The University of Chicago

# Diversifying Well-being: The Relationship between ZIP Code-Level Racial Diversity and Psychological Richness

By

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## 1. Introduction: A Diversifying World

Increasing levels of diversity have become hallmarks of the modern globalizing world. With greater global interconnectivity, expanded communication tools, technological development, and increased global migration, many people have greater opportunities to interact with racially, religiously, or culturally diverse others than perhaps at any other point in history. This increasing diversification presents both profound possibilities and potential challenges as people grapple with the changing social and communal dynamics. In light of both this increasing diversification and the often mixed responses to it, it is especially valuable now to understand how living within a diverse community impacts individual well-being. Previous scholarly work has focused primarily on addressing how communal racial diversity impacts individual happiness or life satisfaction, as one of the most well-known and well-researched components of well-being. However, the relationship between diversity and psychological richness, another vital component of individual well-being, has largely gone unexplored up to this point. Therefore, this paper addresses three primary questions regarding how living within a racially diverse community affects both individual levels of psychological richness and overall individual well-being:

*Q1: How does living within a racially diverse community affect individual psychological richness?*

*Q2: Will the relationship between diversity and psychological richness differ from that between diversity and the other two measures of well-being?*

*Q3: How does a person's racial identity affect their relationship with diversity?*

To address these central questions regarding diversity and psychological richness, however, one must first examine the current relevant literature regarding diversity, well-being, and

psychological richness independently so that a clear link between these concepts can be established.

### *1.1 Constrict Theory: A Direct Challenge to Well-being*

Scholars have long recognized that understanding the impact of diversity on the different members within a community is vital for also understanding how it might potentially impact individual well-being. In his landmark research findings on diversity, Putnam (2007) finally addressed the ongoing debate between the contact and conflict theories of diversity by presenting extensive data supporting a new model, known as the "constrict theory" of social capital (p. 144). Rather than either decreasing racial animosity (Du Bois, 1899; Stouffer et al., 1949; Allport, 1954; Siegelman and Welch, 1993; Brown et al., 2021) or simply increasing a sense of outgroup threat (Blumer, 1958; Giles & Evans, 1986; Enos, 2014; Enos, 2016), Putnam found that diversity actually has a "constricting" effect, where increasing diversity actually lowers trust among both in-group and out-group communities, leading to greater social isolation and overall weaker social capital (Putnam, 2007).

Based on Putnam's research regarding the constrict theory, therefore, one could reasonably assume that greater diversity may lead to lower overall well-being since happiness and meaning, two of the primary factors in well-being, are both related to social support and connecting to something greater than oneself (Oishi & Westgate, 2022). In fact, Seder and Oishi (2009) also found this type of diversity effect when conducting research that demonstrated university students with more homogenous friendship networks on Facebook actually scored higher on life satisfaction and positive feelings than those with more heterogeneous networks. Similar results were also found both by Florez et al. (2019) who demonstrated that higher levels

of meaning are associated with higher degrees of prejudice and by Elnakouri et al. (2021) who demonstrated that collective hate towards a group, as opposed to individual hate towards a specific person, often produced higher meaning in life. Therefore, based on the preponderance of the current research on diversity and its impact on well-being, one might reasonably assume that living within a diverse community would reduce overall well-being.

### *1.2 A Potential Answer: Psychological Richness*

While portions of the current literature may appear to present a negative view of diversity at first glance, however, there are also substantive reasons to believe that this may not be the full picture. The current literature on diversity does convincingly demonstrate that increased diversity likely reduces happiness and meaning in certain circumstances, but these are not the only two factors that contribute to well-being. Oishi and Westgate provide compelling evidence that the current framework of human well-being should be expanded beyond happiness and meaning to also include psychological richness, a third vital and distinct element of living a good life (Oishi & Westgate, 2022). While happiness is associated with stability and satisfaction, and meaning with a greater purpose, psychological richness is more defined by a sense of experiencing perspective-changing exploration that contributes to living a good life (Oishi & Westgate, 2022). In this manner, psychological richness is often associated with an openness to new experiences, an awareness that one's perspective is not definitive or universal, a higher penchant for creativity and narrative complexity, and a willingness to consider challenging experiences rewarding even if difficult (Oishi & Westgate, 2022). Because of these different causes and features, it is possible that psychological richness may have a different relationship with diversity than either happiness or meaning. Therefore, since past studies have only focused on the relationship

between diversity and these first two components of well-being, it also remains possible that the current literature on diversity has unintentionally presented an overly negative portrayal of diversity by not considering how it may impact psychological richness as well.

Additionally, there are reasons to believe that psychological richness, unlike happiness and meaning, is positively correlated with diversity based on the current literature. First, political liberalism, a factor commonly associated with racial openness in the U.S. context, is highly related to psychological richness (Oishi et al., 2021). Second, psychological richness has proven to be more resistant to challenges and traumatic events than either happiness or meaning, so it is possible that the different challenges inherent in increasing diversity may not affect psychological richness in the same way as its counterparts (Oishi & Westgate, 2022). Finally, while a link between diversity and psychological richness has yet to be definitively proven, the current research has demonstrated that certain experiences which involve increased exposure to diversity, such as studying abroad, do increase rates of psychological richness while not having a similar impact on happiness or meaning (Oishi & Westgate, 2022). Based on the substantial evidence of the current literature on psychological richness, therefore, there are substantive reasons to believe that psychological richness, unlike happiness and meaning, may actually have a positive causal relationship with increased racial diversity.

### *1.3 The Current Research*

Existing work has not considered how living within a racially diverse or heterogenous community may impact psychological richness, especially when compared to other measures of well-being. Therefore, in order to address this gap in the literature, we proposed two primary

hypotheses regarding the relationship between the degree of diversity in one's community and the prevalence of psychological richness:

*H1: Living within a racially diverse community leads people to have greater degrees of psychological richness.*

*H2: The relationship between psychological richness and community-level racial diversity differs from that between community-level racial diversity and either happiness or meaning.*

In order to test these predictions, we conducted a large-scale survey wherein community-level rates of diversity served as the independent variable, individual psychological richness served as the primary dependent variable, and individual happiness and meaning served as the secondary dependent variables.

First, our study aimed to address *H1* by determining whether living within U.S. ZIP Code areas with higher levels of racial diversity is correlated with higher rates of individual psychological richness. In this manner, this study examined whether simply living within a community or geographic area with increased racial diversity leads to enough exposure to interesting or perspective changing experiences to potentially impact one's psychological richness. Second, this research project aimed to address *H2* by similarly examining how ZIP Code-level racial diversity related to individual happiness and meaning, to provide a comparison between these three measures of well-being. In this manner, our research project intentionally followed up on the previous work by Seder and Oishi (2009) on diversity and well-being, by now including all three measures of well-being. Finally, in order to measure community-level diversity, this study specifically utilized ZIP Code demographic data, as ZIP Codes are large enough geographic areas to measure for a community effect that extends beyond one's

immediate social network and yet not so large as to include communal dynamics unlikely to affect the individual at all. Several similar studies have demonstrated that ZIP Code-level demographics are far more likely to have an effect on individual personality traits and measures than large geographic areas, such as city or state level demographics (Elleman et al., 2020).

Conducting our research in this manner provided several distinct benefits. First, it allowed us the opportunity to potentially replicate Seder and Oishi's previous findings on the relationship between diversity and happiness, but this time involving large-scale geographic communities instead of online social networks. Second, as previously mentioned, this approach provided the opportunity to reexamine previous pessimistic portrayals of the relationship between diversity and well-being by this time including psychological richness, a measure far less dependent on traditional stability and comfort. Third, by including all three well-being measures in this way, this research approach also enabled us to directly compare the different ways communal racial diversity impacted all three measures of well-being to further explore their distinctive features and how they may differ from each other. Finally, analyzing racial diversity at the ZIP Code-level allowed us to explore how large-scale communal effects on well-being and complex dynamics at different levels of society may affect one's relationship with diversity. For example, while social network studies allow one to focus on direct impacts, this larger-scale research scope allowed us to address questions such as how being in the racial majority or minority either at the community-level or national-level may change the impact of diversity all in very different ways. Overall, therefore, we aimed to provide a comprehensive examination of how ZIP Code-level racial diversity impacts individual well-being, by first focusing particularly on the role of psychological richness, second comparing the effects of the

different measures of well-being, and third examining different dimensions of community racial diversity relate to well-being.

## 2. Methods

### *2.1 Participants*

Participants were 3005 adults from 104 different United States cities (with roughly 30 participants per city) recruited through Amazon Mechanical Turk (Mturk). The age of participants ranged from 19 to 92 years old as of 2022 when the data was collected with a mean age of 38.4 (SD = 11.9). In terms of gender, 1624 (52.3%) participants identified as women, 1174 (37.8%) participants identified as men, and 307 participants (9.9%) either identified as "Other" or chose not to answer. Regarding race/ethnicity, 320 (11.3%) participants were African American, 295 (10.4%) participants were Asian, 239 (8.4%) participants were Hispanic/Latinx, 11 (0.4%) participants were Native American, 4 (0.1%) participants were Pacific Islander, 1771 (62.5%) participants were White, 148 (5.23%) participants were categorized as Multi-racial, and 44 (1.6%) identified as Other.

### *2.2 Procedures*

As previously mentioned, all participants were recruited and completed our one-time survey through Mturk. These online surveys were conducted from January 2022 to January 2023, with the first being completed on 01/08/2022 and the last being completed on 01/27/2023. As part of this survey, participants answered subjective questions about their communities (such as their perceptions of the urbanity, mobility, or trust in their community), next completed personality metrics (such as the Big Five Personality Traits), then completed all three well-being metrics of interest for this project, and finally provided some personal demographic information,

such as their own racial identity and the ZIP Code where they live. After completing the survey, all participants received $3.30 as compensation for filling out the survey and completing the study.

*2.3 Materials: Well-Being Measures*

In order to measure and compare all three areas of well-being, participants completed questionnaires related to happiness, meaning, and psychological richness. First, in order to provide a happiness score, participants completed the Satisfaction with Life Scale (SWLS), where they rated their agreement with statements such as “I am satisfied with my life” on a 1-7 point scale from “Strongly Disagree” to “Strongly Agree” (Diener et al., 1985). Second, in order to provide a meaning score, participants completed the Meaning in Life Questionnaire (MLQ_P), where they similarly rated statements such as “My life has a clear sense of purpose” (Steger et al., 2006). Finally, participants completed the 12-Item Psychologically Rich Life Questionnaire (PRLQ), where they then rated statements such as “I have had a lot of interesting experiences” and “I experience a full range of emotions via first-hand experiences such as travel and attending concerts,” in order to provide the key psychological richness measure (Oishi et al., 2019; Oishi et al., 2021).

All three of these well-being measures have been well-tested and used extensively in past literature on well-being. In our analysis, we computed internal reliability checks on the different questions in the Satisfaction with Life Score, the Meaning in Life Questionnaire, and the Psychologically Rich Life Questionnaire using McDonalds's omega. The ω for the SWLS was 0.94, for the MLQ was 0.96, and for the PRLQ was 0.95. These high scores for McDonalds's omega suggest very strong internal reliability for each of these scales. Also, as in demonstrated

previous studies, we found fairly consistent correlation between the three measures (roughly around r = 0.4–0.5), since all three capture aspects of well-being. However, there is enough divergence in their correlational relationships along with their predictors and outcomes to replicate previous findings that all three measures are capturing distinct aspects of well-being, with the SWLS being associated with security and positivity, the MLQ_P with purpose and coherence, and the PRLQ with curiosity and perspective change (Oishi & Westgate, 2022). As previously mentioned, past studies on the relationship between diversity and well-being have tended to focus primarily on happiness (SWLS) and meaning (MLQ_P) as their primary measures of well-being. Therefore, by administering surveys including all three measures in this study, we aimed to not only directly address psychological richness's relationship in relation to racial diversity but also to provide insight into the dynamics between these three dimensions of well-being in settings of varying diversity.

*2.4 Materials: Diversity Measures*

In order to calculate the degree of racial diversity in participants' ZIP Codes, we used the data provided by the U.S. Census Bureau on ZIP Code racial demographics in the "American Community Survey ACS 2018-2022 (5-Year Estimates)", which some of the largest, most accurate, and most widely used data on racial composition across the U.S. ("U.S. Census Bureau QuickFacts: United States", 2023). This ACS 2018-2022 data set contains the population sizes and percentages for each racial group in every ZIP Code in the United States. We then used this ZIP Code demographic to calculate a Diversity Index Score using a measure similar to the "ethnolinguistic fractionalization" formula employed by many scholars on diversity (Easterly & Levine, 1998; Montalvo & Reynal-Querol, 2014).

