterns across racial groups.

Throughout our analyses, we interpret respondents' answers to the Cantril ladder question as cardinal representations of their underlying subjective well-being. We acknowledge recent critiques by Bond and Lang (2019), who demonstrated that certain findings in well-being research can be reversed through monotonic transformations of the latent well-being variable. However, as Kaiser and Vendrik (2020) counter, many such reversals would require respondents to use response scales in highly implausible,

[2] In this article, we use the term 'race' to denote survey respondents' self-identification as one of the limited racial or ethnic groups presented to them. We acknowledge that this term may inadequately capture the complexity of ethnic and cultural identities, but this is the data available, and is a common approach in the literature.

[3] We exclude confounders that may be affected by income, such as health and marital status, as these may introduce post-treatment bias.

[4] We acknowledge that using income brackets rather than continuous income measures introduces a potential source of measurement error if within-bracket income distributions systematically differ across racial groups; however, the substantial crossover patterns observed in our unconditional analyses in Figure 1, where, e.g., Asians in low-income brackets report higher well-being than Whites in several higher brackets, while Whites in high-income brackets report higher well-being than Asians in even higher brackets—suggest that such measurement issues cannot fully account for the consistent racial differences we observe in income–well-being gradients.

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non-linear ways. Empirical evidence suggests that individuals treat 10-point well-being scales in an approximately linear fashion (Kaiser and Oswald, 2022; Studer, 2012), providing justification for our approach.

3. Results

Table 1 provides the summary statistics on measures of well-being, as well as demographic and socioeconomic characteristics. Across income levels, Asians report the highest level of well-being (7.07), whereas Blacks report the lowest level (6.92). However, Blacks seem most optimistic about the future, on average expecting on average their well-being to reach 8.27 five years from now, as compared to 7.97 for Asians, 7.95 for Hispanics, and 7.44 for Whites.

Figure 1A shows the unconditional relationship between income and well-being across racial groups. Consistent with prior work, higher levels of income are associated with higher levels of well-being. This positive association exhibits an approximately log-linear shape, with no evidence of saturation at high-income levels for any racial group.

Despite this similarity, however, we find marked differences in the income–well-being relationship across racial groups. Well-being increases more rapidly with income for Whites than for Blacks, Hispanics, and, especially, Asians. Whites report the lowest level of well-being among those with incomes below $24,000 (6.10, as compared to 6.46 for Asians, 6.46 for Blacks, and 6.57 for Hispanics) and the highest level of well-being among those with incomes above $120,000 (7.69, as compared to 7.49 for Asians, 7.49 for Blacks, and 7.63 for Hispanics). The opposite is true for Asians.

Table 1. *Summary statistics by racial group.*

	Asian	Black	Hispanic	White
Observations	52,665	204,112	192,173	2,079,822
Well-being	7.07	6.92	6.98	7.06
Expected well-being (5 years)	7.97	8.27	7.95	7.44
Physical health	76.30	70.01	71.22	72.08
Female	0.42	0.56	0.50	0.51
Age	42.30	49.15	43.54	56.92
Income	$82,726	$52,058	$50,417	$68,890
Married	0.55	0.35	0.47	0.58
No diploma	0.02	0.08	0.19	0.04
High/voc. school	0.12	0.29	0.32	0.26
College	0.86	0.63	0.49	0.70
Children below 18	0.91	0.87	1.31	0.56
Religious	0.73	0.89	0.85	0.85
Employed	0.70	0.58	0.64	0.56
Unemployed	0.05	0.07	0.07	0.03

