Latino Residential Attainments and Segregation in Los Angeles:
Applying New Methods to Connect the Micro and the Macro[1]

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Abstract

This study examines the residential outcomes of Latinos in the Los Angeles Metropolitan Statistical Area using new methods to connect micro-level analysis of residential attainments to overall patterns of segregation in the greater Los Angeles area. Drawing on new formulations of standard measures of uneven distribution such as the Dissimilarity Index and the Separation Index, we conduct micro-level multivariate analysis using the restricted-use 2000 decennial census files to predict segregation-relevant neighborhood outcomes for individuals by race. We term the dependent variables segregation-relevant neighborhood outcomes because the differences in average outcomes for each group on these variables determine the values of the aggregate measures of uneven distribution. The approach allows us to use standardization and components analysis to quantitatively assess the separate contributions that differences in social characteristics and differences in rates of return make towards determining the overall disparity in residential outcomes – that is, the level of segregation – between minority groups and Whites. Based on our micro-level residential attainment analyses we find that for all groups, acculturation and gains in socioeconomic status are associated with greater residential contact with Whites, which promotes lower segregation. However, our standardization and components analyses reveal that the largest portion of White-Latino disparities in residential contact with Whites can be attributed to differences in rates of return; that is White-Latino differences in the ability to translate acculturation and gains in socioeconomic status into more residential contact with Whites. Therefore we conclude that while members of minority groups can make gains in residential outcomes that reduce segregation by attaining parity with Whites on social characteristics, a substantial disparity will persist as Latinos cannot translate those gains into greater contact with Whites at the rate that Whites can. At the aggregate level of analysis, this means that White-Latino segregation remains substantial even when groups are standardized on social characteristics.

I. Introduction

Until now researchers have investigated White-minority differences in residential patterns in two distinct ways. At the micro-level, studies of residential attainment focus on how the social characteristics of individuals relate to their residential outcomes. Oftentimes these studies use the ethnic composition of the individual's neighborhood as a measure of residential attainment, where residential contact with Whites is considered to be an indicator of social mobility. At the macro-level, studies use measures of residential segregation to assess the overall extent of unevenness in the residential distributions of groups in aggregate units such as cities, counties, or metropolitan areas. These two bodies of literature each serve separate purposes, but both increase our understanding of residential patterns. However up to this point it has been difficult to draw direct quantitative connections between the micro-level processes of residential attainment and the macro-level patterns of residential segregation. Our study overcomes this limitation in past research. Specifically, we draw on new formulations of standard segregation indices that make it possible to directly link aggregate-level segregation index scores to individual-level residential attainments and explore the links between residential attainment processes and segregation in new ways.

Residential segregation is an essential element of racial inequality and disparities in life chances. Majority-minority differences in residential outcomes resulting from segregation are closely related to many negative outcomes in life such as social isolation, poverty, exposure to crime, substandard schools, and health disadvantages. Segregation from Whites has been falling slowly for several decades for Blacks (Iceland et al. 2002) though it remains at high levels. For Latinos and Asians it has been holding steady or even increasing with high rates of immigration in recent decades being seen as an important factor contributing to that trend. The levels and

patterns of change in segregation are driven by micro-level social dynamics of residential attainment processes. But the linkages between micro- and macro-level aspects of residential segregation have eluded precise quantitative investigation. This study addresses this issue and aims to better understand the role that individual social characteristics play in the segregation of minority populations from Whites by investigating how segregation-relevant residential contact with Whites varies for Latinos based on socioeconomic status and levels of acculturation. The analysis focuses on the Los Angeles Metropolitan Statistical Area (MSA) which as discussed in the body of the paper permits particular opportunities to investigate the quantitative connections between individual-level residential attainments and aggregate-level segregation index scores in detail. In a previous version of this paper, we used the public-use microdata from the 2000 long-form decennial census, which limited the selection of cities for analysis. For this reason, we began this line of research with Los Angeles where it was possible to use the publicly available microdata. We have since gained access to the restricted-use microdata which has greatly expanded the potential of our study, but we first chose to reanalyze Los Angeles for the sake of comparing results between the two data sources (not discussed in this paper). This study examines the role of several relevant social characteristics including income, education, English language ability, nativity, and citizenship status, all of which are considered to be indicators of acculturation and social status that can lead to social mobility and residential attainments.

In investigating the substantive issues addressed in this paper regarding the role of social characteristics in the residential outcomes of non-White groups and their residential segregation from Whites, this paper also incorporates two methodological innovations in the analysis of segregation. The first innovation is the formulation of familiar segregation measures as a difference of means between two groups, developed by Fossett (2009). This formulation relates

aggregate segregation to group differences on segregation-relevant individual residential outcomes and in so doing makes it possible to investigate the connection between macro-level patterns of segregation and micro-level processes of residential attainments using multivariate regression models. The second innovation is to use the techniques of standardization and decomposition analysis to highlight how aggregate segregation of non-White groups from Whites traces to group differences in mean residential attainments and also to demonstrate how group differences in mean residential outcomes arise not only because groups differ in their means for social and economic characteristics that determine residential outcomes but also in the way groups differ in how much they can convert those characteristics into residential attainments. Applied together, these innovations provide an opportunity to explore segregation and residential attainments in new and highly useful ways.

The analysis reported here implements these new methods for investigating segregation using restricted data from the 2000 decennial short-form and long-form census files. The restricted-use files allow us to measure segregation at the block-level using the 100% census files and connect neighborhood outcomes to individual characteristics using the detailed census long-form files which provide information on individuals cases as well as census block IDs.

II. Theoretical Background

Residential Segregation in the United States

Residential location is closely associated with a host of important social and economic outcomes that reflect and impact life chances. Where one resides in urban space can potentially affect the nature and extent of social interaction with other groups as well as access to amenities and resources such as quality of schools and education opportunities, access to employment opportunities, and access to optimal healthcare (Charles 2003; Massey and Denton 1985; White

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et al 1993). Segregation in residential distributions creates disparities wherein minority populations disproportionately reside in lesser quality neighborhoods and experience disadvantages such as greater exposure to crime and other social problems. Residential location is determined by many factors beyond individuals' residential preferences and goals. Important structural factors including one's social status within the status hierarchy, discrimination and disadvantages in group resources also can shape and restrict where people reside. Accordingly, the literature documents that a long history of legally sanctioned residential segregation and housing discrimination has left a lasting legacy of residential segregation and inequality that persists for non-White minority populations in the present day (Massey and Denton 1993).