Referred to by many names across different disciplines, including the Simpson Index in ecology (Simpson, 1949), the Hirschman-Herfindahl Index in economics (Adajar et al., 2019), and the Blau Index in sociology (Blau, 1977), the Diversity Index score measures the probability that two randomly selected people from a given area, in this case U.S. ZIP Codes, will not belong to the same racial group and is based on the following formula: $\text{FRAC} = 1 - \sum_{i=1}^{N} \pi_i^2 = \sum_{i=1}^{N} \pi_i(1 - \pi_i)$. In this manner, the Diversity Index should provide a fairly accurate representation of the probability that participants are frequently encountering people of different racial groups within their surrounding ZIP Code-level community. Based on the ZIP Code where they reported living, each participant was thus given a ZIP Code Diversity Score for their community along with a variety of other ZIP Code measures based on the demographic information provided by the ACS Census data, such as the median household income and population density in their community. Therefore, by utilizing both the ACS census data and this Diversity Index, we were able to effectively analyze the relationship between the individual attributes measured in the survey and the broader dynamics in their surrounding community.

**Table 1**

*Key Terms and Measures*

| Term | Scales.Questionnaires | Definition |
|---|---|---|
| Psychological Richness | Psychologically Rich Life Questionnaire (PRLQ) | A life defined by interesting experiences and perspective change (Oishi et al., 2019). |
| Happiness | Satisfaction with Life Scale (SWLS) | A life defined by positivity and security (Diener et al., 1985). |
| Meaning | Meaning in Life Questionnaire (MLQ-P) | A life defined by purpose and connection (Steger et al., 2006). |
| Personal Openness | Big Five Personality Questionnaire (Big5-O) | Having a curious and open-minded personality (Soto & John, 2017). |
| Collective Shared Reality | Generalized Shared Reality Self-Report Measures (SR-G) | Feeling that those in your community share a joint perspective on the world (Rossignac-Milon et al., 2021). |
| Collective Efficacy and Trust | Collective Efficacy Scale (col.efficacy-trust) | Feeling that community members are trustworthy and help each other (Sampson et al., 1997). |
| ZIP Code Diversity Index | Ethnolinguistic Fractionalization Score (ZIP-Diversity-Index) | The probability that two randomly selected people from a ZIP Code will not be of the same race (Simpson 1949). |

The ZIP Code Diversity Index has several strengths as a measure for the level of community racial diversity. First, this measure looks at overall racial diversity and the probability of being exposed to different groups, rather than defining diversity simply as the prevalence of minority groups within an area. Because White/European American have traditionally been regarded as the majority and "standard" racial group in the U.S. context, concepts of community diversity can often be defined in relation to Whiteness, where increased diversity is defined by higher percentages of non-white people. For this study, however, we were interested in addressing how overall exposure to those of different backgrounds would impact psychological richness, so it was important to define diversity universally, not dependent on context, through a measure like the Diversity Index. In a similar manner, the Diversity Index also has the strength of not merely measuring one individual's probability of encountering racial others but instead capturing the overall cultural dynamics of a community where everyone is more likely to engage with those who are different from themselves.

These strengths of the Diversity Index, however, are also connected to several of its limitations as a measure. While it intentionally adopts a universal, almost race-neutral, approach to diversity, this approach inevitably leads the Diversity Index to in some way ignore the distinct racial dynamics and structures of power in the U.S. context. For example, the Diversity Index would give a ZIP Code with 70% of its population White and 30% Black the exact same diversity score as a ZIP Code with 30% of its population White and 70% Black, even though in practice we know that the racial dynamics, the access to structural resources, and the attitudes towards diversity would likely look vastly different between those two based on the dynamics of the U.S. context. Additionally, by focusing on the overall community exposure, the Diversity Index also cannot capture by itself the important ways in which the individual racial identify of

participants may shape the way they relate to the diversity in their community. For instance, an Asian participant would likely have very different experiences living in ZIP Codes that are 70% White, 70% Black, or 70% Asian. These experiences would also differ significantly from those of a potential Black and White participant living in each respective ZIP Code, despite all three participants having identical diversity scores in each of these three hypothetical ZIP Codes.

Despite these limitations, the ZIP Code Diversity Index was still an effective measure for this study as it reflected the overall probability of being exposed to those of different racial groups and backgrounds that we predicted may impact psychological richness (*H1*). However, in order to address these complex, context-dependent dynamics of racial diversity that are reflected in the Diversity Index, we decided to also run analysis on several conceptually significant subgroups after analyzing the participant group as a whole. First, we divided the participants into white and non-white subgroups, in order to analyze whether the overall racial dynamics and history of the country as a whole impacted how participants related to diversity.

Second, we divided participants into two new subgroups based on whether they are a part of the majority racial in their specific ZIP Code, such as an Asian participant in a majority Asian ZIP Code, or a part of a minority group for that ZIP Code, in order to analyze whether the participant's identity and the specific racial dynamics of their community impacted their relationship to diversity. Therefore, by analyzing the dynamics both in the large survey group as a whole and in these various subgroups, we aimed to provide a comprehensive analysis of the complex ways racial diversity and communal dynamics at different levels of psychological richness and well-being more broadly.

## 3. Results

### *3.1 Descriptive Statistics*

The means and standard deviations for all well-being measures, the Diversity Index scores, and all the other key variables are available in *Table 2*. For the well-being measures, the mean score for PRLQ was 4.88/7 (SD = 1.24, N = 2934), the mean score for SWLS was 4.18/7 (SD = 1.57, N = 2945), and the mean score for MLQ_P was 4.55/7 (SD = 1.53, N = 2944). As each of these well-being measures are on a 7-point, these mean scores ranging from 4-5 conceptually make sense and fall within the mid-range of the scoring metric. Also, while not of the utmost pertinence to the research questions of this study, it is interesting that the participants in this study on average scored higher on PRLQ than either SWLS or MLQ_P, especially considering in past studies participants reported valuing happiness first, followed by meaning, and then psychological richness (Oishi & Westgate, 2022).

For the most prominent diversity and community scores, the mean ZIP Code Diversity Index Score is 0.53/1.00 (SD = 0.15, N = 3105), the mean ZIP Code median household income was $78,540.24 (SD = $31,746.68, N = 3,084), and the mean city mobility score was 0.14 (SD = 0.03, N = 3105). It is functionally impossible to receive a full 1.00 Diversity Index score, as that would mean every person in that ZIP Code would be from a different racial group. Therefore, a mean score of

**Table 2**

*Descriptive statistics for key variables.*

| Variable | mean | sd | n |
|---|---|---|---|
| PRLQ | 4.88 | 1.24 | 2,934.00 |
| SWLS | 4.18 | 1.57 | 2,945.00 |
| MLQ_P | 4.55 | 1.53 | 2,944.00 |
| ZIP_Diversity_Index | 0.53 | 0.15 | 3,105.00 |
| ZIP_Median_Household_Income | 78,540.24 | 31,746.68 | 3,084.00 |
| mobility_score | 0.14 | 0.03 | 3,105.00 |
| walkscore_walkscore | 48.42 | 16.50 | 3,105.00 |
| Rough_Integration_Score | 0.76 | 0.15 | 2,910.00 |
| ZIP_Total_Population | 37,742.58 | 19,957.80 | 3,105.00 |
| ZIP_Population_Density | 6,991.48 | 11,232.46 | 3,105.00 |
| demo_SES | 4.47 | 1.59 | 2,794.00 |
| SR_G | 3.84 | 1.10 | 3,056.00 |
| col.efficacy_trust | 3.24 | 0.78 | 3,042.00 |

0.53 is actually relatively high, which is likely due to every participant in this study living within a U.S. city. Additionally, the mean median household income score being $78,540.24 means the sample is relatively representative of U.S. community wealth as the median household income for the U.S. as a whole was $74,580 in 2022 (Guzman & Kollar, 2023). Finally, for the key subjective measures, the mean personal SES score was 4.47/10 (SD = 1.59, N = 2749), the mean collective trust score (col.efficacy_trust) was 3.24/5 (SD = 0.78, N = 3042), and the sense of shared reality score (SR_G) was 3.84/7 (SD = 1.10, N = 3056). Overall, all these scores are around the expected mean for each of these measures, except for the measure of shared reality, which is below average, possibly again due to the city effect.

*Table 3* then represents the basic correlations between the ZIP Code Diversity Index, the three well-being measures, and the other key variables for all participants. As explained earlier, psychological richness (PRLQ), happiness (SWLS), and meaning (MLQ_P) are all strongly positively correlated, as we would expect based on past well-being research. All three well-being measures are positively correlated with community variables such as ZIP Code median household income and mobility, and individual variables such as personal socio-economic status and sense of trust, albeit to different degrees of statistical strength. All three variables are also negatively correlated with a ZIP Code's population size and population density, although PRLQ

**Table 3**

*Spearman Correlation Matrix for Key Variables.*

| | PRLQ | SWLS | MLQ_P | Div_Index | Med_Income | Mobility | Total_Pop | Density | Demo_SES | Shared_Reality | Trust |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRLQ | 1.000 | 0.496 | 0.497 | -0.037 | 0.054 | 0.044 | -0.040 | -0.004 | 0.231 | 0.193 | 0.240 |
| SWLS | 0.496 | 1.000 | 0.609 | -0.048 | 0.126 | 0.044 | -0.034 | -0.038 | 0.469 | 0.278 | 0.295 |
| MLQ_P | 0.497 | 0.609 | 1.000 | -0.026 | 0.047 | 0.027 | -0.009 | -0.032 | 0.241 | 0.200 | 0.224 |
| Div_Index | -0.037 | -0.048 | -0.026 | 1.000 | 0.009 | -0.059 | 0.190 | 0.185 | -0.026 | -0.041 | -0.064 |
| Med_Income | 0.054 | 0.126 | 0.047 | 0.009 | 1.000 | -0.014 | 0.168 | -0.044 | 0.210 | 0.062 | 0.132 |
| Mobility | 0.044 | 0.044 | 0.027 | -0.059 | -0.014 | 1.000 | -0.094 | -0.375 | 0.008 | -0.025 | 0.077 |
| Total_Pop | -0.040 | -0.034 | -0.009 | 0.190 | 0.168 | -0.094 | 1.000 | 0.109 | -0.008 | -0.037 | -0.040 |
| Density | -0.004 | -0.038 | -0.032 | 0.185 | -0.044 | -0.375 | 0.109 | 1.000 | 0.009 | 0.037 | -0.044 |
| Demo_SES | 0.231 | 0.469 | 0.241 | -0.026 | 0.210 | 0.008 | -0.008 | 0.009 | 1.000 | 0.143 | 0.201 |
| Shared_Reality | 0.193 | 0.278 | 0.200 | -0.041 | 0.062 | -0.025 | -0.037 | 0.037 | 0.143 | 1.000 | 0.466 |
| Trust | 0.240 | 0.295 | 0.224 | -0.064 | 0.132 | 0.077 | -0.040 | -0.044 | 0.201 | 0.466 | 1.000 |

is only slightly negatively correlated with population size (r = -0.040, p = 0.042), and MLQ_P is only slightly negatively correlated with population density (r = -0.032, p = 0.062).

With regards to community-level diversity, the variable at the core of this analysis, the ZIP Code Diversity Index is slightly negatively correlated with psychological richness (r = -0.037, p = 0.058) and meaning (r = -0.026, p = 0.184) and moderately negatively correlated with happiness (r = -0.048, p = 0.009). The Diversity Index score is also positively correlated with ZIP Code population size, population density and median household income, while be negatively correlated with mobility, personal socioeconomic status, trust, and shared reality. In regards to our two hypotheses for the relationship between diversity and psychological richness, this early correlational analysis seems to contradict *H1*, as diversity is negatively, not positively, correlated with PRLQ, but seems to actually affirm *H2*, as the correlation between diversity and SWLS is stronger and more statistically significant than the correlation between diversity and PRLQ. Finally, we have provided the descriptive statistics and correlation tables for each of the four subgroups, white participants, non-white participants, participants in the majority, and participants in the minority, in the *Appendix* (*Tables 11-16*) so that the differences between each group and the whole can be clearly examined.

### *3.2 Diversity and Psychological Richness*

Following the initial correlational analysis, we ran a multi-level modeling regression on the relationship between the ZIP Code Diversity Index and Psychological Richness. The city where participants lived served as the randomized effect for this MLM regression, to control for the fact that participants were recruited based on the 104 different cities where they lived. As seen in *Table 4*, increasing diversity was associated with slightly decreasing psychological

richness (β = -0.28). However, while this effect approached statistical significance (p = 0.083), it failed to reach the typical standard of fully robust statistical significance (p < 0.05). *Figure 1* visually represents this complicated relationship between diversity and psychological richness. While there is clearly some decrease in psychological richness as diversity increases reflected in *Figure 1*, this change in richness is relatively small and still belies significant divergence in the data points at the high end of diversity.