Note: The table shows summary statistics (mean values) for each racial group. *White*, *Black*, *Asian*, and *Hispanic* refer to respondents' self-reported race. *Observations* is the number of respondents of a particular race. *Well-being* is the rating on the Cantril ladder question. *Expected Well-being (5 years)* is the rating for expected well-being 5 years into the future. *Physical health* is a composite index of 26 health-related factors, and takes a value between 0 (worst health) and 100 (best health). *Female* is a dummy variable that takes the value of 1 if the respondent reports to be female. *Age* is respondents' age in years. *Income* is respondents' annual household income before taxes, reported in one of ten categories (e.g., 'under $720', . . .'$24,000–$35,999',. . .'$120,000 and over'). *Married* is a dummy variable that takes the value of 1 if an individual is currently married. *No diploma* is a dummy variable that takes the value of 1 if a respondent did not finish high school. *High/voc. school* takes the value of 1 if the respondent either only finished high school, or obtained a vocational degree after high school. *College* takes the value of 1 if the respondent has at least some college education. *Children below 18* are the respondent's number of children below 18. *Religious* is a dummy variable that takes the value of 1 if the respondent reported being religious. *Employed* is a dummy variable that takes the value of 1 if the respondent is employed. *Unemployed* is a dummy variable that takes the value of 1 if the respondent is looking for a job but does not currently have one. See Section A of the Supplementary Material for more details on the variables.

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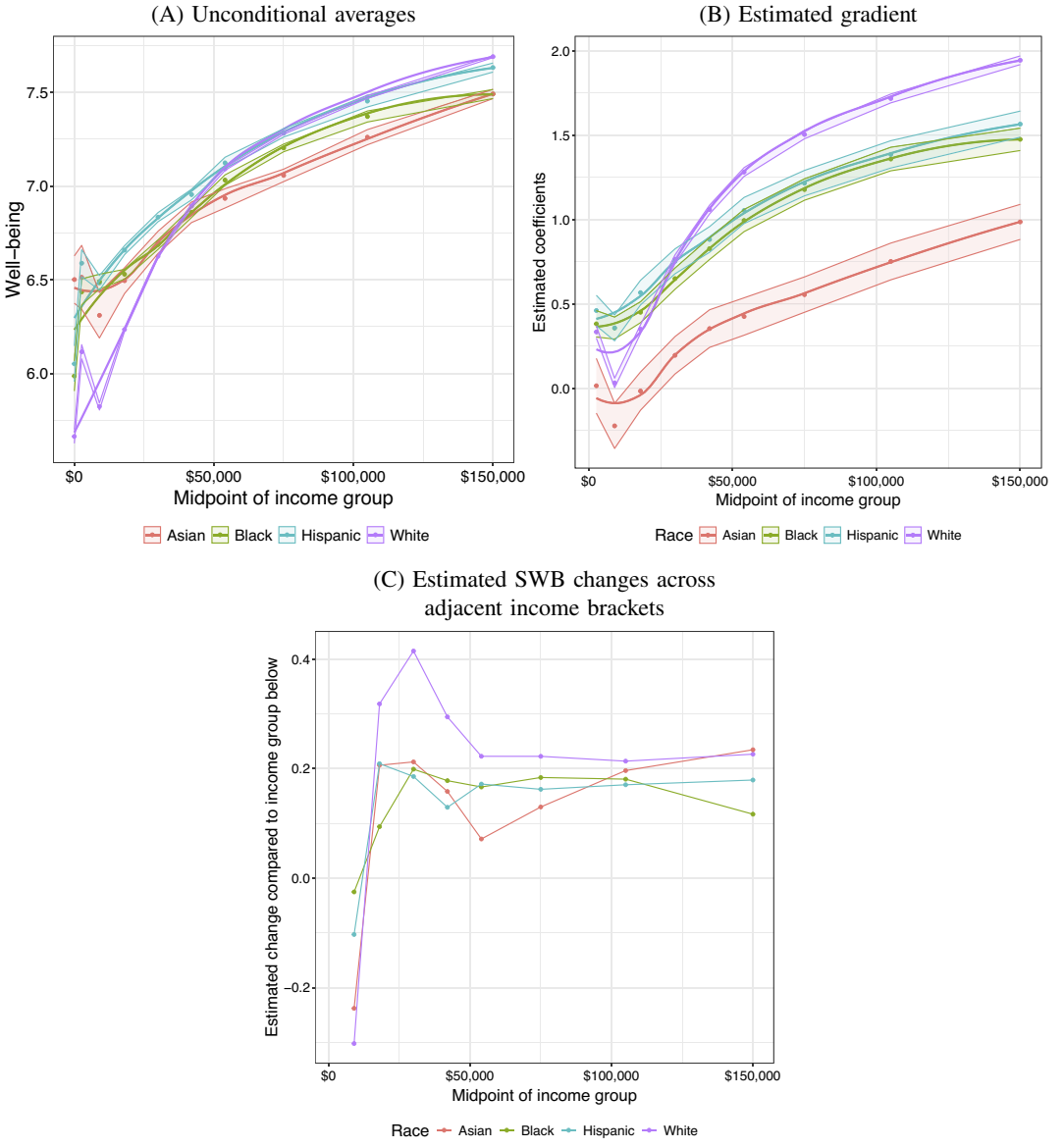