Among non-White minority populations, Blacks continue to be the most segregated minority group in the United States and experience hypersegregation in many cities (Massey and Denton 1989), a phenomenon uncommon for other groups. In comparison, Latinos and Asians experience only low to moderate segregation from whites (Charles 2003; Frey and Farley 1996; Iceland 2004). However, the rapid growth of the Latino and Asian populations may have important implications for the future trajectory of patterns of segregation and residential distribution (Charles 2003; Iceland 2004). Non-Latino Whites are fast on their way towards becoming a numerical minority population due to the combination of decreased fertility rates for Whites and high levels of immigration on the part of Latinos and Asians coupled with higher Latino fertility rates. As a consequence, the Latino population has emerged as the largest non-White minority group and the Asian population is emerging as a sizeable non-White group in many US cities after having previously been numerically negligible in most places.

According to the 2010 Census, Latinos now make up 16 percent of the U.S. population, with the population growing by 43 percent since 2000 (U.S. Census Bureau 2010).   The

majority of this rapidly growing, overwhelmingly Spanish-speaking population is of Mexican origin at 63 percent, with the second largest portion of Latinos being of Puerto Rican origin at 9.2 percent. Latinos have in recent years become the largest minority group in the United States, surpassing the Black population in size (Saenz 2004). Latinos make up a large portion of the foreign-born population, but the majority of Latinos nationally (nearly 60%) are U.S.-born (American Community Survey 2007-2011) and many in this population can trace their families back for generations in the United States. In 2000, an estimated 40 percent of Latinos were foreign-born, a significantly large portion of the Latino population. In terms of language, 28.6 percent were monolingual Spanish speakers, 53.2 percent were bilingual, and 18.2 percent were monolingual English speakers.

Much of the research on U.S. Latinos is devoted to describing and documenting the diversity within the population and in Latinos' experiences in the United States. Another important line of research focuses attention on Latinos and acculturation or assimilation. In the current political and social climate regarding Latino immigration, the big question amongst researchers and others is: given the rapid growth of the Latino population due to migration and natural increase, how are they being placed in society and how are they being received?

Despite rapid population growth, Latinos continue to be at most only moderately segregated from Whites on the two most widely studied dimensions of segregation, uneven distribution (e.g., typically measured using the Dissimilarity Index or "D") and isolation (e.g., typically measured using P* index of in-group contact). Holding uneven distribution constant, population growth and the effects of chain migration necessarily bring higher levels of isolation and an associated decrease in exposure to whites and these patterns of change have been observed (Charles 2003; Massey and Denton 1987). In addition, Iceland et al (2002) and Massey

(2001) found that uneven distribution of Latinos from Whites has increased, particularly in metropolitan areas where there has been a greater increase in the Latino population.

Research focusing on micro-level residential attainments suggests that, in comparison to Blacks, Latinos tend to experience greater residential mobility and greater contact with Whites as they acculturate and assimilate on socioeconomic status (Alba and Logan 1993; Charles 2000; Massey and Fong 1990)[4]. The role of nativity is of particular interest, as nativity could moderate the effect of socioeconomic status on residential mobility if the foreign-born prefer or are constrained to live amongst other Latinos, or it could be that high-status immigrants experience higher residential mobility if they seek to aggressively pursue the "American dream." Charles (2000) for instance found that a significant percentage of foreign-born Latinos in Los Angeles expressed a preference to live in neighborhoods where Blacks are completely excluded, indicating at the very least a perception that the presence of Blacks lessens the value of a neighborhood. It was also found that few expressed a desire to live in all-Latino neighborhoods.

Saenz (2004) and Vásquez and colleagues (2008) have reported evidence that Latinos as a whole are moving away from the traditional areas of Latino concentration such as the southwest and entering new areas of settlement and residence that did not previously have a notable Latino population like the midwest and the southeast (not including Florida which has had a significant Cuban population for quite some time). This movement has inspired a new trend in the Latino residential segregation literature as researchers have begun to examine the residential patterns of Latinos in these "new destinations" (Lichter et al 2010). In light of the demographic principle that geographic mobility often can facilitate social mobility, it is now more relevant than ever to investigate how Latino immigrants are integrating into society and

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[4] It is important to keep in mind that Latinos themselves are a racially diverse population meaning that Black Latinos do not experience the same lower levels of segregation as white and other Latinos (Logan 2003).

what characteristics of the population affect the amount of contact that they have with the majority population.

Spatial Assimilation Theory

Spatial assimilation theory argues that individuals over time and across successive generations go through a process of sequential integration in which they acquire language skills and native culture, gain higher socioeconomic standing, and then convert these gains into better residential outcomes. Applied to racial/ethnic minority groups, spatial assimilation theory posits that minority group movement toward parity with Whites on socioeconomic status will lead members of these groups to experience residential social mobility leading them to become more spatially integrated with Whites as they move into higher-quality neighborhoods and out of ethnic neighborhoods, (Charles 2003; Iceland and Nelson 2008). Applied to immigrant groups, the issue of acculturation takes on special importance. According to Charles (2003), the factors of amount of time spent in the United States and English proficiency both play crucial roles in the spatial assimilation process. Immigrants may initially live in enclaves close to kin, friends, co-ethnics, and ethnic institutions as they adjust to the new country. However, as they obtain higher socioeconomic status, improve their language skills, and as their children go through the American education system, they can expect to experience spatial assimilation to some extent (Massey 2001).

Importantly, the racial hierarchy in the United States and associated discrimination and differential treatment can impede spatial assimilation and dampen or block the ability for non-White immigrants and their descendants to be upwardly mobile (Massey 2001). For instance, Blacks continue to be the most disadvantaged minority in the United States in general and suffer

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higher levels of segregation from Whites despite having experienced modest improvements in residential and socioeconomic outcomes in recent decades. This also could apply to Black Latinos who suffer from the long-surviving "one-drop rule" wherein being seen as "Black" is more consequential than Latino ethnicity. Discrimination and differential treatment also impact segregation of Latinos and Asians from Whites, however, the residential outcomes of Latinos and Asians in many ways more closely resemble spatial assimilation expectations because social mobility is observed for these groups more so than for the Black population. A complimentary theory to spatial assimilation which does address the barricades to residential mobility for minorities is known as place stratification. This theory posits that regardless of gains in socioeconomic status, a racial dimension of inequality persists due to continuing discrimination (Charles 2003). However, Iceland and Wilkes (2006) argue that the experiences of Latinos and Asians have been better explained by the spatial assimilation model.