Then as *Table 4* also demonstrates, we ran a series of additional MLM regressions on the relationship between the Diversity Index PRLQ controlling for a variety of both community-level and individual variables. While we ran regressions for a vast variety of different potential control variables, the most prominent control variables of interest for this analysis were community median household income, mobility, population size, population density, and individual SES, which were therefore included in *Table 4.* As *Table 4* demonstrates, variables such as community income, community mobility, and personal SES tend to have a more

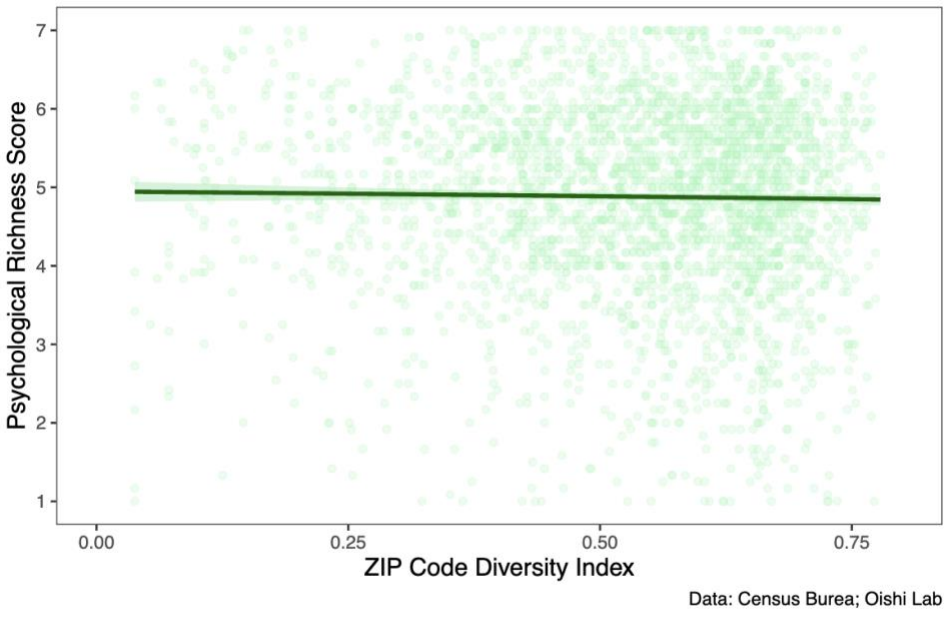


*Figure 1*. Scatterplot demonstrating the relationship between the racial diversity in a Participant's ZIP Code and the participant's psychological richness scores.

significant effect on psychological richness than just community diversity levels. While the slightly significant effect of diversity remains after controlling for only median household income, this effect is eliminated after controlling for a couple of these other community factors. In this case, though, the most significant control variable is personal socioeconomic status, as simply controlling for it removes any statistically significant effect of diversity on PRLQ.

Finally, we also ran a series of MLM interaction regressions on the relationship between diversity and psychological richness using each of these prominent interaction variables. The only two variables that produced an interaction of any statistical significance, however, were a

**Table 4**

*Psych Richness Controls Regression*

| | *Dependent variable:* | | | | | | |
|---|---|---|---|---|---|---|---|
| | PRLQ | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| ZIP_Diversity_Index | −0.282• | −0.296• | −0.284• | −0.304• | −0.266 | −0.205 | −0.210 |
| | (0.162) | (0.161) | (0.161) | (0.161) | (0.162) | (0.160) | (0.159) |
| ZIP_Median_Household_Income | | 0.00000*** | 0.00000*** | 0.00000*** | 0.00000*** | 0.00000 | |
| | | (0.00000) | (0.00000) | (0.00000) | (0.00000) | (0.00000) | |
| mobility_score | | | 2.196* | 2.804* | 2.578* | 2.318* | |
| | | | (1.097) | (1.146) | (1.156) | (1.120) | |
| ZIP_Population_Density | | | | 0.00000• | 0.00000• | 0.00000 | |
| | | | | (0.00000) | (0.00000) | (0.00000) | |
| ZIP_Total_Population | | | | | −0.00000* | −0.00000• | |
| | | | | | (0.00000) | (0.00000) | |
| demo_SES | | | | | | 0.183*** | 0.187*** |
| | | | | | | (0.015) | (0.014) |
| Constant | 5.029*** | 4.818*** | 4.492*** | 4.398*** | 4.499*** | 3.831*** | 4.148*** |
| | (0.091) | (0.109) | (0.196) | (0.202) | (0.208) | (0.208) | (0.110) |
| Observations | 2,934 | 2,914 | 2,914 | 2,914 | 2,914 | 2,775 | 2,794 |
| Log Likelihood | −4,779.632 | −4,753.299 | −4,750.291 | −4,760.814 | −4,771.153 | −4,471.645 | −4,470.231 |
| Akaike Inf. Crit. | 9,567.263 | 9,516.597 | 9,512.582 | 9,535.629 | 9,558.306 | 8,961.290 | 8,950.463 |
| Bayesian Inf. Crit. | 9,591.200 | 9,546.484 | 9,548.446 | 9,577.470 | 9,606.124 | 9,014.645 | 8,980.139 |

*Note:* •p<0.1; *p<0.05; **p<0.01; ***p<0.001

sense of shared reality and ZIP Code median household income, so only those two were included in *Table 5*. When controlling for shared reality, the Diversity Index now has a fully significant, negative main effect (β = -1.38, p = 0.008), but the interaction between diversity and shared reality has a significant positive effect (β = 0.307, p = 0.016). A simple slope analysis of this interaction effect reveals that its significance is mostly driven by participants who scored below the mean on shared reality (-1 SD: β = -0.541, p = 0.012; +1 SD: β = 0.136, p = 0.511). Therefore, participants living within communities with high diversity but low shared reality experience a significant reduction in psychological richness, while those living within communities of high diversity and high shared reality experience a moderate increase in psychological richness.

**Table 5**

*Psych Richness Interaction Regression*

| | *Dependent variable:* | |
|---|---|---|
| | PRLQ | |
| | (1) | (2) |
| ZIP_Diversity_Index | −1.380** | 0.306 |
| | (0.521) | (0.383) |
| SR_G | 0.074 | |
| | (0.071) | |
| ZIP_Diversity_Index:SR_G | 0.307* | |
| | (0.127) | |
| ZIP_Median_Household_Income | | 0.00001** |
| | | (0.00000) |
| ZIP_Diversity_Index:ZIP_Median_Household_Income | | −0.00001• |
| | | (0.00000) |
| Constant | 4.707*** | 4.513*** |
| | (0.292) | (0.207) |
| Observations | 2,932 | 2,914 |
| Log Likelihood | −4,708.030 | −4,763.136 |
| Akaike Inf. Crit. | 9,428.060 | 9,538.272 |
| Bayesian Inf. Crit. | 9,463.961 | 9,574.136 |
| *Note:* | •p<0.1; *p<0.05; **p<0.01; ***p<0.001 | |

Additionally, when controlling for median household income, the Diversity Index now has a non-significant positive effect on PRLQ ($\beta = 0.306$, $p = 0.424$), but the interaction between diversity and median household income has an interesting negative effect approaching significance ($\beta = -0.00001$, $p = 0.083$). The simple slope analysis then reveals that the significance of this effect is mostly driven by high income communities (-1 SD: $\beta = -0.081$, $p = 0.690$; +1 SD: $\beta = -0.608$, $p = 0.012$). Therefore, while this interaction effect between diversity and income fails to reach full statistical significance, it does have some interesting implications for conceptually understanding the complex relationship between diversity and well-being, and thus will be explored further later in this analysis.

### *3.3 Diversity and All Three Measures of Well-being*

As the previous section addressed *H1* by examining the relationship between diversity and psychological richness directly, this section now seeks to address *H2* by examining the

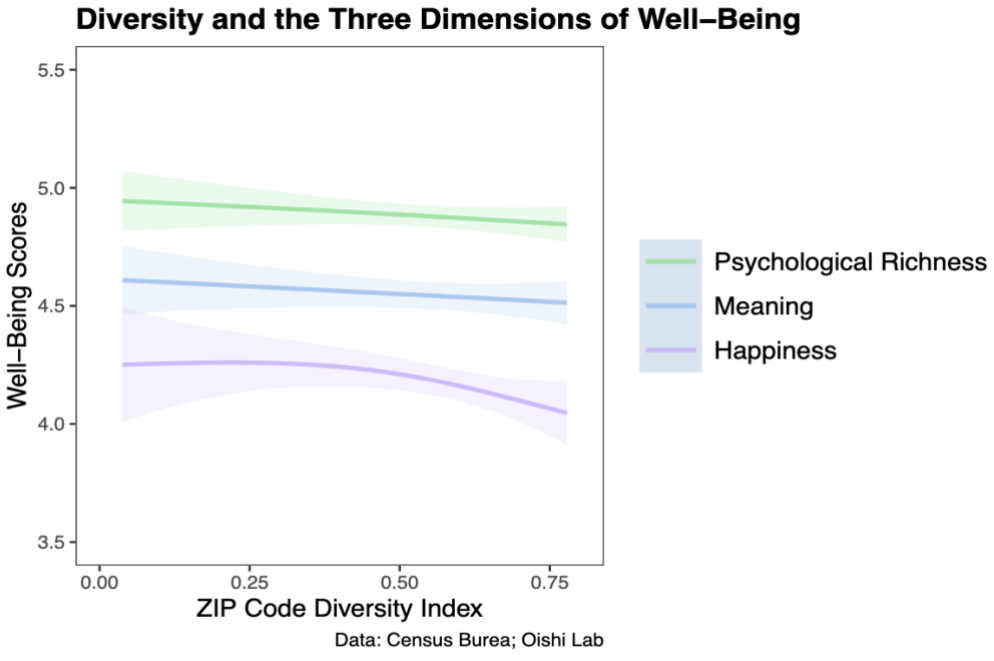


*Figure 2*. Smooth plot comparing the relationships between the ZIP Code Racial Diversity Index and all three measures of well-being.

relationship between diversity and all three measures of well-being compared to each other. As *Figure 2* illustrates, psychological richness and meaning have a relatively similar relationship with community diversity, slightly decreasing as diversity increases. In *Figure 2*, however, happiness clearly has a different relationship with diversity than either of the other two measures, decreasing quite significantly, especially at the high end of community-level diversity. This difference between happiness and both psychological richness and meaning is once again represented when running MLM regressions between the Diversity Index and all three measures. As demonstrated in *Table 6*, diversity once again has a minor negative effect on psychological richness (β = -0.282, p = 0.083), a non-significant, negative effect on meaning (β = -0.287, p = 0.132), and a statistically significant, negative effect on happiness (β = -0.410, p = 0.038).