Figure 1. *Relationships between income and well-being.*

Note: The figure shows the relationship between income and well-being across racial groups. Well-being is measured by the Cantril ladder question. The horizontal axis displays the midpoint of each income category, where the highest income category ($120,000+) is displayed at $150,000. Panel A shows the average level of well-being across different income levels without controlling for additional covariates. Panel B shows the estimated increase in well-being when moving an individual from the lowest income category to a higher one, controlling for gender, age, education level, religion, and survey year. Panel C represents the estimated change in well-being associated with moving from an income category to the immediately adjacent higher income category. The estimates are derived from the coefficients in Panel B by calculating the difference between adjacent income group effects. Curves in panels A and B are estimated using locally estimated scatterplot smoothing. Table S4 in the Supplementary Material presents the results of the regression analyses.

One potential explanation for the different slopes is that income groups may vary between races in characteristics such as age and education. To address such composition differences, we estimate the association between income and well-being, while controlling for other variables known to correlate with well-being, such as gender, age, education level, religion, and year in which the survey was conducted, following Equation (1).

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Figure 1B displays the coefficients from these regression models. Using the lowest income group as the reference point, each dot represents the estimated change in well-being when an individual moves from the lowest income group to a higher one, holding constant the aforementioned set of possible confounding variables. Consistent with the unconditional relationship displayed in Panel A, we find a steeper income–well-being gradient for Whites than for other groups. For example, moving an individual from the lowest income group to a middle one ($36,000–$48,000) is associated with a 1.059 point increase in well-being for Whites ($SE = 0.016$, $t(1,720,996) = 79.94$, $p < 0.001$), whereas the same change in income only yields an increase of 0.83 point for Blacks ($SE = 0.033$, $t(173,229) = 25.14$, $p < 0.001$), 0.88 point for Hispanics ($SE = 0.039$, $t(164,377) = 22.75$, $p < .001$), and 0.35 point for Asians ($SE = 0.057$, $t(45,409) = 6.21$, $p < 0.001$). Similarly, moving an individual to the highest income category yields an estimated well-being increase ranging from 1.94 points for Whites ($SE = 0.013$, $t(1,720,996) = 148.46$, $p < 0.001$) to 0.99 point for Asians ($SE = 0.053$, $t(45,409) = 18.60$, $p < 0.001$), with Blacks (1.47 points, $SE = 0.033$, $t(173,229) = 43.61$, $p < 0.001$) and Hispanics (1.57 points, $SE = 0.039$, $t(164,377) = 39.72$, $p < 0.001$) in the middle.

One potential concern is that these results are an artifact of using the lowest income group as the reference. To address this concern and to provide a clearer picture of incremental well-being gains across income levels, we plot the step-wise changes between adjacent income categories in Panel C, based on the coefficients in Panel B. These results show a similar pattern, with Whites generally experiencing larger incremental well-being increases when moving between adjacent income groups compared to other racial groups. The only exceptions occur at the income distribution extremes: transitions from the lowest to second-lowest income group and from the second-highest to highest income group show larger incremental gains for other groups. For all other transitions, however, Whites exhibit a larger incremental well-being increase than other racial groups.

To determine whether the observed differences in the income–well-being gradient are statistically significant, we estimate a model using data from all races, and include interaction terms between race and income in predicting well-being. The control variables are the same as before. The results of this regression analysis (presented in Section B of the Supplementary Material) reveal that the increase in well-being associated with moving an individual from the lowest income group ($0) to the highest income group ($120,000) is significantly higher for Whites compared to the respective minority groups (all $p < 0.001$). This pattern of greater increases in well-being from income for Whites extends to smaller income changes as well. In fact, the estimated increase is significantly larger for Whites than for any other group when moving an individual from the lowest income group to any income group at or above a middle one ($36,000–$48,000), with all p-values less than 0.001.