Based on the past literature, one can expect to see improvements in residential outcomes as Latinos experience further socioeconomic assimilation and, in the case of the foreign-born population, assimilation on language and citizenship and on nativity for their children. The analyses here will investigate these issues by using multivariate regression methods in combination with standardization and decomposition techniques to assess the degree to which (a) social characteristics contribute to the segregation-relevant residential outcomes of non-Whites as spatial assimilation theory would suggest, and (b) how much of the differences between Latinos and Whites remain when socioeconomic and other characteristics are taken into account.

III. Data and Methods

Data

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We use data from the 2000 restricted-use decennial census microdata for the Los Angeles MSA to estimate regression models that test the hypotheses that acculturation and assimilation on socioeconomic status lead to individual residential mobility that serves to reduce White-Latino segregation. The 2000 decennial census was conducted using two forms – the short form was sent to the entire population and gathered basic information such as age, sex, race, Latino ethnicity and relationship to others in the household, while the long-form was sent to 1 in 6 people in the population (a nearly 17% sample) and gathered more detailed demographic and socioeconomic information such as nativity, citizenship, ancestry, language usage, income, occupation, industry, etc. Thus the short-form data gives us full population counts on race and Latino ethnicity at the census block level for the sake of measuring block-level segregation, while the long-form data provides detailed information that can be used to construct independent variables and is based on an attractively large sample of the US population. We investigate residential outcomes, specifically measures of segregation-relevant to contact with Whites, assessed at the block level. In a previous version of this paper, we conducted this study using the 2000 census public-use (PUMS) files and measured segregation at the level of the Public Use Microdata Areas (PUMAs). PUMA units constitute the smallest level of geography available in the public-use census microdata. They encompass large areas of geography and population; for example, the PUMA minimum size of 100,000 in population is approximately twenty-five times the average population size of census tracts. Nevertheless, preliminary methodological analysis establishes that segregation and residential attainment dynamics can be detected using PUMA-level analyses in large metropolitan areas (e.g., 2.5 million and above) that have 25 or more PUMAs. For example, variation in segregation scores for metropolitan areas based on PUMAs

closely parallel variation in segregation scores based on finer levels of geography such as census

tracts or block groups[5].

Scores of aggregate segregation indices are lower when measured using PUMA units

because PUMAs contain an aggregation of many smaller neighborhoods (e.g., tracts and block

groups) and this mutes variation in ethnic composition present at lower levels of spatial

resolution. Significantly, this introduces a conservative bias against finding support for our

research hypotheses. That is, analysis at the spatial scale of PUMAs tends to be conservative in

the sense that it results in lower aggregate-level segregation scores, lower group differences in

average residential attainments, and less striking spatial assimilation effects in individual-level

residential attainment analyses. In light of this, our findings regarding segregation and

residential attainment effects using PUMAs we have found to be even stronger and more

pronounced when we replicate the analysis using smaller spatial units such as census blocks.

Individual-Level Units and Variables

The units of analysis for our residential attainment analyses are the householders,

restricted to those above the age of 15. Householders were identified based on their response to

the relationship question on the census form. All other individuals in the household were

omitted due to the fact that members of a household tend to move together, especially in the case

of children.

The dependent variables in this study are segregation-relevant residential outcome scores

that additively determine the level of segregation in the city. More specifically, these are block-

level scores of residential outcomes with the following quality; the group difference of means on

these individual level scores yields the value of the aggregate level segregation index computed

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[5] For example, using block group level data in Los Angeles produces a White-Latino segregation score of 46.76 and a White-Asian segregation score of 30.82. In contrast, using PUMA level data produces a White-Latino segregation score of 27.16 and a White-Asian segregation score of 16.24.

using blocks. We model two kinds of residential outcomes; one that additively determines the value of the Separation Index and one that additively determines the Dissimilarity Index.

The analyses are possible because we draw on new formulations of popular segregation indices wherein the value of the index can be obtained as a difference of group means on index-specific scores on individual-level residential outcomes (Fossett 2009). Fossett has undertaken methodological studies that establish that all popular measures of uneven distribution including, but not limited to, the Separation Index and the Dissimilarity Index that we use in the present analysis, can be formulated in a common difference of means framework where index values can be obtained from:

$$S = Y_1 - Y_2$$

where:

S is the relevant segregation score

Y_1 is the mean score for Group1 in the analysis

Y_2 is the mean score for Group 2 in the analysis

The specific scoring for individual residential outcomes is dependent on which segregation score is being used. In this paper, we assess segregation using the Separation Index and the Dissimilarity Index. We next review how individual residential outcomes are scored so that it is possible to perform individual-level spatial attainment analysis of residential outcomes that can be used to obtain city-level segregation index scores.

The Separation Index (S), also known variously as the variance ratio index and eta squared, is a convenient and easily interpretable measure of uneven distribution which has been used in many empirical studies and reviewed in many methodological studies of segregation indices (e.g., Duncan and Duncan 1955; White 1986; James and Taueber 1985; Zoloth 1976). For the Separation Index, the dependent variable for analysis of individual residential outcomes

(y) is scored based on the "pairwise" proportion White in the block. By "pairwise" we mean that

only the two groups in question are included in the denominator used to calculate proportion

White. For each individual in the analysis, the (pairwise) proportion White in their area of

residence is assigned as their score. The pairwise nature of the calculation is not unusual; all

measures of uneven distribution are calculated using pairwise ethnic proportions. Accordingly,

residential attainments that determine aggregate segregation must be calculated in a similar

manner. The particular residential outcome score assigned here has the following quality; it is

possible to obtain the score of the Separation Index for the city by taking the difference of group

means on these residential outcome scores.   Fossett (forthcoming) provides derivations showing

how values of the Separation Index obtained as a difference of means in individual residential

outcomes are equivalent to the value of the Separation Index computed by more familiar

computing formulas for the measure.   These derivations also establish a simple and appealing

interpretation of the separation index. For example, the value of the index indicates the White-

Latino difference in (pairwise) contact with Whites. Under even distribution the difference will

be zero (0); under complete segregation it will be 100.