**Table 6**

*Diversity and Well-being Measures Regression*

| | *Dependent variable:* | | |
|---|---|---|---|
| | Psych Richness | Happiness | Meaning |
| | (1) | (2) | (3) |
| ZIP Code Diversity Index | −0.282• | −0.410* | −0.287 |
| | (0.162) | (0.197) | (0.190) |
| Constant | 5.029*** | 4.396*** | 4.699*** |
| | (0.091) | (0.109) | (0.106) |
| Observations | 2,934 | 2,945 | 2,944 |
| Log Likelihood | −4,779.632 | −5,500.351 | −5,439.129 |
| Akaike Inf. Crit. | 9,567.263 | 11,008.700 | 10,886.260 |
| Bayesian Inf. Crit. | 9,591.200 | 11,032.650 | 10,910.210 |
| *Note:* | •p<0.1; *p<0.05; **p<0.01; ***p<0.001 | | |

As happiness distinguished itself as having a more significant negative relationship than either of the other measures, we repeated our series of control regressions with happiness as the dependent variables to evaluate the resilience of this negative effect. As *Table 7* illustrates, the negative effect on happiness was far more resilient to control variables, maintaining its full statistical significance even after several community-level controls were added, compared with the previously examined, negative effect on psychological richness. However, even with happiness, the negative effect of diversity once again losses its statistical significance when controlling just for individual socioeconomic status (β = -0.310, p = 0.074). As previously

**Table 7**

*Happiness and Diversity Controls Regression*

| | *Dependent variable:* | | | | | | |
|---|---|---|---|---|---|---|---|
| | SWLS | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| ZIP_Diversity_Index | −0.410* | −0.443* | −0.421* | −0.432* | −0.391* | −0.285 | −0.310• |
| | (0.197) | (0.193) | (0.191) | (0.193) | (0.194) | (0.176) | (0.174) |
| ZIP_Median_Household_Income | | 0.00001*** | 0.00001*** | 0.00001*** | 0.00001*** | 0.00000 | |
| | | (0.00000) | (0.00000) | (0.00000) | (0.00000) | (0.00000) | |
| mobility_score | | | 2.984* | 3.258** | 3.049* | 2.164• | |
| | | | (1.171) | (1.259) | (1.260) | (1.133) | |
| ZIP_Population_Density | | | | 0.00000 | 0.00000 | −0.00000 | |
| | | | | (0.00000) | (0.00000) | (0.00000) | |
| ZIP_Total_Population | | | | | −0.00000• | −0.00000 | |
| | | | | | (0.00000) | (0.00000) | |
| demo_SES | | | | | | 0.455*** | 0.461*** |
| | | | | | | (0.017) | (0.017) |
| Constant | 4.396*** | 3.943*** | 3.497*** | 3.457*** | 3.548*** | 1.947*** | 2.288*** |
| | (0.109) | (0.128) | (0.216) | (0.227) | (0.232) | (0.217) | (0.122) |
| Observations | 2,945 | 2,925 | 2,925 | 2,925 | 2,925 | 2,775 | 2,794 |
| Log Likelihood | −5,500.351 | −5,455.466 | −5,451.204 | −5,462.890 | −5,473.909 | −4,885.681 | −4,885.022 |
| Akaike Inf. Crit. | 11,008.700 | 10,920.930 | 10,914.410 | 10,939.780 | 10,963.820 | 9,789.363 | 9,780.044 |
| Bayesian Inf. Crit. | 11,032.650 | 10,950.840 | 10,950.290 | 10,981.650 | 11,011.670 | 9,842.718 | 9,809.720 |

*Note:* •p<0.1; *p<0.05; **p<0.01; ***p<0.001

demonstrated in *Table 3*, SWLS is highly correlated with a participant's SES ($r = 0.469$, $p < 0.001$), and both PRLQ ($r = 0.231$, $p < 0.001$) and MLQ_P ($r = 0.241$, $p < 0.001$) are moderately correlated with SES. Therefore, the negative relationship between community diversity and all three well-being measures seems to be driven primarily by access to individual resources and secondarily by access to communal resources.

### *3.4 White and Non-White Participant Subgroups*

After analyzing the relationship between diversity and all three measures of well-being for the participants as a whole, we divided the participants into the first of the two pairs of subgroups: white and non-white participants. The descriptive statistics and correlational tables for these two subgroups have been provided in *Tables 11-13* within the *Appendix.* We then repeated the multilevel modeling regressions we conducted previously now with both white participants and non-white participants separately to explore whether being within the majority racial group for the country as a whole impacted the manner in which people related to diversity

**Table 8**

*Well-Being Regressions on White vs. Non-White Participants*

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | PRLQ | | SWLS | | MLQ_P | |
| | White | NonWhite | White | NonWhite | White | NonWhite |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| ZIP_Diversity_Index | −0.272• | −0.258 | −0.592* | 0.025 | −0.356 | −0.203 |
| | (0.210) | (0.259) | (0.263) | (0.305) | (0.263) | (0.285) |
| Constant | 5.087*** | 4.917*** | 4.550*** | 4.082*** | 4.693*** | 4.720*** |
| | (0.117) | (0.148) | (0.143) | (0.174) | (0.143) | (0.162) |
| Observations | 1,771 | 1,061 | 1,771 | 1,061 | 1,771 | 1,061 |
| Log Likelihood | −2,812.840 | −1,796.117 | −3,329.851 | −1,969.082 | −3,302.750 | −1,943.603 |
| Akaike Inf. Crit. | 5,633.681 | 3,600.235 | 6,667.703 | 3,946.164 | 6,613.500 | 3,895.207 |
| Bayesian Inf. Crit. | 5,655.598 | 3,620.102 | 6,689.620 | 3,966.032 | 6,635.418 | 3,915.075 |

*Note:* •p<0.1; *p<0.05; **p<0.01; ***p<0.001

in their communities. *Table 9* contains the comparative regressions for all three well-being measures based on whether the participants identified as white.

First, white participants experienced a slightly negative effect of diversity on psychological richness (β = -0.272, p = 0.195), while non-white participants experienced a similar negative effect on psychological richness (β = -0.258, p = 0.319). As this difference between the two is relatively small statistically speaking, white and non-white participants seem to differ little regarding their relation to diversity and psychological richness. Second, white participants once again experienced a slightly negative effect of diversity on meaning (β = -0.356, p = 0.175), while non-white participants again experienced a weaker negative effect on

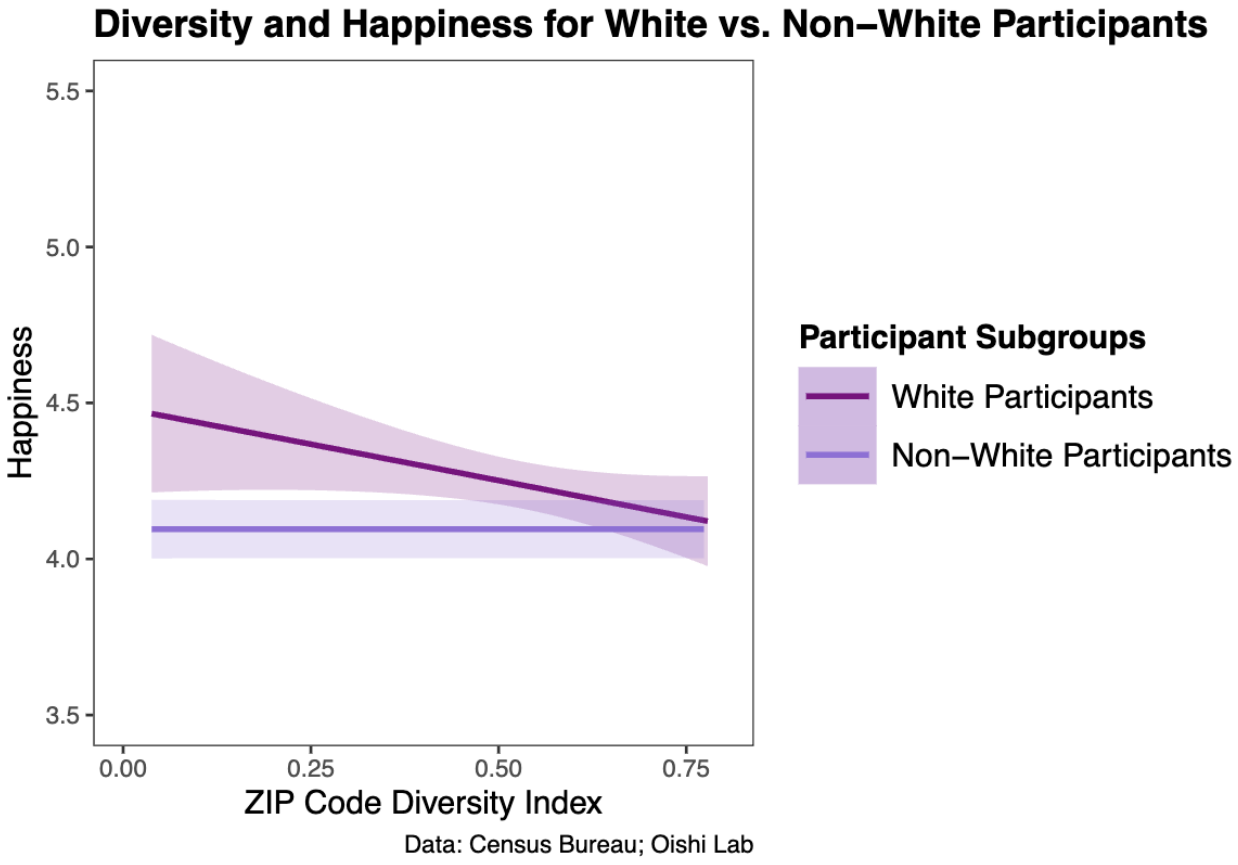


*Figure 3*. Smooth plot comparing the relationships between ZIP Code Racial Diversity Index and Happiness for White and Non-White Participants.

meaning ($\beta = -0.203$, $p = 0.476$). Finally, white participants experienced a very significant negative effect of diversity on happiness ($\beta = -0.592$, $p = 0.024$), while non-white participants actually experienced a slightly positive effect of increased diversity on happiness ($\beta = 0.025$, $p = 0.934$).

In this manner, white participants clearly differ from non-white participants in the manner in which they respond to communal diversity, as they experienced a stronger negative relationship between diversity and all three measures of well-being. In fact, this difference in effect size only increases if one here to remove white identifying multi-racial people from the non-white participant subgroup. Happiness, however, is clearly the component of well-being in which this difference between white participants and non-white participants is most clearly substantial and statistically significant. While the relationships between diversity and all the other well-being measures fail to reach any kind of statistically significance in this analysis, the relationship between diversity and happiness for white participants has both a large effect size and robust statistical significance. Additionally, as both *Figure 3* and *Table 8* illustrate, white and non-white participants do not merely differ in effect size when it comes to happiness, as was the case with the other two metrics, but actually differ in the directionality of the relationship between diversity and happiness. While white participants experienced significant decreases in happiness as diversity increased, non-white participants across a variety of racial identities actually experienced a marginal increase in happiness as the diversity in their community increased. Therefore, this subgroup regression analysis demonstrates both that white and non-white participants differ in their responses to community diversity and that psychological richness, happiness, and meaning differ in how this dynamic affects them.

*3.5 Majority and Minority Participant Subgroups*

Next, in order to explore how participants' identities in their own local community impacted their response to diversity, we divided participants into the second pair of subgroups based on whether they were in the majority racial group within their ZIP Code (such as a Hispanic participant within a majority Hispanic ZIP Code) or within a minority racial group for their ZIP Code (such as a White participant within a majority Black ZIP Code). The descriptive statistics and correlational tables for these two subgroups have once again been provided in the *Appendix* in *Tables 14-16.* We then ran similar multi-level modeling regressions regarding the differing relationships between the Diversity Index and psychological richness, happiness, and meaning for majority participants and minority participants, as we had for white participants, non-white participants, and the whole group. *Table 9* demonstrates these core MLM regressions for all three measures of well-being in these two groups. First, both majority and minority participants experienced a slightly negative effect of diversity on psychological richness (βmajority = -0.176, p = 0.408; βminority = -0.352, p = 0.185). Second, both majority and

**Table 9**

*Well-Being Regressions on Majority vs. Minority Participants*

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | PRLQ | | SWLS | | MLQ_P | |
| | Majority | Minority | Majority | Minority | Majority | Minority |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| ZIP_Diversity_Index | −0.176 | −0.352 | −0.241 | −0.398 | −0.146 | −0.411 |
| | (0.212) | (0.265) | (0.262) | (0.315) | (0.260) | (0.308) |
| Constant | 4.975*** | 5.062*** | 4.352*** | 4.356*** | 4.631*** | 4.763*** |
| | (0.115) | (0.155) | (0.140) | (0.183) | (0.139) | (0.179) |
| Observations | 1,623 | 1,209 | 1,623 | 1,209 | 1,623 | 1,209 |
| Log Likelihood | −2,599.495 | −2,018.305 | −3,040.806 | −2,260.752 | −2,998.860 | −2,249.152 |
| Akaike Inf. Crit. | 5,206.990 | 4,044.609 | 6,089.611 | 4,529.505 | 6,005.720 | 4,506.304 |
| Bayesian Inf. Crit. | 5,228.558 | 4,065.000 | 6,111.179 | 4,549.895 | 6,027.288 | 4,526.694 |

*Note:* •p<0.1; *p<0.05; **p<0.01; ***p<0.001

minority participants experienced a slightly stronger negative effect of diversity on happiness ($\beta_{majority} = -0.241$, $p = 0.358$; $\beta_{minority} = -0.396$, $p = 0.205$). Finally, both majority and minority again experienced a negative effect of diversity on meaning but with minority participants experiencing this effect more strongly ($\beta_{majority} = -0.146$, $p = 0.576$; $\beta_{minority} = -0.411$, $p = 0.181$).

Therefore, both participants in the majority and in the minority experienced a negative relationship between diversity and all three well-beings, yet in every case these negative effects lacked statistical significance. Based on the previous analysis of white and non-white participants, these mixed, non-significant results for participants in the majority and minority are not entirely surprising. In those previous results, white participants had a more negative reaction to increasing diversity, while non-white participants had more of a neutral to positive reaction to community-level diversity. Conceptually, it makes sense that some aspects of these patterns for white vs. non-white participants would continue, regardless of whether the participants were in the majority or minority for their specific ZIP Code. Therefore, the differing reactions of the white and non-white participants in each of these subgroups is likely causing the more mixed results and reduced statistical significance when compared to either the two previous subgroups or the participant group as a whole. In a similar manner, the slightly stronger negative effects for minority participants are probably mostly driven by the white participants and their reactions to the heightened diversity of the conditions in that subgroup.