We also test whether our findings can be explained by unobserved neighborhood characteristics or by different relative income comparisons (Ball and Chernova, 2008; Boyce et al., 2010). To do so, we first estimate a set of regression models that account for neighborhood characteristics by controlling for zip code fixed effects. These models account for any unobserved time-invariant neighborhood characteristics, such as school quality, crime, housing prices, natural beauty, etc. The results of these models, shown in Figure S3 in the Supplementary Material, are very similar to those of our main specification, suggesting that unobserved location characteristics do not explain our findings on income and well-being across racial groups.

Next, to test whether relative income comparisons can explain our results, we follow the methodology in Boyce et al. (2010) by assuming that the average income in one's neighborhood serves as a reference point for such comparisons. We specify a set of regression models that interact the level of respondents' own income and the income level of their neighborhood using average zip code-level income data, obtained from ZIP Code Business Patterns data (U.S. Census Bureau, 2018). Table S8 in the Supplementary Material shows the results. The interaction terms between zip code income and respondents' own income suggest that higher zip code-level incomes dampen the positive effect of having a higher income oneself. Yet, the interaction terms are not meaningfully different across racial groups, suggesting that relative income considerations are similar across groups. Moreover, the pattern

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of different absolute income–well-being gradients remains apparent even after controlling for relative income considerations.

3.1. Within-person variation in income

We further test whether our main finding can be replicated using a different data set from the PSID (Institute for Social Research, 2024). As the PSID surveyed the same individuals over time, its data allowed us to account for within-person variation in income. Conducted since 1968, the PSID is a longitudinal, genealogical survey of roughly 18,000 people in 5000 households and their descendants since 1968, with the sample consisting of a nationally representative sample of households and additional samples of low-income and immigrant households. Unlike the Gallup Poll surveys, the PSID has the main advantage of surveying the same people over time. Accordingly, we can include person fixed effects to control for any unobserved characteristics that are constant at the individual level. Examples are personality traits, cultural background, and childhood experiences, which may confound the relationship between income and well-being. In other words, we employ a within-subject design to examine individual-level changes in income and well-being. With the PSID data, we compare only Whites and Blacks, because there are insufficient observations to meaningfully compare other racial groups. Section D of the Supplementary Material explains our methodology in more detail.

Table S9 in the Supplementary Material displays the results. We find that for Whites, income has a positive and statistically significant relationship with well-being ($b = 0.049$, $SE = 0.010$, $t(10443) = 4.805$, $p < 0.001$). For Blacks, by contrast, the relationship is positive but non-significant ($b = 0.031$, $SE = 0.025$, $t(8,363) = 1.28$, $p = 0.200$). The difference in coefficients is sizable, with effect sizes differing by a factor of 1.5 or more, depending on model specifications. These large differences notwithstanding, the difference in coefficients between Whites and Blacks is not statistically significant ($b = -0.016$, $SE = 0.026$, $t(18816) = -0.62$, $p = 0.534$) as the standard errors are too large to detect reasonable differences between both groups. Still, the results are directionally consistent with our findings from the GP data.

3.2. Heterogeneity in other well-being relationships

Our findings on racial differences in the income–well-being gradient raise a broader question: Do similar patterns of heterogeneity exist in other well-being relationships? To address this question, we extend our analysis in three directions. First, we examine whether racial differences in the income–well-being gradient are consistent across alternative measures of subjective well-being. Second, we investigate whether the relationship between income and expected future well-being varies by race. Finally, we explore whether racial heterogeneity extends to another well-documented pattern in well-being research, namely, the relationship between age and subjective well-being. This broader investigation allows us to determine whether the heterogeneity we observe is specific to the income–well-being relationship or reflects more fundamental differences in how various factors relate to well-being across racial groups.