Fossett (2009) also shows that the Dissimilarity Index can be formulated as a difference

of means between two groups. Specifically, the Dissimilarity Index can be calculated by

assigning values of 1 or 0 to individuals based on a comparison between the pairwise proportion

White in their neighborhood (in this case, the block) and the pairwise proportion White in the

city as a whole. If the proportion White in the individual's neighborhood is greater than the

proportion White in the city as a whole, the individual receives a score of 1. If the proportion

White in the individual's neighborhood is less than or equal to the proportion White in the city as

a whole, the individual receives a score of 0. The average score for each group in the pairwise

comparison (White-Latino) is then calculated and the difference in average scores is the

Dissimilarity Index. Mathematically, this method produces the exact same score on the

Dissimilarity Index that the conventional formulas do. The ready interpretation in this

formulation is that the value of D indicates the White-Latino difference in percentage of the

group that resides in neighborhoods where Whites are over-represented. This will be zero under

even distribution and 100 when segregation is at its maximum. The resulting formulas for both

segregation indices can thus be constructed like this:

(2) $S = (1/W)w_i y_i - (1/L)\Sigma l_i y_i$

> Where y=p

(3) $D = (1/W)w_i y_i - (1/L)\Sigma l_i y_i$

> Where $y = 1$ if $p \geq P$ and $y = 0$ if $p < P$

These formulations of the Separation Index and the Dissimilarity Index as simple

differences of group means on the residential outcome of (pairwise) contact with Whites are

attractive for the purposes of this study for both conceptual and practical considerations. On the

conceptual side, the formulations link individual residential outcomes to aggregate-level

segregation index scores in a mathematically simple and easy to understand way. On the

practical side the formulations make it possible to investigate segregation by conducting

individual-level analyses of segregation-relevant residential outcomes. And it also opens the

possibilities of performing standardization and decomposition analyses based on regression

analyses. That is, by running separate models for Whites and Latinos, one can assess in a

quantitatively precise way how the average contact each group has with Whites is shaped by

their average levels of relevant social characteristics and by their ability to translate these social

characteristics into contact with Whites.

The independent variables in the analyses represent basic measures of socioeconomic status and acculturation as well as other factors that might affect where one lives and who they live with. These variables include household income, educational attainment, English ability, citizenship, military participation, and time spent in the U.S. We also include other demographic predictors of residential location such as household type (married couple, single mother, etc), recent migration (within the past 5 years), and age. While the process of acculturation is more complex than these few variables can capture, past studies show that they can be useful for assessing the experiences of minorities, particularly foreign-born minorities, in U.S. society.

Education is measured using a 6 category ordinal variable where the lowest category is those who did not attend high school and the highest category is those with a post-graduate degree. It is treated as an interval variable in the regression analyses based on findings that the linear specification performs as well as the ANOVA style six-category specification and is centered on those who completed high school (or GED). Income is measured as the natural logarithm of household income and is centered on the mean income for a White individual who has completed high school (or GED). The English ability variable is categorical and scaled from 0 to 3, with 0 indicating no English and 3 indicating either that the individual speaks only English or speaks English very well. This variable is centered on those who speak English very well. Citizenship is measured using a series of dummy variables for non-citizens, naturalized citizens, and U.S.-born citizens with U.S.-born citizens treated as the reference group. A dummy variable is included for recent immigrants, where those who immigrated between the years of 1985 and 2000 were coded as 1. A dummy variable is also included for recent migration, where those who have moved in the past 5 years are coded as 1. This variable is meant to capture the effect of neighborhood stability. Military participation is coded as 1 if the respondent has ever

participated in the military, either in active duty or not. Household type is a set of dummy

variables for married couple, single mother, and other. Age is also measured as a set of dummy

variables, with categories for those who are age 15 to 29, age 30 to 59, and age 60 and over.

Methods of Analysis

An additional methodological innovation we adopt in this study is the use of fractional

logit regression to estimate how social characteristics affect segregation-relevant residential

outcomes for Latinos and Whites. The method, which draws on the generalized linear modeling

(GLM) framework, was first introduced by Papke and Wooldridge (1996) in the econometrics

literature and is specifically geared to modeling the mean of a bounded variable. The use of the

word "logit" in the name of the method is potentially misleading as it may lead one to think that

the dependent variable is a logit transformation of a proportion. In actuality, fractional logit does

not transform the dependent variable in this way and instead models the mean of the dependent

variable as scored in its original metric. The method involves nonlinear estimation wherein the

curve describing the path of the mean for the dependent variable is constrained to follow a

logistic "S" curve within the bounded range of the scale for the dependent variable when plotted

in the original metric of the dependent variable. The model is estimated using the GLM

framework. We conducted our analyses using the glm command in Stata 13. This involves the

usual regression specification but specifying the link option as "logit" and the distribution family

as binomial. Coefficients are logit-style coefficients but, to reiterate, they are predicting the logit

of the mean of the natural scores, not the mean of logit scores. The regression equations can be

used to obtain predicted values either for the logit of the mean or, if desired, for the mean in the

dependent variable's original metric bounded between 0 and 1 (based on applying the inverse

logit transformation to convert logit predictions of the mean to the implied mean of the proportions).

Fractional logit has attractive qualities in comparison with other methods for modeling proportions because of its ability to constrain predictions within the bounds of 0 and 1 and because it does not require special procedures for handling cases that take endpoint values. Linear regressions such as OLS do not guarantee that the predictions will remain within the bounds, and other non-linear techniques such as beta regression and OLS regression of logit transformed scores must use arbitrary rescaling to deal with cases that take endpoint values of 0 and 1 (Kieschnick and McCullough 2003). Another attractive quality of implementing fractional logit regression is that it is estimated by quasi-likelihood methods which do not require that strong specific assumptions be made regarding the distribution of the error term. This is helpful when modeling a bounded dependent variable since distributions of residuals are likely to be heteroskedastic and non-normal. Quasi-likelihood estimation is achieved using the GLM framework by specifying the option for calculating robust standard errors in combination with the logit link and binomial distribution options (Wooldridge 2002).

We applied household analytic weights when preparing descriptive statistics and when estimating the fractional logit regression models. The long-form census file is based on a 1 in 6 sample overall, but in some areas households are sampled at a higher rate than in other areas. Accordingly, it is necessary to use the household weights to obtain results that are representative of the population of interest. This paper presents descriptive results as well as regression results, and for this reason it is important that the sample is representative.

Once regression results are obtained, we apply regression standardization and decomposition techniques to both assess the impact of group means on the independent variables

as well as group rates of return on the independent variables. Variations on this well-known and popular methodology have been used at least since an early application by Evelyn Kitagawa (1955) that demonstrated how standardization and decomposition analysis could provide a better understanding of how differences in group means on an outcome could be broken down into specific terms quantifying the role of group differences in means on relevant factors influencing the outcome, group differences in rates of impact for these factors, and the interaction or joint impact of these two components.   Later studies by Althauser and Wigler (1972) and Jones and Kelley (1984) extended the Kitagawa method to regression-based analysis and subsequent studies (Powers et al. 2011) have extended and refined the application of these methods in the case of nonlinear models such as the fractional logit model used here.