While a simple regression analysis for these two subgroups does not produce new results of much significance, running an interaction regression on majority versus minority participants

does provide some valuable insight, particularly regarding the previously mentioned interaction between income and diversity. *Table 10* depicts the interaction effect between the Diversity Index and ZIP Code median household income on psychological richness in these two subgroups. When running an interaction regression with income for all participants, the individual diversity effect is positive (β = 0.306, p = 0.424), the individual income effect is positive (β = 0.00001, p = 0.006), and the interaction effect is actually negative and approaching significance (β = -0.00001, p = 0.083). This distinct negative interaction effect of income and diversity, however, becomes more clearly visible when dividing participants based on whether they are in the majority or minority for their ZIP Code. For majority participants, the individual diversity effect is once again positive (β = 0.787, p = 0.125), the individual income effect is

**Table 10**

*Well-Being Regressions on Majority vs. Minority Participants*

| | *Dependent variable:* | | |
|---|---|---|---|
| | PRLQ | | |
| | All | Majority | Minority |
| | (1) | (2) | (3) |
| ZIP_Diversity_Index | 0.306 | 0.787 | −0.468 |
| | (0.383) | (0.513) | (0.635) |
| ZIP_Median_Household_Income | 0.00001** | 0.00001*** | −0.000 |
| | (0.00000) | (0.00000) | (0.00001) |
| ZIP_Diversity_Index:ZIP_Median_Household_Income | −0.00001• | −0.00001* | 0.00000 |
| | (0.00000) | (0.00001) | (0.00001) |
| Constant | 4.513*** | 4.132*** | 5.082*** |
| | (0.207) | (0.267) | (0.360) |
| Observations | 2,914 | 1,609 | 1,203 |
| Log Likelihood | −4,763.136 | −2,589.116 | −2,031.291 |
| Akaike Inf. Crit. | 9,538.272 | 5,190.232 | 4,074.582 |
| Bayesian Inf. Crit. | 9,574.136 | 5,222.532 | 4,105.137 |
| *Note:* | | | •p<0.1; *p<0.05; **p<0.01; ***p<0.001 |

positive (β = 0.00001, p < 0.001), and the interaction effect is negative but now with robust statistical significance (β = -0.00001, p = 0.048). For minority participants, on the other hand, the individual diversity effect is now negative (β = -0.468, p = 0.461), the individual income effect is negative (β = 0.00001, p = 0.999), and the interaction effect is now actually slightly positive (β = 0.000001, p = 0.900) with all effects lacking significance.

This comparative regression analysis demonstrates that this negative interaction effect of income and diversity on psychological richness is largely being driven by participants who are the majority racial group in their community. As *Figure 4* visually depicts, majority participants experience a sharp decline in psychological richness as diversity increases when they live in ZIP Codes with median household incomes one standard deviation or more greater than the mean median household income. Majority participants living at the mean of median household income, however, only experience a moderate decrease in psychological richness, and majority

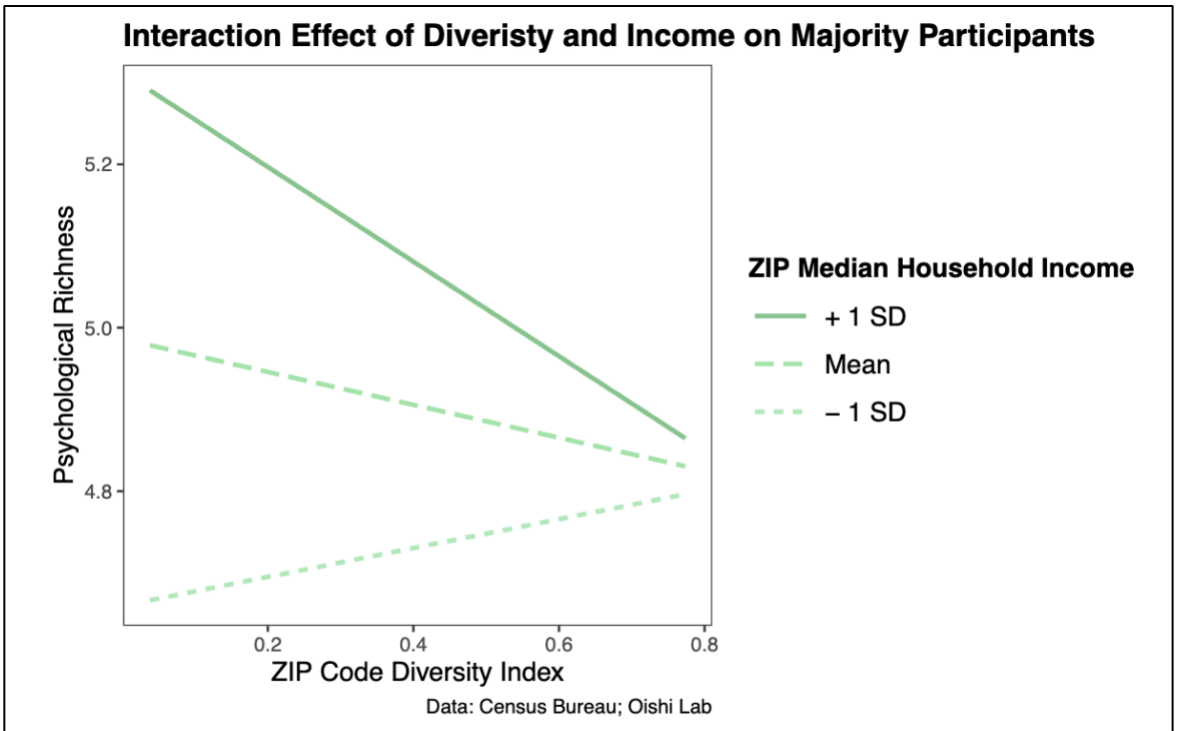


*Figure 4*. Plot demonstrating the interaction effect of Diveristy and Income on Participants in the Majority.

participants living in areas below the mean actual experience an increase in psychological richness as diversity increases.

Performing a slope analysis on this interaction between diversity and income then provides greater insight into the types of communities that are primarily driving the statistical significance of this effect. For ZIP Codes at the mean income (M = $81,598.59) and below, the interaction effect for majority participants lacks statistical significance (-1 SD: $\beta = 0.177$, $p = 0.504$; Mean: $\beta = -0.201$, $p = .344$), and only once median household income is one standard deviation over the mean does the interaction effect gain full, robust statistical significance (+1 SD: $\beta = 0.579$, $p = 0.058$). In fact, while ZIP Code median income ranges from $14,142 to $250,001, only those in the income range $119,280.97 to $250,001 has a robust, statistically significant negative effect, and yet this effect is strong enough that it drives statistical significance for the whole interaction effect (as depicted in *Figure 5* of the *Appendix*). Therefore, high income, majoritarian communities seem especially resistant to increasing diversity. Based on the previous correlation analysis, a decreasing sense of shared reality and community trust may play a role in this distinct, negative interaction effect for majority communities, as shared reality and trust are both positively correlated with diversity for minority communities ($r = 0.013$, $p = 0.765$; $r = 0.005$, $p = 0.751$) but are negatively correlated with diversity for majority communities ($r = -0.083$, $p = 0.004$; $r = -0.098$, $p < 0.001$).

## 4. Discussion

### *4.1 The Complicated Relationship between ZIP Code-level Diversity and Psychological Richness*

At the beginning of this research project, we began with the core question of how community levels of racial diversity impacted individual rates of psychological richness (*Q1*).

Based on the current literature, psychological richness's connection to new perspectives, and its resistance to challenges, we predicted that living within a racially diverse ZIP Code would increase people's rates of psychological richness (*H1*). In order to test this hypothesis, we ran a large-scale survey with adult participants from cities across the U.S. where participants were asked questions about their communities, their personal traits, their subjective sense of well-being based on all three primary measures, and their basic demographic information. Then using U.S. Census data, participants were also assigned scores based on the diversity levels, median household income, and other vital features of the ZIP Code in which they reported living. Finally, we ran correlational analyses, regression analyses, and interaction analyses on the relationship between the community racial diversity, participants' rates of psychological richness, and the other key variables of interest.

Based on this initial analysis of the overall effect of diversity on psychological richness, we discovered three primary points of interest regarding our initial, core research question. First, the result of this first stage of research seemed to oppose *H1*, that predicted increased communal diversity would lead to higher rates of psychological richness. While we had expected that living within a racially diverse community would facilitate the kind of new and perspective-changing encounters that are associated with psychological richness, the participants in this study simply did not evince this sort of enriching effect. In fact, the results of our study demonstrated a slight decrease in psychological richness as diversity increased (*Table 3* and *4*). This negative effect on psychological richness failed to reach full statistical significance, so it is important not to draw too many definitive conclusions on the relationship between diversity and psychological richness. However, these results clearly do not support the initial prediction that increased

diversity would produce tangible, measurable benefits for psychological richness when examining community-level dynamics.

Secondly, the results of our study also seem to suggest that examining the impact of racial diversity on psychological richness at the ZIP Code level actually might not be the best approach for providing insight into this complicated, multifaceted relationship. The statistical significance of the relationship between diversity and PRLQ was already fairly weak to begin with, but even this degree of significance is eliminated when controlling for other communal variables, such as median household income, mobility, and population size. In fact, simply controlling for a participant's individual socioeconomic status single-handedly eliminates the significance of the negative relationship of community-level diversity on psychological richness, meaning, and happiness, to a lesser extent. In this manner, our control analysis (as seen in *Table 4*) provides some valuable insight into the factors that have the strongest effect on psychological richness at the ZIP Code level. Factors such as one's ability to easily move, live in a community with considerable collective resources, and most importantly have access to personal financial resources simply seem to play a far more significant role in shaping a person's sense of how interesting and experientially rich their life is. This makes sense conceptually, as simply living in the same area as a lot of racially diverse people does not ensure one will build many rich, perspective-changing relationships with those people. Additionally, many diverse, non-white communities in the U.S. context have historically been denied access to the sort of mobility, community investment, and financial resources that substantially impact psychological richness at the ZIP Code level. Because of the complicated manner in which these community-level variables interact, our research suggests that it may be more enlightening to examine the effects

of diversity in smaller-scale interactions or social networks, if one wishes to isolate the direct effect of diversity exposure on psychological richness.

Finally, the initial results of this study also seem to suggest that the types of relationships people have with the diversity in their community may change how said diversity impacts their psychological richness. Even in his challenging work on the "constrict theory," Putnam (2007) suggested that racial diversity's negative effect on overall communal trust and social capital may be influenced by the degree of segregation in the U.S. and that this effect may change as communities become more integrated and accustomed to each other. In order to test this integration prediction, we attempted to use the UC Berkeley Othering and Belonging Institute's measurement of segregation and integration as an interaction variable in conjunction with the Diversity Index ("Most to Least Segregated Cities in 2020"). However, because so few U.S. Cities reach the threshold of racial integration, it is quite difficult to produce any meaningful results of statistical significance from this line of analysis. Despite these limitations, the interaction effect between diversity and shared reality (*Table 5*) does seem to imply that the way one relates to the diversity in one's community may change how said diversity impacts well-being. In that case, when participants felt a strong sense of shared reality with those in their community, then increasing levels of diversity produced increased psychological richness. One could interpret these results to mean that if people have a strong sense of connection with diverse people in their community and thus feel some sense of shared foundational values with them, then those people are open to receiving the enriching benefits of those diverse connections. Based on these results, therefore, it would be valuable to conduct additional research on the types of relationship people have with the racially diverse people in their social network, such as how

close they feel to those people or how often they discuss new perspectives with them, to determine how these elements of social life may impact their psychological richness.

*4.2 The Differences between Psychological Richness and Happiness*

Our second primary question at the core of this research project focused on how psychological richness compared to happiness and meaning, and whether the relationship between diversity and psychological richness would differ from its relationships with the other two measures of well-being (*Q2*). Because psychological richness is more resilient to challenges and less dependent on stability than the other two measures, we predicted that the relationship between community-level diversity and psychological richness would in fact differ from that of happiness or meaning. To test this second prediction, we then ran a comparative regression analysis for all three measures of well-being before repeating the previous control and interaction analysis for both happiness and meaning.

Based on this second round of analysis, our study's results broadly supported *H2* that there are differences in how psychological richness responds to community-racial diversity when compared to the other two measures of well-being, especially happiness. When looking at well-being more broadly, happiness as defined by SWLS appears to have a distinctly negative relationship with community-level racial diversity. Even though all three measures have some degree of negative correlation with diversity (*Table 3*), happiness is the only measure to demonstrate a truly statistically significant decrease as diversity increases with an effect size that is resistant to a variety of community-level controls (*Tables 6* and *7*). Therefore, despite being strongly intercorrelated, the three measures do have enough differences in their characteristics

and causes to respond to communal diversity and its related contexts in slightly different manners.