3.2.1. Alternative well-being measures

To test whether racial differences in the income–well-being gradient extend to other measures of well-being, we examine 10 additional items in the GP survey that indirectly measure respondents' well-being. These items ask respondents whether they (1) are satisfied with their relative living standard, (2) like what they do every day, (3) learn something new every day, (4) feel like they have enough money, (5) consider their city the perfect place to live, (6) use their strengths every day, (7) report that their relationship with their spouse, partner, or closest friend is stronger than ever, (8) experienced enjoyment yesterday, (9) experienced worry yesterday, and (10) experienced stress yesterday.[5] As these

[5]We invert the answer scales for the 'stress' and 'worry' questions, such that the value of 0 indicates that the respondent experienced stress or worry yesterday, whereas the value of 1 implies the absence of such an experience.

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ten items measure different aspects of well being, we conducted a factor analysis to confirm the presence of common underlying dimension(s) (see Section C of the Supplementary Material for a detailed explanation).

The pattern of items loading on the same factors suggests that the first factor represents Positive Evaluation of Life (comprising items like 'Satisfied with living standard' and 'City is a perfect place'), whereas the second factor represents Lack of Negative Affect (comprising the two items 'Worried yesterday' and 'Stressed yesterday'). We analyze factor scores for these two factors as dependent variables to test whether these alternative measures of well-being would also show racial differences in the income–well-being gradient.

Figure 2 illustrates both the unconditional relationship between income and our alternative well-being measures (Panels A and C) and the relationship after controlling for covariates (panels B and D). For the first principal component, which captures positive evaluative dimensions of well-being, our findings mirror our main analysis: Whites exhibit a steeper income–well-being gradient than other racial groups, especially Asians. Whites again tend have the lowest unconditional well-being at low income levels, and the highest well-being at high income levels. The only distinction from our main analyses is that, upon controlling for additional covariates, the differences in the estimated gradient between Whites and Blacks become smaller.

The second principal component, representing the absence of negative affect, shows different results than our main analysis. While higher income predicts similarly large reductions in stress and worry for Whites, Blacks, and Hispanics, this relationship is substantially weaker for Asians, who show only modest improvements in negative affect as income increases. Taken together, these results demonstrate that racial differences in the relationship between income and well-being persist across multiple dimensions of subjective well-being, but that the exact nature of these differences changes depending on the specific dimension of well-being being considered.

3.2.2. Expected future well-being

We next analyze the relationship between income and expected future well-being across racial groups, which we conceptualize as a measure of optimism about one's future life trajectory. We use expected well-being in five years rather than the within-person difference between current and expected well-being as our main analysis, because using absolute levels avoids conflating current well-being with optimism, as those with high current well-being may show smaller expected improvements despite maintaining positive life outlooks. However, for completeness and for the additional insight it might provide, we also analyze within-person differences, as a within-person difference measure (expected well-being minus current well-being). This alternative measure has the methodological advantage of addressing potential critiques about differential scale use between racial groups, as it controls for group-specific tendencies in how individuals interpret and use the response scale. These different score results further provide converging conclusions to those of the expected well-being measure and appear in Figure S4 in the Supplementary Material. Table S10 in the Supplementary Material presents descriptive statistics for expected future well-being across racial groups. We discuss the main findings for both the single measure expected future well-being and difference score below.

Blacks report the highest expected well-being five years into the future (8.27), followed by Asians (7.97), Hispanics (7.95), and Whites (7.44). Consistent with these absolute levels, Blacks also anticipate the largest positive change in well-being over the next five years (1.35 points) and are most likely to expect their well-being to improve (63.5% expect positive change). In contrast, Whites show the least optimism, expecting the smallest improvement (0.36 points) and being least likely to anticipate positive change (41.6%). Whites are also most likely to expect their well-being to decline (19.5%), compared to substantially lower rates among minority groups (10.7%–16.1%).

Figure 3 illustrates both the unconditional relationship between income and expected well-being (panel A) and the estimated relationship after controlling for covariates (panel B). The unconditional relationship reveals a pattern that differs markedly from our main analysis: Whites consistently exhibit lower expected well-being than minority groups across all income levels. These differences in expected