The application of the method here is quite basic and can be implemented as follows. The first step is to estimate two group-specific attainment models, one for Whites and one for Latinos. Next the resulting group-specific coefficients can be used in combination with the group-specific means on the independent variables to generate model-based predictions for the mean of the dependent variable that are "standardized" on the independent variables. Choices for the "standard" used to generate the model-based predictions are varied over the four possible combinations. The resulting set of four predicted means allows one to consider the predicted impact of changing minority rates (i.e., coefficients) to match those for Whites, changing minority means on independent variables to match those for Whites, or both in combination. By doing so one can gain insight into how the group difference in means on the dependent variable arises. Thus the relevant standardization equations are

$$(4) \qquad Y_L = b_{L0} + (b_{L1} * x_{L1}) + (b_{L2} * x_{L2})\ldots + (b_{Ln} * x_{Ln})$$

$$(5) \qquad Y_L = b_{L0} + (b_{L1} * x_{w1}) + (b_{L2} * x_{w2})\ldots + (b_{Ln} * x_{wn})$$

$$(6) \qquad Y_L = b_{w0} + (b_{w1} * x_{L1}) + (b_{w2} * x_{L2})\ldots\ldots+ (b_{wn} * x_{Ln})$$

$$(7) \qquad Y_L = b_{w0} + (b_{w1} * x_{w1}) + (b_{w2} * x_{2w})\ldots\ldots+ (b_{wn} * x_{wn})$$

Where equation (4) is the original equation for Latinos with Latino group means and rates of

return, equation (5) calculates the predicted contact that Latinos would have with Whites if

subjected to the White group means on the independent variables, equation (6) calculates

predicted contact with Whites when Latinos are subjected to White rates of return, and equation

(7) calculates predicted contact when Latinos are subjected to both the White group means and

the White rates of return.

Note that equation (4) reproduces the Latino mean on segregation-relevant residential

outcomes and equation (7) reproduces the White mean on these same residential outcomes. The

difference between the two group means yields the city-level segregation score. The variations

in the predicted Latino mean on residential outcomes under different assumptions (regarding

means and rates) provides a basis for gaining deeper insight into the underlying origins of

segregation at the city level. For example, the differing results can be compared to "decompose"

and assess how group means and rates of return individually contribute to the difference in

contact with Whites between the two groups, and how they interact. Comparing the difference in

group means and group rates of return highlights the disparities between the two groups, the role

of compositional effects and how that translates into residential inequality (Fossett and Cready

1998).

In addition to the standardization and components analysis, the individual impacts of

micro-level factors on overall segregation can also be assessed. Using the White and Latino

group-specific models, the two groups can be held constant on all characteristics except for one.

The difference in the resulting predicted means on contact with Whites produces the segregation

score where the two groups are matched on all other characteristics and only one specific characteristic is varied. For example, Whites and Latinos can be standardized on being U.S.-born citizens with a household income of $40,000, age 30 to 59, and living in a married couple household. The one variable that is permitted to change is education so that both groups can be set to having a high school degree or a postgraduate degree, and the predicted mean will vary accordingly. This exercise allows one to see how contact with Whites between Whites and Latinos changes as education levels change while holding all other factors constant. The same can also be done for varying levels of citizenship and income.

IV. Results

1. Descriptive Findings

Table 1 presents the summary statistics for both groups using household weights[6]. What stands out in these summarized group characteristics is that while 95 percent of White household heads are U.S. citizens (86 percent by birthright), only 54 percent of Latinos have citizenship, either by birthright or naturalization. Latinos have moderately high scores on English ability overall at 2.05, compared to 2.93 for Whites. Of the Latino population, 28 percent are recent immigrants compared to only 5% of Whites. This particular finding is in line with the observed increase in Latino immigration during the 1990s. Latinos have by far the lower level of educational attainment at 1.50 compared to 3.21 for Whites. The average natural logarithm of household income is also appreciably lower for Latinos at 10.28 compared to 10.80 for Whites. Not surprisingly, Latinos are the younger population with a mean age of 41.98, while the mean age for Whites is 51.33. We also find that Whites have the higher percentage of individuals who

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[6] Due to census disclosure, the descriptive statistics are based on the 2000 5% public-use file

at some point have participated in the military at 22 percent, compared to only 7 percent of

Latinos.

Table 2 presents the average pairwise percent White at the block level for Whites and

Latinos in Los Angeles, calculated from the White-Latino pairwise combinations[7]. As noted

earlier, the group difference on the means for these pairwise percentages produces the Separation

Index measure of segregation between the two groups in the analysis. For White-Latino

segregation, the average amount of contact that Whites have with other Whites at the block level

is 80.79, which represents the average percentage of Whites in the neighborhood for Whites.

This is compared to the Latino average amount of contact with Whites at 31.19. The difference

in these means yields a Separation Index score of 49.60. In Table 3 we present measures of

segregation for each group comparison based on the Dissimilarity Index. For White-Latino

segregation, we find a Dissimilarity Index score of 64.16, which is the calculated difference of

mean scores for each group in the analysis where Whites have an average score of 84.62

(meaning 84.62 percent of White households live in blocks where the proportion White in the

area is higher than the proportion White for Los Angeles as a whole) and Latinos have an

average score of 20.46. A score of 64.16 indicates very high segregation.

The next step in this analysis is to examine the micro-level factors which contribute to

these overall segregation patterns. As explained previously, because both the Separation Index

and the Dissimilarity Index can disaggregated down to the individual level, we are able to run

multivariate regression models where the units of analysis are individuals and the dependent

variables are the individual-level scores on residential outcomes that determine the overall

segregation scores for Los Angeles. Following discussion of the regression models we can then

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[7] The following results as well as the dependent variables were constructed using the 100% decennial short-form census data, which contains race and Latino ethnicity information for the entire US population.

conduct standardization and components analyses to assess the contributions that group differences in means and rates of return make to the overall level of segregation. We begin with the Separation Index, followed by the Dissimilarity Index.

2. Findings for the Separation Index

In Table 4 we present the multivariate results predicting pairwise proportion White for the White-Latino analysis. Separate models are run for the groups in each comparison so that it is possible to get race-specific coefficients, a necessary component for conducting the standardization and decomposition analyses later. In Table 4, the results from the White-Latino analysis reveal patterns consistent with the spatial assimilation literature. We find that for Latinos, education, income, English ability, and being U.S.-born all have positive effects on residential contact with Whites. Additionally we find that Latinos who have served in the military have significantly more contact with Whites than Latinos who have had no military service, and single mother households have significantly less residential contact with Whites in comparison to married couple households. For Whites, education and income are also both positively related to residential contact with Whites while the effect of military service is negative.