In this manner, our results reaffirmed the specific findings of Seder and Oishi (2009) regarding diversity and happiness while also providing insight into the complicated dynamics of well-being more broadly. Increased racial diversity, both within one's friend group and within one's ZIP Code-level community, does appear to specifically reduce happiness and correlate with negative well-being trends overall. Psychological richness and meaning, however, do meaningfully differ from happiness in having a far more complex relationship with diversity, where the negative relationships seem far more related to other community factors such as mobility or individual factors such as socioeconomic status. In fact, even the negative relationship between diversity and happiness seems to be related to the effect of differences in socioeconomic status (*Table 7).*

Therefore, one potential explanation for this reduction in happiness, psychological richness, and meaning, is that it may be caused not by the diversity exposure itself but by the historic disinvestment in people and communities of color that has led diverse communities to be comparatively resource depleted. Such a cause would at least partially explain why happiness differs so clearly from psychological richness and meaning in its relationship with diversity, as happiness is far more correlated with SES than either of the other two (*Table 2*). While happiness is strongly related to the stability and comfort financial security provides, psychological richness and meaning are both to some degree able to integrate challenges and changes into their sense and conception of well-being. Overall, therefore, the second part of our findings indicate psychological richness differs, especially from happiness, in having a more complex relationship

with diversity and in being more resilient to the communal challenges often associated with diversity, such as historic disinvestment.

### *4.3 The Effect of Whiteness on Diversity and Well-Being*

After addressing psychological richness and diversity for the participants as a whole, our final core research question regarded how an individual's own racial identity may impact how one relates to community-level racial diversity and subjective well-being. In previous research on diversity and well-being, Whiteness has often played a substantial role in magnifying the perceived benefits of homogeneity and the perceived challenges of diversity. For example, White/European American college students demonstrated greater life satisfaction when maintaining a racially homogenous friend group, but nonwhite/non-European American college students did not seem to demonstrate this same strong effect (Seder & Oishi, 2009). Based on results such as these, one could reasonably predict that white participants would be more resistant to community-level diversity than non-white participants in a manner that may be reflected in their subjective well-being scores. However, the previous research did not elucidate whether these effects were driven by being white specifically or by being in the majority racial group within that particular community. Therefore, to address this final research question related to identity, we decided to divide the participants into two sets of subgroups for analysis: white versus non-white participants and majority versus minority participants. We then ran the initial regression, control, and interaction analyses again for all four of the new subgroups to explore whether the effect of communal racial diversity where more affected by Whiteness and broader racial dynamics or by the specific racial context in one's immediate community.

Our subgroup analysis first demonstrated that white participants experienced a particularly strong decrease in happiness as diversity increased, especially when compared to non-white participants (*Table* 8). Non-white participants did not experience a statistically significant reaction to diversity in any of the three well-being categories. In fact, non-white participants actually experienced a slight increase in happiness as diversity in their community increased. White participants, on the other hand, experienced stronger negative effects of diversity on all three measures of well-being and demonstrated a particularly significant decrease in happiness. This change in the directionality of the effect on happiness is particularly notable because it indicates that the negative relationship between diversity and happiness for the participants as a whole is likely caused mostly by the reaction of white participants. In this manner, the results of our study serve to fully replicate the primary results of the previous Seder and Oishi (2009) but this time within a large-scale ZIP Code-level community instead of within a person's online friendship network. Based on the results of both of these studies, therefore, we can reasonably conclude that both white adults and college-aged students experience a decrease in happiness as community-level diversity increases both within broader geographic communities and within more direct online social networks.

These different reactions to diversity between white and non-white participants are likely are likely once again caused by the way Whiteness in the United States context is related to both community resources and community trust. For white participants (*Table 12*), community diversity is significantly negatively correlated with SES ($r = -0.026$, $p = 0.010$) and community trust ($r = -0.064$, $p < 0.001$), while only being slightly positively correlated with ZIP Code median household income ($r = 0.009$, $p < 0.001$). For non-white participants (*Table 13*), however, community diversity was strongly positively correlated with all three of SES (r =

0.049, $p = 0.138$), community trust ($r = 0.014$, $p = 0.535$), and median household income ($r = 0.166$, $p < 0.001$). In this manner, non-white citizens seem to gain greater access to individual and communal resources by living in more diverse community, perhaps by gaining access to resources traditionally concentrated in white U.S. communities. Additionally, as those outside of the dominant racial group nationally, non-white participants seem to view increased racial diversity as increasing their sense of trust and communal belonging, while white participants seem to view that increased presence of racial others as a threat to community safety and values. Overall, therefore, because of white citizens' greater antipathy to diversity and the life satisfaction score's greater sensitivity to changes in income and trust, happiness has a uniquely negative relationship with diversity for white participants.

Psychological richness and meaning, however, continue to have a much more complex relationship with racial diversity than happiness, for both white and non-white participants. As previously mentioned, psychological richness and meaning have moderate, nonsignificant, negative relationships with diversity for white participants, non-white participants, and all other participant subgroups. While these negative effects may be due to statistical noise or sample irregularities as they lack significance, the consistency of this pattern across group is notable. As psychological richness decreases with diversity for non-white participants despite the simultaneous increases in income, SES, and community trust, the same factors cannot be causing this reduction in richness as the previous reduction in happiness. One alternative explanation is that decreased mobility is causing this change in psychological richness, as mobility is negatively correlated with diversity for both white and non-white participants. This explanation fits with our conceptual understanding of psychological richness, as an inability to move or travel could leave someone feeling deprived of the interesting and perspective-changing experiences often

associated with a psychologically rich life. Additionally, some of the negative effects on psychological richness and meaning may also be caused by diversity's negative impact on happiness, particularly for white participants, due to the intercorrelation of the three well-being measures.

Overall, these findings on participants' racial identities demonstrate that white participants are more resistant to increased diversity, as evidence by their clearly impacted happiness scores, but that psychological richness have a far more complicated relationship both with diversity and Whiteness in the U.S. context.

### *4.4 The Complex Majoritarian Impact on Diversity and Psychological Richness*

Finally, after completing our analysis of white versus non-white participants, we evaluated the second pair of subgroups, participants in the racial majority and in the racial minority for their ZIP Codes, in order to evaluate how community-level factors related to diversity and identity influence well-being. In this stage of analysis, we ran regression, control, and interaction analyses one last time, and while the direct effects for majority versus minority participants were not as statistically significant as for the white versus non-white participants, the results still provide meaningful insight into how diversity impacts well-being. First, the very fact that diversity's effects on well-being were far more muddled and less significant is revealing regarding the level at which race impacts communities in the U.S. context. While one might assume that the racial dynamics in people's own communities would have a more tangible effect on their individual well-being, the racial dynamics at the societal level had a far greater impact in this study than the racial dynamics at the more narrow, local level.

At the ZIP Code-level, participants in the majority did not seem to universally gain the benefits of homogeneity, as white participants had at the previous level of analysis, and participants in the minority did not seem to universally adopt the more open posture to diversity as non-white participants had. In this manner, the results of this study seem to indicate that the national dynamics in the US, where the white racial majority has a historic connection to resource allocation and the dominant social structures, trump majority or minority status within a smaller community when it comes to how individuals conceive of diversity and well-being.

Additionally, the interaction analysis of majority and minority participants also provides distinct insight into the types of communities that are particularly resistant to increased diversity. When initially evaluating the interaction effect between diversity and income on psychological richness, results did not seem especially intuitive, as we assumed higher income, diverse areas would be more situated to capitalize on the enriching benefits of diversity while limiting the negative effects of historic disinvestment. However, when this negative interaction effect was demonstrated to be caused largely by majority participants, it provided valuable, missing information for interpreting this complex dynamic (*Tables 15-16)*. We know this negative interaction effect is a community-level, not an individual-level phenomena, because personal SES does not demonstrate the same negative interaction effect as ZIP Code median household income. Therefore, these interaction regression results indicate that there is something unique about wealthy, majoritarian communities that make them more resistant to diversity that communities with any of these attributes alone.

One potentially informative link between these variables is their connection to power and community boundary-setting. Both high-income and majoritarian communities are commonly associated with sedimented financial or cultural power, and the structures of such communities

often make them resistant to outsiders and threats of change. Additionally, those in high-income, majoritarian communities are often far less likely to need to interact with people outside of their community or different from themselves. Therefore, the combined effects of these financial and social structures in high-income majoritarian communities may lead them to be more protective of their group identity and shared reality and thus prone to experience a negative reaction to diversity.

If this conceptual framework is accurate, shared reality and openness are two variables that are likely to play vital roles in this negative interaction effect between income and diversity on majority communities. First, majority and minority participants foster a sense of shared reality differently. Overall, majority participants demonstrate a negative correlation between diversity and shared reality (*Table 15*), while minority participants contrastingly demonstrate a positive correlation between diversity and shared reality (*Table 16*). Therefore, one reason high-income majoritarian communities experience a sharper decrease in psychological richness may be because their heightened communal rigidity leads to a greater sense of lost shared reality when changes in the community do occur. In this manner, these differences in shared reality and trust between majority and minority participants actually provide a minor challenge to Putnam's (2007) constrict theory of diversity as well. While Putnam found that increased diversity leads to loss of community trust across the board, our study found that the overall loss in community trust actually hides the fact that this pattern was not repeated among all racial identities and subgroups. In fact, increasing diversity actually increased shared reality and community trust for non-white and minority participants. Therefore, while decreased shared reality may play a significant role in why high-income, majoritarian communities may be especially sensitive to

racial diversity, it is also important to note that not all communities and identities share this response.

Secondly, variations in participant openness might also help explain why the interaction effect between income and diversity has a particularly strong impact on psychological richness in majoritarian communities. Few other variables exhibit the same unique interaction pattern from income and diversity as psychological richness: where both main effects are positive, but the interaction effect is negative. In fact, openness is the only variable among those that are conceptually relevant that displays a similar interaction pattern. Similar to psychological richness, openness demonstrates a positive effect from diversity, a nearly significant positive effect from median household income, and a nearly significant negative interaction effect between diversity and income, which increases in significance amongst high-income, majoritarian communities (*Table 17* in the *Appendix*). Since psychological richness and openness are highly correlated ($r = 0.468$, $p < .001$) and both involve receptivity to new perspectives and experiences, the similarity in their interaction patterns suggests that changes in one might directly influence changes in the other or that both might be affected by a common underlying factor (Soto & John, 2017). Although this pattern alone does not definitively prove that openness is the mediating variable explaining the decrease in psychological richness in high-income majoritarian communities, the shared traits and patterns between the two variables imply that whatever characteristic of these communities makes them sensitive to increased diversity in regards to psychological richness might also be causing their reduced openness.

If the previously suggested rigidity of said communities is leading to reduced openness, this dynamic would also explain why psychological richness, rather than happiness or meaning, experiences this specific negative interaction effect between diversity and income. A lack of

openness might prevent people from engaging in the type of new, perspective-changing experiences necessary to enhance psychological richness. Therefore, if high-income, majoritarian communities rigidly closed themselves off in the face increased diversity, their community members might experience decreased psychological richness, even if happiness and meaning remain unchanged. Overall, while further research is needed to definitively determine why high-income, majority communities exhibit this unique effect on psychological richness, these final findings do offer valuable insights into the potential features shaping why specific communities respond differently to diversity and thus experience different changes in individual well-being.

## 5. Limitations and Further Directions

Despite its strengths as a large-scale, representative survey study addressing well-being in a multifaceted manner, several limitations in the design and scope of our study should be addressed in additional research. First, despite having a very representative sample, with participants from all 50 U.S. states and over 100 U.S. cities, this study did focus solely on the effects of diversity within a United States context. The United States has a fairly distinct racial system and history when compared to many other countries and regions in the world, due to the legacies of chattel slavery, racial segregation, and institutional racism. Even many of the categories used here to define race such as “White” or “Asian American” were developed particularly within the United States and do not fit as cleanly in other contexts. In fact, the U.S. Census categories of race and ethnicity used in this project are often vague, clunky, or insufficient for fully describing racial identities even within the U.S. context and therefore are consistently debated and revised.