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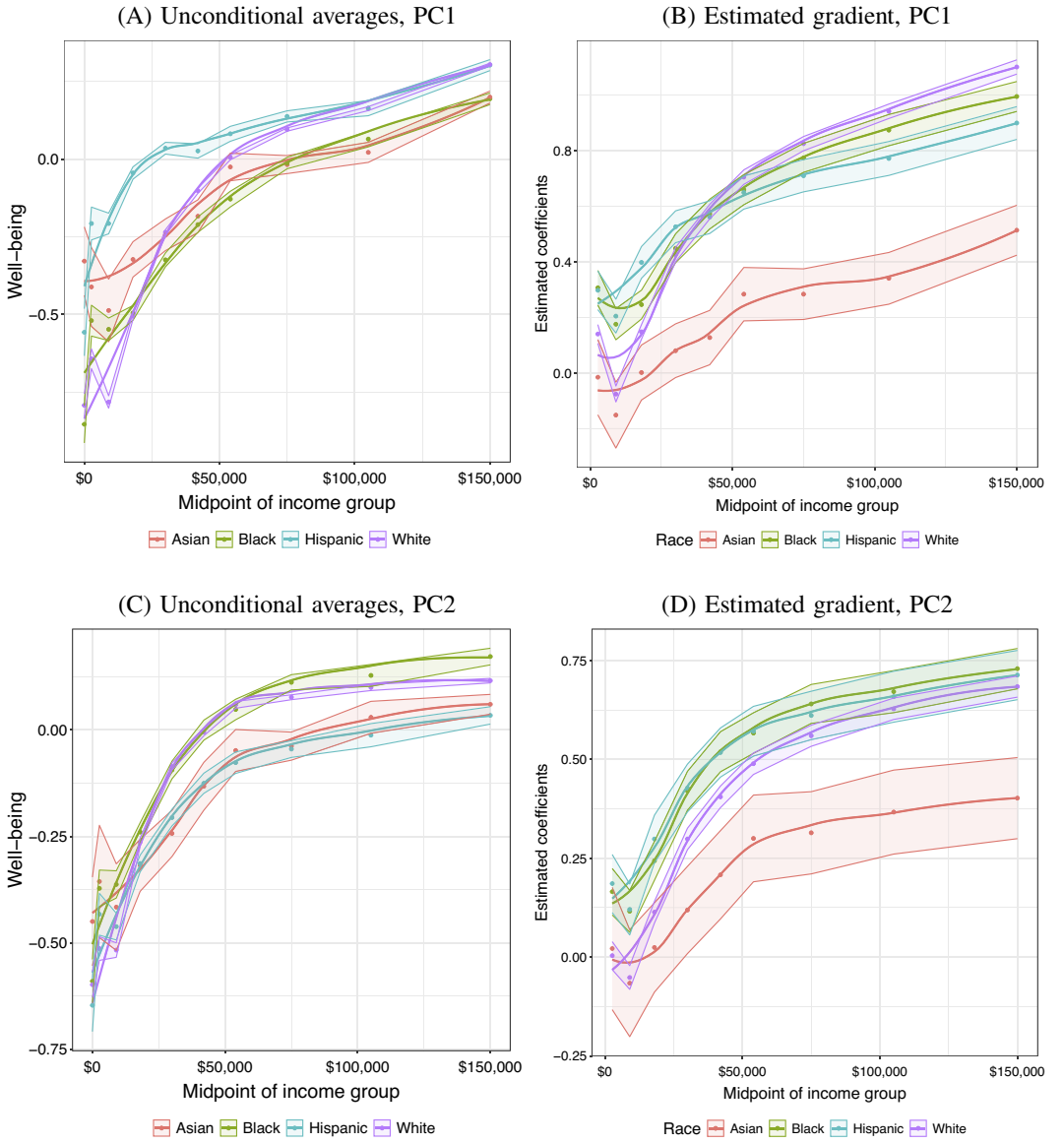


Figure 2. *Relationships between income and well-being, principal components.*

Note: The figure shows the relationship between income and the first two principal components of a set of 10 alternative well-being measures. The first principal component (PC1) captures positive evaluative dimensions of well-being, whereas the second principal component (PC2) captures the absence of stress and worry. All other definitions are the same as in Figure 1.

well-being levels are consistent with prior research by Graham (2017), Graham and Pinto (2019), and O'Connor and Graham (2019), and suggest that our main findings are not explained by general pessimism among minorities.