To summarize the multivariate results, our findings are consistent with the existing literature. Generally, gains in other social outcomes such as income, education, and language ability result in greater residential contact with Whites. The effects of acculturation are clear for Latinos, who vary widely by nativity status and English language ability due to contemporary immigration from Latin and Central America. The spatial assimilation dynamic plays out as expected in our findings. However, the multivariate analyses alone do not tell us the entire story. While social mobility is indeed positively related to residential mobility for everybody, we still

must ask if gains in social characteristics translate equally into residential contact with Whites for all groups. In other words, are the "rates of return" the same for all groups, or do groups vary in being able to translate social and economic characteristics into residential mobility? In this next section, we explore this question and related questions using standardization and decomposition techniques.

Now that the regression results have been obtained, we apply standardization and decomposition techniques using the model coefficients and group means on the independent variables for each group. The goal of the standardization method is to gain insight into how much contact with Whites would change were the minority group to have the same means on the independent variables as Whites and the same rates of return. Thus, the regression equations are used to predict group means on segregation-relevant residential outcomes for Latinos based on their observed rates of returns and group means on independent variables. The predictions are then recalculated with first the White group means, then the White rates of return, and finally with both which ought to yield the average level of contact that Whites have with other Whites. The contributions made by the differences in means and the differences in rates of return can then be calculated in varying combinations to perform decomposition of the overall group difference in means. Table 5 presents the predicted values on contact with Whites for Latinos given White means on social characteristics and White rates of return.

A clear pattern emerges in the standardization results. The lowest predicted contact with Whites for Latinos is based on the prediction when they experience their own group means and rates of return. Latinos on average are predicted to live in neighborhoods that are 51.69 percent[8].

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[8] The predicted means on contact scores does not necessarily exactly reproduce the observed average contact scores presented in Tables 2 and 3 due to the fact that the predictions are based on a a nonlinear regression model. However, the predictions based on the fractional logit regression analyses do in fact track the observed group means on residential outcomes very closely.

Bear in mind that these percentages are calculated from the pairwise combination, meaning that percent White for Latinos is out of the sum of Whites and Latinos only. When the equations are standardized on the White group means on the independent variables, contact goes up slightly for Latinos, increasing by nearly 14 points. While these slight increases indicate that outcomes improve if all three groups have the same social characteristics, they still do not achieve the same level of contact with Whites that Whites have with themselves. We next apply the White rates of return obtained from the multivariate regression analyses to the minority group equations, while preserving the means for the two groups. A dramatic change occurs when the equations are standardized on the White rates of return. For Latinos contact increases by 41 points, resulting in a Separation Index score of only 10.60. Clearly one can see that even when Latinos have the same average social characteristics as Whites, there is still a significant disparity in residential contact due to the fact that Latinos cannot convert these characteristics into contact with Whites at the same rate that Whites can.

To further emphasize this point, Table 6 breaks down the group differences on contact into components in order to see the extent to which differences in means and differences in rates of return each contribute to the overall difference in the predicted means of contact with Whites. Because fractional logit uses a quasi-maximum likelihood estimation technique, the predicted mean values do not match perfectly with the observed mean, but they closely approximate the observed mean to a point that the magnitude of segregation stays about the same.

. Out of the total White-Latino Separation Index score, 23.82 points of it of it is due to disparities in the group means on the independent variables. The largest contribution to the difference comes from the difference in the rates of return, accounting for 41.08 points of the total difference in contact with Whites. The interaction effect moderates the individual

contributions of the two components, bringing the sum down by 13.22points to result in the final contact difference.

It is clear in this analysis that even when Latinos are given the same social characteristics as Whites, there is still a large disparity in residential outcomes between the minority group and Whites due to the differences in each group's ability to convert their social characteristics into more residential contact with Whites. The findings from these decompositions reaffirm the point that while differences in social characteristics contribute to Latino segregation from Whites, being equal on those characteristics only resolves some of the separation. The ability to convert those social characteristics into contact with Whites still prevents Latinos from achieving the same level of contact that Whites have because they do not experience the same rates of return that Whites experience.

3. Findings from the Dissimilarity Index

Because the Dissimilarity Index is perhaps the most popular and commonly used measure of segregation, we include here analyses where the dependent variable is the individual score which is used to calculate the Dissimilarity Index. Recall that for the Dissimilarity Index, the individual receives a score of 1 if the proportion White in their neighborhood (block) is greater than the proportion White in the city as a whole and they receive a score of 0 otherwise. Therefore in these models, the coefficients can be interpreted as effects on the probability of living in a neighborhood where Whites are overrepresented in comparison to the city as a whole. In Table 7we present the multivariate results for the White-Latino comparisons predicting this probability for each group.

Overall, the results are similar in nature to what we found in the analysis for the Separation Index. For Latinos, education, income, English ability and being U.S-born are all

positive predictors of living in neighborhood with a greater proportion White than the city as a whole. For Whites, both education and income are positively related to living in neighborhoods with a greater proportion White than the city as a whole, while having served in the military is a negative predictor.

With the coefficients estimated, we can proceed with the standardization and components analysis as we did with the Separation Index. With the Dissimilarity Index, the predicted group averages on individual scores can be interpreted as the percentage in each group who live in neighborhoods where the proportion White is greater than the proportion White in Los Angeles. In Table 8 we present the standardization analysis for the White-Latino comparison. The predicted percentage of Latinos who live in neighborhoods with a greater proportion White than the city as a whole is 16.35 when their own group means and group rates are applied. This percentage increases to 50.29 when Latinos are given the White group means on social characteristics, an increase of nearly 34 points. This increase alone is notable, but once again the most impactful change is seen when Latinos are given the White rates of return. Under this scenario, the percentage of Latinos who live in neighborhoods with a proportion White greater than the city as a whole increases by a very large amount – some 57 points – and raises the predicted percentage to 73.31. With both the White rates of return and White group means, Latinos then equal whites at 87.18 percent.

Once again we can also conduct a components analysis, assessing the contributions that differences in group means and differences in rates of return make to the overall Dissimilarity Index score. In Table 9 we present the components analysis for both the group comparison. The results correspond to what could be observed in the standardization analysis, with the difference in group rates of return contributing the most to the overall score on the Dissimilarity Index. The

Dissimilarity Index score measuring White-Latino segregation is 70.83, and the difference in rates of return contributes 56.96 points while the difference in group means contributes 33.94 points. It is even more evident in the analysis of the Dissimilarity Index that it is the difference in ability to translate social characteristics into more contact with Whites that contributes the most to segregation, although differences in group means in social characteristics also play a large role.