Therefore, the results of this study on diversity and well-being should be interpreted as applying specifically to the U.S. context and not necessarily reflecting the impact of diversity more broadly. Many of the negative effects observed in this study may be influenced by the specific history of disinvestment from community of color in the U.S. context and the legacy of numerous attempts to "protect" white communities from "racial threat." Due to differing cultural conceptions and histories regarding race, other regions in the world may experience very different dynamics related to racial diversity and subjective well-being. For example, countries where greater diversity does not lead to reduced socioeconomic status may not experience similar declines in well-being, or cultures with different social divisions may experience similar effects but related to community demographics such as religion, class, or immigration status, rather than race. Conducting similar studies on diversity and psychological richness within more diverse cultural contexts internationally would thus be very valuable for understanding whether the results of this study reflect universal features of diversity and its impacts on well-being or whether they simply reflect phenomena specific to the U.S. context.

Second, this study is also slightly limited by focusing solely on diversity within the contexts of U.S. *cities*, instead of including participants from a broader spectrum of urban and rural environments. While rural communities tend to remain quite similar in their static, low rates of diversity, urban and suburban areas tend to exhibit a greater, varying range of diversity, segregation, and integration compared to each other. Therefore, urban and suburban communities are effective contexts for exploring the effects of diversity on psychological richness, as they are the communities where diversity is most likely to have the greatest effect. In this manner, our study was also designed to more effectively isolate the specific effects of community-level diversity on psychological richness from the potentially confounding effects of the urban-rural

divide. However, it is possible that the effects of diversity demonstrated in this study may actually be specific to more urban, higher-diversity contexts. For example, diversity could potentially relate to well-being in a nonlinear manner, in which homogenous and low-mobility rural areas are lowest in psychological richness, highly diverse and mobile urban areas are higher in psychological richness, and even more mobile but less diverse suburban communities are the highest in psychological richness. This study may offer some evidence for this potential mobile-suburban hypothesis, as mobility has a negative correlation with diversity amongst these participants ($r = -0.059$, $p < 0.001$). Therefore, in order to address this potential limitation, it would be valuable to conduct follow-up research that includes additional participants from more rural and lower diversity communities.

Finally, this study is somewhat limited by the manner in which it measures both well-being and diversity. Since this study relies on self-reporting to quantify psychological richness, happiness, and meaning, there is a significant degree of subjectivity in how this study defines and measures well-being. Subjective self-reporting is commonly sued for this type of well-being research, as psychological richness, happiness, and meaning are all, themselves, subjectively constructed values dependent on cultural context and personal value judgements. However, this reliance on subjective self-reporting could potentially lead participants to emphasize more vague, subjective threats to well-being, such as shared reality, over more objective challenges, such as a lack of diverse cultural resources. Therefore, it may be beneficial to add additional objective measures of well-being or more in-depth quantitative questions asking participants directly how diversity and other factors impacted their well-being.

While the subjective nature of self-reporting provides a minor limitation, the results of this study are more substantially limited based on the scale at which they measure racial diversity

and its effects. In this project, we were interested in how larger-scale community-level diversity related to individual psychological richness and well-being both directly through diversity exposure and indirectly through community dynamics and culture. Therefore, we chose to examine how ZIP Code-level patterns related to individual changes in psychological richness to address this communal effect, rather asking questions directly about the diversity in participants' own social and friendship networks. The strength and the consistency of the results for our happiness, particularly for white participants, demonstrated this kind of broader community-level effect of increased diversity on well-being. For psychological richness, however, the results demonstrated a far more complex portrayal, which seemed to suggest the need to research community diversity at a different level in order to more clearly determine how diversity exposure impacts psychological richness.

Based on the results of this study, we have two primary suggestions for further research on diversity and psychological richness. First, further studies should include some way of measuring the degree to which participants are directly engaging with diversity in their communities, as simply living near racial diversity does not necessarily lead to the type of enriching encounters associated with psychological richness. In this manner, a research study based on the degree of diversity in one's friendship or social network might be more effective at isolating the effect of diversity exposure on psychological richness. Second, including some measure of the types of connections people have with the diverse relationships in their own lives may also benefit further research on psychological richness and diversity. As *Table 5* demonstrates, having a positive relationship or a sense of shared values may enable participants to experience the benefits of diversity, by increasing their sense of openness or decreasing their sense of shared threat. Additionally, as indicated by the previous study on psychological richness

and studying abroad, increases in psychological richness may not be caused by diverse friendships themselves but rather by the perspective-changing activities and conversations people engage in with these friends (Oishi et al., 2021). To address how communal diversity shapes psychological richness, therefore, future studies should consider including questions regarding the how close participants people to their friends of other racial groups, what types of topics they discuss with these friends, and what kind of new experiences they engage in with these friends.

## 6. Conclusion

As racial diversity has increased in the modern world, many communities have experienced first-hand the complex, often conflicting reactions people have when living in greater proximity to people of diverse backgrounds and encountering changes to traditional social structures. The history of social science research on diversity reflects this complexity, with different studies demonstrating the benefits and the challenges of increased racial diversity in equal measure. The results of this research project on ZIP Code-level racial diversity and psychological richness fall well within this long tradition of seeking to promote greater racial justice and integration by providing a clear-eyed look at the complex manner in which racial diversity relates to communal and individual well-being. In this manner, this research project attempted to provide not only an important scholarly contribution to the literature on psychological richness but also answer the call of fellow diversity researchers to utilize the tools of socio-ecological psychology "not only in attempts to promote coping among those who are marginalized, but to understand the ways that positive characteristics and experiences might help reduce inequality" (Sanders et al., 2021, p. 9).

This research project achieved our twin aims of providing both scholarly and practical contributions by replicating previous findings on happiness's distinct sensitivity to diversity even in large communities, by demonstrating how Whiteness and access to resources shape the impact of diversity, and by indicating psychological richness's greater resilience to the types of challenges commonly associated with diversity. Finally, despite some of its limitations, this project also encourages further valuable research by demonstrating the need to address whether changes in psychological richness are more substantially impacted by the racial diversity in people's direct social networks and the types of relationships they form with these diverse community members, rather than the large-scale racial demographics in their broader communities.

# Appendix

**Table 11**

*Descriptive statistics for key variables for White vs. Non-White Participants.*

| Variable | White_mean | NonWhite_mean | White_sd | NonWhite_sd | White_n | NonWhite_n |
|---|---|---|---|---|---|---|
| PRLQ | 4.94 | 4.77 | 1.19 | 1.31 | 1,771.00 | 1,061.00 |
| SWLS | 4.24 | 4.10 | 1.59 | 1.55 | 1,771.00 | 1,061.00 |
| MLQ_P | 4.50 | 4.61 | 1.56 | 1.51 | 1,771.00 | 1,061.00 |
| ZIP_Diversity_Index | 0.52 | 0.55 | 0.14 | 0.16 | 1,771.00 | 1,061.00 |
| ZIP_Median_Household_Income | 78,520.48 | 78,245.01 | 30,732.45 | 33,570.46 | 1,757.00 | 1,055.00 |
| mobility_score | 0.15 | 0.14 | 0.02 | 0.03 | 1,771.00 | 1,061.00 |
| walkscore_walkscore | 47.04 | 51.33 | 15.79 | 17.38 | 1,771.00 | 1,061.00 |
| Rough_Integration_Score | 0.77 | 0.74 | 0.14 | 0.16 | 1,659.00 | 996.00 |
| ZIP_Total_Population | 35,086.35 | 42,285.28 | 18,842.24 | 21,091.36 | 1,771.00 | 1,061.00 |
| ZIP_Population_Density | 6,218.79 | 8,591.87 | 10,197.69 | 12,905.38 | 1,771.00 | 1,061.00 |
| demo_SES | 4.50 | 4.41 | 1.62 | 1.54 | 1,740.00 | 1,049.00 |
| SR_G | 3.84 | 3.82 | 1.08 | 1.15 | 1,771.00 | 1,061.00 |
| col.efficacy_trust | 3.26 | 3.19 | 0.78 | 0.78 | 1,771.00 | 1,061.00 |

**Table 12**

*Spearman Correlation Matrix for White Participants.*

| | PRLQ | SWLS | MLQ_P | Div_Index | Med_Income | Mobility | Total_Pop | Density | Demo_SES | Shared_Reality | Trust |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRLQ | 1.000 | 0.496 | 0.497 | -0.037 | 0.054 | 0.044 | -0.040 | -0.004 | 0.231 | 0.193 | 0.240 |
| SWLS | 0.496 | 1.000 | 0.609 | -0.048 | 0.126 | 0.044 | -0.034 | -0.038 | 0.469 | 0.278 | 0.295 |
| MLQ_P | 0.497 | 0.609 | 1.000 | -0.026 | 0.047 | 0.027 | -0.009 | -0.032 | 0.241 | 0.200 | 0.224 |
| Div_Index | -0.037 | -0.048 | -0.026 | 1.000 | 0.009 | -0.059 | 0.190 | 0.185 | -0.026 | -0.041 | -0.064 |
| Med_Income | 0.054 | 0.126 | 0.047 | 0.009 | 1.000 | -0.014 | 0.168 | -0.044 | 0.210 | 0.062 | 0.132 |
| Mobility | 0.044 | 0.044 | 0.027 | -0.059 | -0.014 | 1.000 | -0.094 | -0.375 | 0.008 | -0.025 | 0.077 |
| Total_Pop | -0.040 | -0.034 | -0.009 | 0.190 | 0.168 | -0.094 | 1.000 | 0.109 | -0.008 | -0.037 | -0.040 |
| Density | -0.004 | -0.038 | -0.032 | 0.185 | -0.044 | -0.375 | 0.109 | 1.000 | 0.009 | 0.037 | -0.044 |
| Demo_SES | 0.231 | 0.469 | 0.241 | -0.026 | 0.210 | 0.008 | -0.008 | 0.009 | 1.000 | 0.143 | 0.201 |
| Shared_Reality | 0.193 | 0.278 | 0.200 | -0.041 | 0.062 | -0.025 | -0.037 | 0.037 | 0.143 | 1.000 | 0.466 |
| Trust | 0.240 | 0.295 | 0.224 | -0.064 | 0.132 | 0.077 | -0.040 | -0.044 | 0.201 | 0.466 | 1.000 |

**Table 13**

*Spearman Correlation Matrix for Non-White Participants.*

| | PRLQ | SWLS | MLQ_P | Div_Index | Med_Income | Mobility | Total_Pop | Density | Demo_SES | Shared_Reality | Trust |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRLQ | 1.000 | 0.518 | 0.516 | -0.050 | 0.046 | 0.082 | -0.055 | -0.027 | 0.264 | 0.212 | 0.236 |
| SWLS | 0.518 | 1.000 | 0.589 | -0.016 | 0.150 | 0.049 | 0.019 | 0.013 | 0.456 | 0.295 | 0.268 |
| MLQ_P | 0.516 | 0.589 | 1.000 | -0.036 | 0.045 | 0.065 | 0.035 | -0.016 | 0.213 | 0.232 | 0.245 |
| Div_Index | -0.050 | -0.016 | -0.036 | 1.000 | 0.166 | -0.018 | 0.079 | 0.105 | 0.049 | 0.000 | 0.014 |
| Med_Income | 0.046 | 0.150 | 0.045 | 0.166 | 1.000 | -0.040 | 0.185 | -0.017 | 0.251 | 0.040 | 0.137 |
| Mobility | 0.082 | 0.049 | 0.065 | -0.018 | -0.040 | 1.000 | -0.153 | -0.440 | 0.035 | -0.007 | 0.078 |
| Total_Pop | -0.055 | 0.019 | 0.035 | 0.079 | 0.185 | -0.153 | 1.000 | 0.138 | 0.033 | -0.021 | -0.014 |
| Density | -0.027 | 0.013 | -0.016 | 0.105 | -0.017 | -0.440 | 0.138 | 1.000 | 0.038 | 0.058 | -0.034 |
| Demo_SES | 0.264 | 0.456 | 0.213 | 0.049 | 0.251 | 0.035 | 0.033 | 0.038 | 1.000 | 0.170 | 0.222 |
| Shared_Reality | 0.212 | 0.295 | 0.232 | 0.000 | 0.040 | -0.007 | -0.021 | 0.058 | 0.170 | 1.000 | 0.431 |
| Trust | 0.236 | 0.268 | 0.245 | 0.014 | 0.137 | 0.078 | -0.014 | -0.034 | 0.222 | 0.431 | 1.000 |