Interestingly, when examining the income-expected well-being gradient after controlling for covariates (Panel B), we find that the relationship closely parallels the (present) income–well-being gradient from our main analysis. Despite vast differences in the absolute levels of expected well-being between racial groups, the way income predicts *changes* in expected well-being follows a similar pattern to how income predicts current well-being, with Whites showing a steeper gradient than minority groups, particularly Asians.

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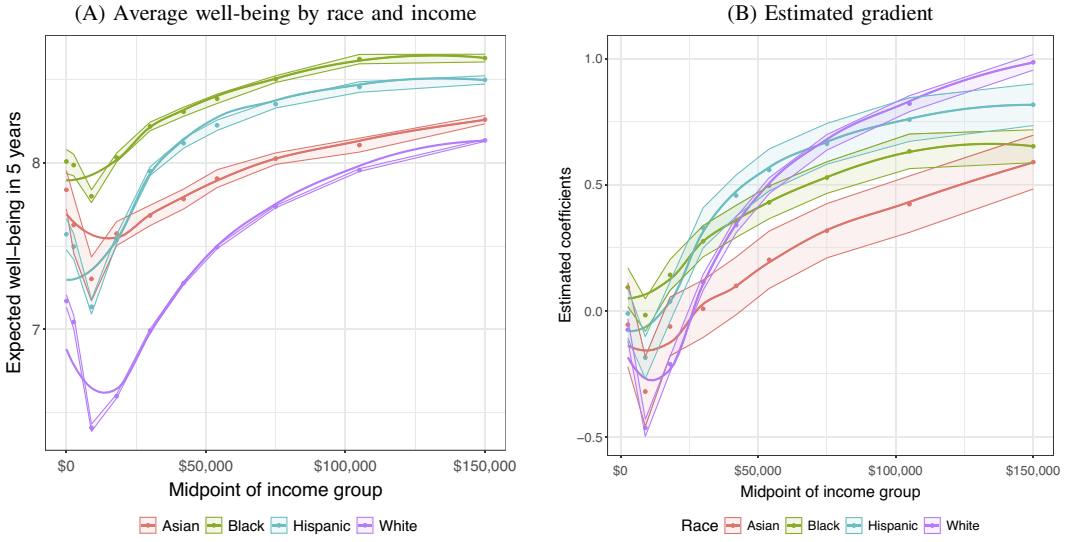


Figure 3. *Relationships between income and well-being 5 years from now.*
Note: The figure shows the relationship between income and expected well-being across racial groups. Expected well-being is measured by an individual's expected answer to the Cantril ladder question five years into the future. Panel A shows unconditional averages, Panel B shows estimated coefficients. All other definitions are as in Figure 1.

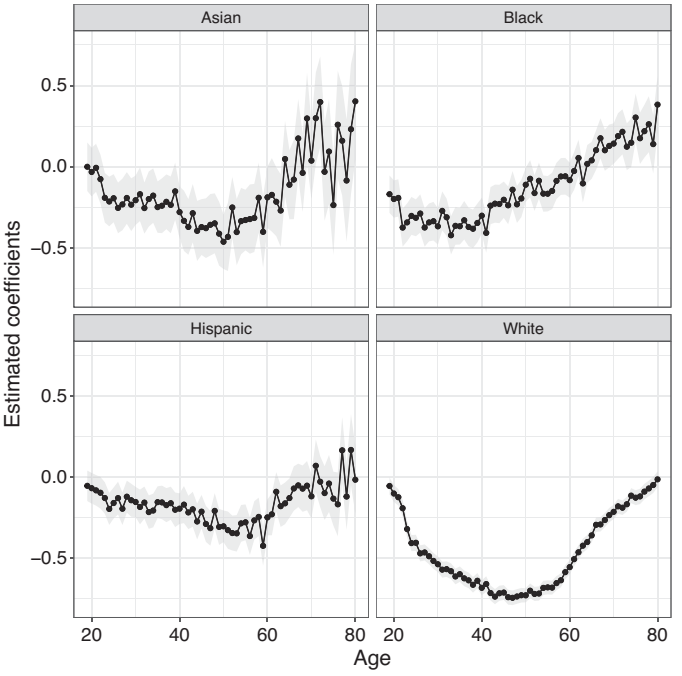


Figure 4. *Estimated relationships between age and well-being, controlling for covariates.*
Note: The figure shows the relationship between age and well-being across racial groups. Each dot is the estimated difference in well-being between an individual of a particular age, and an 18-year-old individual (reference group) with the same observable characteristics.