4. Hypothetical Cases Using Standardization Techniques

The final step in this analysis is to demonstrate how the methodological innovations of this study allow for the ability to assess the impact of specific micro-level factors on overall segregation patterns. As described previously, the method for doing so is simple once the group-specific regression models have been calculated. Both Whites and Latinos are set to specific values on the independent variables and the predicted means on the dependent variable for each group produces the components for calculating the level of segregation when the two groups are matched on particular characteristics. This alone can be informative of how micro-level processes of attainment shape segregation, but the real benefit is that one can see how segregation is affected by changing just one characteristic while holding all of the others constant.

In this study, we chose to examine how segregation is impacted by differences in education, income, and the combination of citizenship and immigration. We begin with education, starting both Whites and Latinos at a high school level education and then moving them both to a post-graduate degree. For the other characteristics, we hold both groups at U.S-born, speaks English very well, did not serve in the military, age 30 to 59, household income of $40,000, and residing in a married couple household. The justification for selecting these

particular values on the other independent variables was to capture Whites and Latinos in a position to experience an average level of spatial assimilation with characteristics that are especially favorable for Latinos. When Whites and Latinos are held at these values and are also assigned only a high school education, the Separation Index is 33.91 and the Dissimilarity Index is 47.55. Moving both groups up to a post-graduate degree decreases the Separation Index to 24.42 and the Dissimilarity Index to 28.44. It is important to point out that the majority of the decrease is due to an increased level of residential contact with Whites for Latinos, as the mean outcome for Whites was not as greatly affected by increasing the level of education.

The second case we consider is where all characteristics are held as before but with two differences: education is now set to a high school level and household income is permitted to vary from approximately $15,000 to approximately $90,000 thus allowing us to now examine the impact of income. We find that when both groups are held at a household income of $15,000, the Separation Index is 34.42 and the Dissimilarity Index is 47.91. As both groups are moved up to a household income of $90,000, the Separation Index decreases to 33.55 and the Dissimilarity Index decreases to 46.96. Compared to the effect of education, changing the level of income does not change the level of segregation as much. We here note that we are aware that education and income do not operate independently of one another, as education itself is a predictor of income, and therefore we take caution in making direct comparisons between the effects of education and income on overall levels of segregation between Whites and Latinos.

Our last analysis assesses the impact of varying levels of citizenship and immigration status. We continue to hold all other characteristics constant at the same values as before, with education set to high school completed and household income set to $40,000. The characteristics that we allow to vary now are a combination of nativity, citizenship and recent immigration

where we look specifically at four categories: U.S-born citizen, foreign-born naturalized citizen, foreign-born non-citizen who immigrated before 1985, and foreign-born non-citizen who immigrated between the years of 1985 and 2000. When Whites and Latinos are both set as recently immigrated foreign-born and non-citizens, the Separation Index is 45.12 and the Dissimilarity Index is 62.08. As we change the two groups to have immigrated prior to 1985, the Separation Index becomes 43.94 and the Dissimilarity Index becomes 59.42. Adding citizenship has a slightly larger effect particularly for Latinos, with the Separation Index decreasing to 41.42 and the Dissimilarity Index decreasing to 56.97. And finally, with both groups set at being U.S.-born citizens, both indices drop to their lowest levels with the Separation Index at 33.91 and the Dissimilarity Index at 47.55.

In summary, we demonstrate an effective strategy for getting a more comprehensive look at spatial assimilation dynamics by standardizing the two groups on specific characteristics and observing how segregation changes as the two groups move along a spatial assimilation trajectory based on one characteristic. We find that segregation changes the most with education, but also that citizenship and immigration status play an important role. In the particular case of citizenship and immigration we find that the changes in segregation as we move from recent immigrants without U.S. citizenship to U.S.-born citizens are due almost entirely to changes in the outcomes for Latinos. For Whites, citizenship and immigration do not change their residential outcomes very much at all as across the board they tend to live in neighborhoods with a high proportion White regardless.

V. Conclusion

Substantively, the analyses presented in this paper confirm that consistent with spatial assimilation theory, socioeconomic status and acculturation are positively related to contact with

Whites, an indicator of upward residential mobility. This is a finding that has been reaffirmed by the existing literature which relates the concept of social distance to residential patterns. For Latinos the benefit of having citizenship, better English ability, and higher education are evident.

There is more to this story however, because social characteristics only improve residential outcomes to a certain extent. The standardization and decomposition results highlighted this point by assigning Latinos both White group means on social characteristics and also White rates of return, first separately and then together. While standardization on White group means did increase contact with Whites somewhat, the major difference occurred when Latinos were assigned the White rates of return. The decomposition of the difference in outcomes between Latinos and Whites shows that the difference in rates of return makes the biggest contribution to the overall difference in contact with Whites.

From this finding, it is important to emphasize that disparities in social characteristics such as socioeconomic status, language ability and citizenship are only part of the source of overall segregation. There are disparities in how much Latinos can translate their social characteristics into better residential outcomes as compared to the extent that Whites can. The explanation for why Latinos still do not achieve the same level of residential contact with Whites that Whites do despite having the same social characteristics perhaps lies in the place stratification literature which addresses the issue of racial and ethnic discrimination. In the case of immigrants, acculturating in the United States through improved English language and citizenship may only get them as far as their U.S.-born counterparts. Opportunities for immigrants may exist in the United States, but being non-White will still be a barrier.

Methodologically, this paper has made a contribution by applying the conceptualization of segregation as a difference in group means, allowing for the ability to tie individual level

residential attainments to aggregate level residential segregation. This is a new way of studying

residential outcomes that opens the door to endless possibilities, as now the link between micro-

level social processes of residential attainments and macro-level residential patterns has been

established. In this paper we have demonstrated how this can be done using two popular

measures of segregation, the Separation Index and the Dissimilarity Index. Another

methodological contribution is the application of fractional logit regression to segregation

analysis. Fractional logit has not yet been appreciated and widely used in the sociological

literature, but it ought to be recognized for the advantages it brings for modeling bounded

variables between 0 and 1. While this paper did not go into detail regarding the technical

advantages of fractional logit, this has been explored in a companion paper that has more

thoroughly demonstrated fractional logit regression's attractive performance in comparison with

the alternative conventional methods (Fossett, Fox, and Powers 2014 [forthcoming]). For

segregation research where the standard indices of segregation and contact have scores ranging

between 0 and 1 and include the values of 0 and 1, fractional logit should be considered as a

highly attractive option.

The final methodological contribution of this paper is the application of standardization

and decomposition techniques to assess the components that contribute to residential inequality.