**Table 14**

*Descriptive statistics for key variables for Particiapnts in the Majority vs. Minority.*

| Variable | Majority_mean | Minority_mean | Majority_sd | Minority_sd | Majority_n | Minority_n |
|---|---|---|---|---|---|---|
| PRLQ | 4.89 | 4.86 | 1.20 | 1.29 | 1,623.00 | 1,209.00 |
| SWLS | 4.23 | 4.13 | 1.57 | 1.57 | 1,623.00 | 1,209.00 |
| MLQ_P | 4.55 | 4.53 | 1.53 | 1.55 | 1,623.00 | 1,209.00 |
| ZIP_Diversity_Index | 0.51 | 0.56 | 0.15 | 0.15 | 1,623.00 | 1,209.00 |
| ZIP_Median_Household_Income | 81,598.59 | 74,161.96 | 31,194.08 | 32,165.74 | 1,609.00 | 1,203.00 |
| mobility_score | 0.15 | 0.14 | 0.03 | 0.02 | 1,623.00 | 1,209.00 |
| walkscore_walkscore | 48.16 | 49.31 | 16.44 | 16.63 | 1,623.00 | 1,209.00 |
| Rough_Integration_Score | 0.77 | 0.74 | 0.14 | 0.16 | 1,502.00 | 1,153.00 |
| ZIP_Total_Population | 35,549.88 | 40,781.76 | 18,654.94 | 21,355.01 | 1,623.00 | 1,209.00 |
| ZIP_Population_Density | 6,706.66 | 7,646.43 | 10,890.07 | 11,910.78 | 1,623.00 | 1,209.00 |
| demo_SES | 4.49 | 4.43 | 1.58 | 1.61 | 1,593.00 | 1,196.00 |
| SR_G | 3.83 | 3.83 | 1.10 | 1.11 | 1,623.00 | 1,209.00 |
| col.efficacy_trust | 3.28 | 3.17 | 0.77 | 0.79 | 1,623.00 | 1,209.00 |

**Table 16**

*Spearman Correlation Matrix Participants in the Minority.*

| | PRLQ | SWLS | MLQ_P | Div_Index | Med_Income | Mobility | Total_Pop | Density | Demo_SES | Shared_Reality | Trust |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRLQ | 1.000 | 0.509 | 0.529 | -0.043 | -0.010 | 0.108 | -0.034 | -0.040 | 0.238 | 0.215 | 0.287 |
| SWLS | 0.509 | 1.000 | 0.604 | -0.032 | 0.097 | 0.069 | -0.006 | -0.024 | 0.470 | 0.316 | 0.297 |
| MLQ_P | 0.529 | 0.604 | 1.000 | -0.036 | 0.039 | 0.055 | 0.012 | -0.053 | 0.226 | 0.240 | 0.232 |
| Div_Index | -0.043 | -0.032 | -0.036 | 1.000 | 0.151 | -0.027 | 0.107 | 0.135 | -0.026 | 0.013 | 0.005 |
| Med_Income | -0.010 | 0.097 | 0.039 | 0.151 | 1.000 | -0.045 | 0.238 | 0.024 | 0.183 | 0.030 | 0.120 |
| Mobility | 0.108 | 0.069 | 0.055 | -0.027 | -0.045 | 1.000 | -0.075 | -0.405 | 0.011 | -0.023 | 0.101 |
| Total_Pop | -0.034 | -0.006 | 0.012 | 0.107 | 0.238 | -0.075 | 1.000 | 0.138 | 0.020 | -0.036 | -0.022 |
| Density | -0.040 | -0.024 | -0.053 | 0.135 | 0.024 | -0.405 | 0.138 | 1.000 | 0.048 | 0.069 | -0.012 |
| Demo_SES | 0.238 | 0.470 | 0.226 | -0.026 | 0.183 | 0.011 | 0.020 | 0.048 | 1.000 | 0.200 | 0.202 |
| Shared_Reality | 0.215 | 0.316 | 0.240 | 0.013 | 0.030 | -0.023 | -0.036 | 0.069 | 0.200 | 1.000 | 0.437 |
| Trust | 0.287 | 0.297 | 0.232 | 0.005 | 0.120 | 0.101 | -0.022 | -0.012 | 0.202 | 0.437 | 1.000 |

**Table 15**

*Spearman Correlation Matrix for Participants in the Majority.*

| | PRLQ | SWLS | MLQ_P | Div_Index | Med_Income | Mobility | Total_Pop | Density | Demo_SES | Shared_Reality | Trust |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRLQ | 1.000 | 0.487 | 0.473 | -0.030 | 0.109 | -0.008 | -0.045 | 0.024 | 0.227 | 0.175 | 0.201 |
| SWLS | 0.487 | 1.000 | 0.613 | -0.044 | 0.143 | 0.015 | -0.044 | -0.044 | 0.468 | 0.249 | 0.292 |
| MLQ_P | 0.473 | 0.613 | 1.000 | -0.015 | 0.052 | 0.002 | -0.025 | -0.014 | 0.254 | 0.170 | 0.219 |
| Div_Index | -0.030 | -0.044 | -0.015 | 1.000 | -0.061 | -0.036 | 0.220 | 0.207 | -0.014 | -0.083 | -0.098 |
| Med_Income | 0.109 | 0.143 | 0.052 | -0.061 | 1.000 | -0.024 | 0.157 | -0.083 | 0.231 | 0.087 | 0.126 |
| Mobility | -0.008 | 0.015 | 0.002 | -0.036 | -0.024 | 1.000 | -0.081 | -0.343 | -0.001 | -0.029 | 0.042 |
| Total_Pop | -0.045 | -0.044 | -0.025 | 0.220 | 0.157 | -0.081 | 1.000 | 0.066 | -0.023 | -0.037 | -0.039 |
| Density | 0.024 | -0.044 | -0.014 | 0.207 | -0.083 | -0.343 | 0.066 | 1.000 | -0.017 | 0.012 | -0.061 |
| Demo_SES | 0.227 | 0.468 | 0.254 | -0.014 | 0.231 | -0.001 | -0.023 | -0.017 | 1.000 | 0.102 | 0.199 |
| Shared_Reality | 0.175 | 0.249 | 0.170 | -0.083 | 0.087 | -0.029 | -0.037 | 0.012 | 0.102 | 1.000 | 0.492 |
| Trust | 0.201 | 0.292 | 0.219 | -0.098 | 0.126 | 0.042 | -0.039 | -0.061 | 0.199 | 0.492 | 1.000 |

**Table 17**

*Openess Regressions on Majority vs. Minority Participants*

| | *Dependent variable:* | | |
|---|---|---|---|
| | Big5_O | | |
| | All | Majority | Minority |
| | (1) | (2) | (3) |
| ZIP_Diversity_Index | 0.271 | 0.400 | −0.280 |
| | (0.204) | (0.281) | (0.334) |
| ZIP_Median_Household_Income | 0.00000 | 0.00000• | −0.00000 |
| | (0.00000) | (0.00000) | (0.00000) |
| ZIP_Diversity_Index:ZIP_Median_Household_Income | −0.00000• | −0.00001• | 0.00000 |
| | (0.00000) | (0.00000) | (0.00000) |
| Constant | 3.817*** | 3.682*** | 4.185*** |
| | (0.110) | (0.146) | (0.189) |
| Observations | 2,904 | 1,609 | 1,202 |
| Log Likelihood | −2,973.530 | −1,648.121 | −1,265.469 |
| Akaike Inf. Crit. | 5,959.059 | 3,308.241 | 2,542.938 |
| Bayesian Inf. Crit. | 5,994.902 | 3,340.541 | 2,573.488 |

*Note:* •p<0.1; *p<0.05; **p<0.01; ***p<0.001

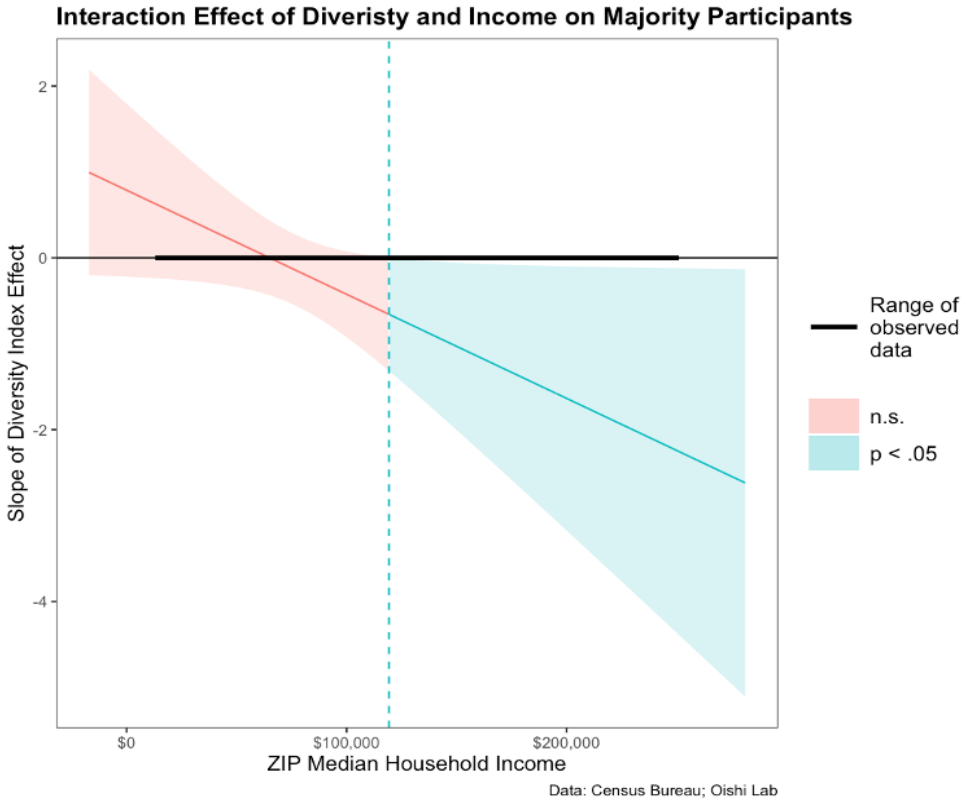


*Figure 5*. Plot demonstrating the range of statistical significance for the interaction effect of Diveristy and Income on Participants in the Majority.

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**Data Analysis**

*Data analysis for this research project was conducted using R (Version 4.4.0; R Core Team, 2024) and the R-packagesapaTables(Version 2.0.8; Stanley, 2021),broom(Version 1.0.6; Robinson, Hayes, & Couch, 2024),bruceR(Version 2023.9; Bao, 2023),caret(Version 6.0.94; Kuhn & Max, 2008),data.table(Version 1.15.4; Barrett et al., 2024),DiagrammeR(Version 1.0.11; Iannone & Roy, 2024),dplyr(Version 1.1.4; Wickham, François, Henry, Müller, & Vaughan, 2023),effectsize(Version 0.8.8; Ben-Shachar, Lüdecke, & Makowski, 2020),emmeans(Version 1.10.2;Lenth, 2024),forcats(Version 1.0.0; Wickham, 2023a),GGally(Version 2.2.1; Schloerke etal., 2024),ggforce(Version 0.4.2; Pedersen, 2024),ggplot2(Version 3.5.1; Wickham, 2016),GPArotation(Version 2024.3.1; Bernaards & Jennrich, 2005),gtsummary(Version 1.7.2;Sjoberg, Whiting, Curry, Lavery, & Larmarange, 2021),interactions(Version 1.1.5; Long,2019),jtools(Version 2.2.2; Long, 2022),kableExtra(Version 1.4.0; Zhu, 2024),knitr(Version 1.46; Xie, 2015),lattice(Version 0.22.6; Sarkar, 2008),lme4(Version 1.1.35.3;Bates, Mächler, Bolker, & Walker, 2015),lmerTest(Version 3.1.3; Kuznetsova, Brockhoff,& Christensen, 2017),lubridate(Version 1.9.3; Grolemund & Wickham, 2011),Matrix(Version 1.7.0; Bates, Maechler, & Jagan, 2024),pander(Version 0.6.5; Daróczi & TITLE4Tsegelskyi, 2022),papaja(Version 0.1.2; Aust & Barth, 2023),performance(Version 0.12.0;Lüdecke, Ben-Shachar, Patil, Waggoner, & Makowski, 2021),psych(Version 2.4.3; WilliamRevelle, 2024),purrr(Version 1.0.2; Wickham & Henry, 2023),readr(Version 2.1.5;Wickham, Hester, & Bryan, 2024),readxl(Version 1.4.3; Wickham & Bryan, 2023),rsvg(Version 2.6.0; Ooms, 2023),stargazer(Version 5.2.3; Hlavac, 2022),stringr(Version 1.5.1;Wickham, 2023b),tibble(Version 3.2.1; Müller & Wickham, 2023),tidyr(Version 1.3.1;Wickham, Vaughan, & Girlich, 2024),tidyverse(Version 2.0.0; Wickham et al., 2019),tinylabels(Version 0.2.4; Barth, 2023),webshot(Version 0.5.5; Chang, 2023),writexl(Version 1.5.0; Ooms, 2024), andxtable(Version 1.8.4; Dahl, Scott, Roosen, Magnusson, &Swinton, 2019).*