3.2.3. Relationship between age and well-being

Last, we also examine whether racial differences evident for income–well-being gradients extend to another well-documented pattern in the well-being literature, namely, the finding that well-being follows a U-shaped pattern over people's lifetimes (Blanchflower, 2021; Blanchflower and Graham,

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2021; Wunder et al., 2013). To examine this particular question, we flexibly estimate the relationship between age and well-being, controlling for income, gender, age, children, marital status, education level, employment status, religion, and survey year. Section E of the Supplementary Material gives a detailed explanation of the methodology.

The results are presented in Figure 4. Mirroring the average effects reported in prior work, we do find evidence of the well-documented U-shape, but the U-shaped relationship was more pronounced for Whites than for other racial groups. For other racial groups, the midlife dip is substantially smaller. Table S11 in the Supplementary Material shows the regression results of a specification that includes *age* and age^2 to examine the shape of the age–well-being relationship. Both the linear and squared age terms are statistically significantly larger for Whites than for other groups. We also conducted a two-lines test (Simonsohn, 2018) for each racial group to test for a U-shaped relationship between age and well-being (see Section F of the Supplementary Material for methodological details and results). These tests also reveal that the U-shaped relationship is more pronounced for Whites than for other racial groups (see Figure S2 in the Supplementary Material). These findings further highlight the importance of examining heterogeneity in well-being relationships across different demographic groups—as even these well-documented relationships might apply differently to some groups than to others.

4. Conclusion

We find that the well-documented relationship between income and well-being differs between racial groups: While well-being rises with income across all racial groups, the gradient of this relationship varies significantly between racial groups. Whites experience the steepest gradient, gaining the most in subjective well-being with every additional dollar, whereas Asians show the flattest gradient. These disparities are large and cannot be fully accounted for by factors such as demographic or socioeconomic differences, or local circumstances.

Racial heterogeneity extends beyond the income–well-being gradient to other important relationships. When examining alternative well-being measures, we find similar patterns of racial differences for both positive life evaluations and the absence of negative affect, with steeper gradients for Whites and flatter gradients for Asians. The relationship between income and expected future well-being similarly varies by race. We further find that the widely documented U-shaped pattern of well-being over one's lifetime also differs across racial groups: It is more pronounced among Whites than among other racial groups.

It is important to acknowledge that the cross-sectional nature of our primary data limits our ability to draw causal inferences. The associations we document, while robust to an extensive set of demographic and socioeconomic controls, may still be influenced by unobserved factors that differ systematically between racial groups. Nevertheless, the strength and consistency of the correlational evidence presented here suggest possible differences in how income relates to well-being across racial groups. Future research, ideally exploiting exogenous shocks to income, is necessary to conclusively determine the causal magnitude and mechanisms driving racial differences in the income–well-being relationship.

Nonetheless, our findings have important implications for both research methodology and policy applications. For researchers, they reveal that widely accepted relationships in the well-being literature, such as the income–well-being gradient and the U-shaped age pattern, vary substantially across groups. This highlights the importance of examining heterogeneity as a standard practice rather than simply controlling for demographic variables.

For policymakers, our results demonstrate the necessity of considering group-specific responses rather than one-size-fits-all solutions when designing interventions intended to enhance well-being. Although our research focuses on racial differences, other dimensions such as health, personality, and social connections may also moderate these relationships (Finkelstein et al., 2013; Proto and Rustichini, 2015; Richards, 2016). Our findings contribute to this literature by establishing race as a societally

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important variable that substantially modifies the relationship between income and well-being. More broadly, these between-group differences in the income–well-being gradient highlight how cultural contexts, personal circumstances, and life experiences shape the ways in which objective conditions like income translate into subjective experiences of well-being.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/jdm.2025.10015.

Data availability statement. The data that support the main findings of this study are from the Gallup Daily Poll. These data are available from the Gallup Organization but restrictions apply to the availability, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon request, subject to permission from the Gallup Organization. We will make both the code that was used to clean and combine the data, the code that was used to obtain our results, and instructions for obtaining the data available online with publication.

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