Standardization and decomposition has a long and respectable history in the social sciences and

in the field of demography especially. Here this paper has demonstrated that these techniques

are also very useful for segregation analysis and studies in inequality.

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Table 1. Descriptive Statistics

Variable	Whites		Latinos	
	Mean	*S.D.*	*Mean*	*S.D.*
Education (0-5)	3.21	1.21	1.50	1.38
HH Income (Ln)	10.80	1.22	10.28	1.21
Military	22%	0.42	7%	0.26
U.S.-Born Citizen	86%	0.34	29%	0.45
Naturalized Citizen	9%	0.28	25%	0.44
Non-Citizen	5%	0.21	45%	0.50
Recent Immigrant	5%	0.21	28%	0.45
English Ability (0-3)	2.93	0.35	2.05	1.02
Age	51.53	17.24	41.98	14.12
Single Mother HH	4%	0.19	11%	0.31
Other HH	48%	0.50	28%	0.45
Married HH	48%	0.50	61%	0.49
Moved in Last 5 Yrs	43%	0.50	51%	0.50
Unweighted N	92,125		60,240	
Weighted N	1,932,300		1,182,540	

Table 2. Separation Index

	Group Average on	
Group	Area Percent White*	Separation Index
Whites	80.79	49.60
Latinos	31.19	

Table 3. Dissimilarity Index

	Group Average on 0-1 Scoring on	
Group	Area Percent White*	Dissimilarity Index
Whites	84.62	64.16
Latinos	20.46	

Table 4. White-Latino Multivariate Results – Separation Index

Variables	Whites		Latinos	
	Coefficient	S.E.	Coefficient	S.E.
Education	0.263**	0.003	0.278**	0.003
Income (Ln)	0.106**	0.002	0.092**	0.003
Military	-0.155**	0.007	0.045**	0.014
U.S.-born Cit. (ref)	---	---	---	---
Naturalized Cit.	0.143**	0.012	-0.212**	0.010
Non-Citizen	-0.024	0.018	-0.446**	0.012
Recent Immigrant	-0.003	0.019	-0.057**	0.011
English Ability	0.118**	0.010	0.197**	0.005
Age				
30-59 (ref)	---	---	---	---
15-29	-0.125**	0.010	-0.257**	0.010
60+	0.234**	0.007	0.123**	0.012
Family				
Married (ref)	---	---	---	---
Single Mother	-0.328**	0.014	-0.215**	0.012
Other Family	-0.183**	0.006	0.089**	0.008
Moved <5 Yrs.	0.112**	0.006	0.208**	0.008
Constant	1.147**	0.007	-0.332**	0.009

*=significant at the $p < 0.05$ level; **=significant at the $p < 0.01$ level

Table 5. Standardization Results – Separation Index

Group	Comparison	Predicted Contact with Whites
Latinos	with Latino Group Means & Latino Rates of Return	30.57
	with White Group Means & Latino Rates of Return	54.39
	with Latino Group Means & White Rates of Return	71.66
	with White Group Means & White Rates of Return	82.26

Table 6. Components Analysis – Separation Index

| | Contribution to |
Components	Index Score
Group Means	23.82
Group Rates of Return	41.08
Interaction/Joint Impact	-13.22
Total Difference	51.69

Table 7. White-Latino Multivariate Results – Dissimilarity Index

Variables	Whites		Latinos	
	Coefficient	S.E.	Coefficient	S.E.
Education	0.422**	0.006	0.450**	0.006
Income (Ln)	0.161**	0.004	0.143**	0.007
Military	-0.259**	0.016	-0.002	0.026
U.S.-born Cit. (ref)	---	---	---	---
Naturalized Cit.	0.210**	0.026	-0.303**	0.020
Non-Citizen	-0.061	0.036	-0.678**	0.025
Recent Immigrant	0.025	0.040	-0.149**	0.025
English Ability	0.145**	0.019	0.349**	0.011
Age				
30-59 (ref)	---	---	---	---
15-29	-0.132**	0.023	-0.412**	0.022
60+	0.292**	0.015	0.276**	0.024
Family				
Married (ref)	---	---	---	---
Single Mother	-0.533**	0.029	-0.388**	0.028
Other Family	-0.284**	0.013	0.188**	0.017
Moved <5 Yrs.	0.263**	0.014	0.310**	0.016
Constant	1.285**	0.015	-0.824**	0.018

*=significant at the $p < 0.05$ level; **=significant at the $p < 0.01$ level

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Table 8. Standardization Results – Dissimilarity Index

Group	Comparison	Predicted Contact with Whites
Latinos	with Latino Group Means & Latino Rates of Return	16.35
	with White Group Means & Latino Rates of Return	50.29
	with Latino Group Means & White Rates of Return	73.31
	with White Group Means & White Rates of Return	87.18

Table 9. Components Analysis – Dissimilarity Index

Components	Contribution to Index Score
Group Means	33.94
Group Rates of Return	56.96
Interaction/Joint Impact	-20.07
Total Difference	70.83

Assessing the Impact of Micro-Level Factors on Overall Segregation Patterns

Table 10. Education (Separation Index)

Group	High School Degree	Post-Graduate Degree
Whites	77.15	88.14
Latinos	43.24	63.72
Separation Index	33.91	24.42

Table 11. Education (Dissimilarity Index)

Group	High School Degree	Post-Graduate Degree
Whites	80.07	93.44
Latinos	32.52	65.00
Dissimilarity Index	47.55	28.44

Table 12. Income (Separation Index)

Group	$15K	$90K
Whites	75.25	78.62
Latinos	41.03	45.07
Separation Index	34.22	33.55

Table 13. Income (Dissimilarity Index)

Group	$15K	$90K
Whites	77.40	82.07
Latinos	29.49	35.11
Dissimilarity Index	47.91	46.96

Table 14. Citizenship and Immigration (Separation Index)

Group	Foreign-Born, Non-Citizen, <=15 Yrs. in U.S.	Foreign-Born, Non-Citizen, >15 Yrs. in U.S.	Foreign-Born, Citizen	U.S.-Born Citizen
Whites	76.67	76.73	79.56	77.15
Latinos	31.55	32.79	38.14	43.24
Separation Index	45.12	43.94	41.42	33.91

Table 15. Citizenship and Immigration (Dissimilarity Index)

Group	Foreign-Born, Non-Citizen, <=15 Yrs. in U.S.	Foreign-Born, Non-Citizen, >15 Yrs. in U.S.	Foreign-Born, Citizen	U.S.-Born Citizen
Whites	79.49	79.07	83.21	80.07
Latinos	17.41	19.65	26.24	32.52
Dissimilarity Index	62.08	59.42	56.97	47.55