



## Article

# Testing the Spatial Assimilation Model on Black Ethnic Immigrant Locational Outcomes within Mature and Developing Suburbs

Grigoris Argeros

Department of Sociology, Anthropology, & Criminology, Eastern Michigan University, Ypsilanti, MI 48197, USA; gargeros@emich.edu

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**Abstract:** This study investigates black ethnic immigrant group differences in residential outcomes between developing and mature suburbs. It evaluates the extent to which foreign-born black ethnic groups' socioeconomic status (SES) and acculturation characteristics agree with the outlines of the spatial assimilation model. Binomial logistic regression models are calculated, using data from the 2012–2016 IPUMS ACS, to examine the impact of place of birth/nativity status, SES, acculturation, family/household characteristics, and region on residence in developing versus mature suburbs within U.S. metropolitan areas. The results reveal mixed results for the expectations of the spatial assimilation model. On the one hand, and in agreement with the spatial assimilation model, residence in mature and developing suburbs is a function of increments in household income and educational levels. On the other hand, the multivariate results reveal suburban type residential outcomes that vary by place of birth and nativity status. The effects of acculturation also reveal findings that diverge from the expectations of the spatial assimilation model.

**Keywords:** suburban; spatial assimilation; race; ethnicity; black immigrants

## 1. Introduction

According to the spatial assimilation model increasing socioeconomic status (SES) levels, including acculturation, should eventually allow foreign-born households of different racial and ethnic background to reside in the suburbs [1–4]. Traditionally, suburban residents are presumed to have access to the kinds of opportunities and assets conducive to improved socioeconomic and health outcomes relative to their central-city counterparts [5–7]. Sociodemographic, economic, and institutional transitions within the suburbs, however, pose challenges to the spatial assimilation model's main theoretical argument [8–10]. Insofar as the residential attainment outcomes for most foreign-born groups throughout most of the twentieth century has followed the positive linear relationship between their individual-level SES attainments and suburban residence, less is known on how the above relationship fares in describing the suburban outcomes of immigrant black ethnic groups within a changing suburban context in the twenty-first century.

The suburbs no longer represent the prototypical type of residential settlement as represented and embodied in both academic and non-academic discourse [11]. Demographic, structural, and compositional changes have altered the traditional image of the suburbs as consisting of predominately higher SES white households residing in single-family homes relative to their central-city residents [9]. Suburbs in the twenty-first century have become more racially and ethnically diverse, with an increasing share of foreign-born, poverty, and crime rates [12,13]. The aforementioned changes are more pronounced when differentiating between suburbs closer to the city, which tend to be older (mature), and their newer counterparts located further away (developing) [14–17]. Mature suburbs have

experienced larger increases in poverty, declining household income levels, and are characterized by an increasing share of older housing stock relative to their developing suburban counterparts [16,18–20]. All of the above changes within suburbia have occurred against the demographic backdrop of a changing black immigrant population.

The foreign-born black population has significantly increased in size and diversity from the 1980s. With respect to the size of their population, they have grown from approximately 816,000 in 1980 to 4.2 million in 2016—corresponding to an approximate 415% increase [21]. While the majority of black immigrants come from the Caribbean, the share of African immigrants has also considerably increased. For example, during the 2000–2015 time period, the African immigrant population increased by approximately 134%—from 881,000 to 2,060,000 persons [22]. As a result, foreign-born Africans' share of the overall black immigrant population has increased by approximately 63%, from 24% in 2000 to 39% in 2016 [21]. In addition to population size, national origin diversity and compositional differences have also increased within the black immigrant population, including for the year of immigration, English language proficiency levels, educational attainment, and homeownership levels [23].

Distinguishing black groups by place of birth, the study investigates the relationship between their SES characteristics and their locational attainments between mature and developing suburbs. Insofar as the spatial assimilation model assumes a positive linear relationship between individual-level SES and suburban outcomes, sociodemographic and economic changes occurring within suburbia suggest that black immigrants' suburban attainments will vary between its mature and developing counterparts. The study's main contribution to the literature on racial and ethnic immigrant residential mobility and attainment is its tentative attempt to revisit the traditional spatial assimilation model by identifying the factors that channel immigrant black groups into developing or mature suburbs relative to their native-born peers. The bivariate and multivariate analyses of recent individual-level census data will provide an up-to-date glimpse of the relationship between black immigrants' SES and suburban attainments, given their sizeable increase in size and sociodemographic diversity.

## 2. Literature Review

Research examining racial and ethnic group locational attainment outcomes has relied on the spatial assimilation model, which combines components of residential mobility with status attainment theory [4]. The spatial assimilation model predicts a gradual progression in terms of the qualitative desirability of the neighborhoods racial and ethnic groups move into. Specifically, immigrants will initially reside in least desirable central-city neighborhoods with other co-ethnic members due to their lower levels of SES and acculturation. Over time and with increasing SES and English language fluency levels, the foreign-born should eventually be able to reside in suburban neighborhoods with a higher share of majority group members (non-Hispanic whites), more desirable resources, amenities, and resources [3,4].

Despite the spatial assimilation model's emphasis on SES and acculturation levels, there is evidence that the strength of these variables as predictors for suburban attainment is weakening and has differential effects for certain racial/ethnic groups [1]. For example, SES is more important for Asians' residential proximity to whites in suburban locations. The declining significance of acculturation levels for Asians' residential outcomes is most likely due to their ability to circumvent cities and move into suburban neighborhoods with other co-ethnic group members [1]. Such Asian immigrant suburban ethnic enclaves allow their co-ethnic members with lower SES and limited English proficiency levels to live in higher income suburban neighborhoods [24,25]. On the other hand, both SES and acculturation variables are more important for Hispanics' residential outcomes [26].

A possible explanation for the Hispanic case might be due to the decreasing level of spatial distance with non-Hispanic whites as evinced by residential segregation measures, such as the index of dissimilarity and isolation. Hispanics have higher residential segregation levels from whites in both suburbs and cities than Asians [27], as well as are less likely to reside in neighborhoods with more whites relative to Asians even when taking into consideration differences in SES and acculturation

levels [28]. To the degree that residential segregation measures serve as a robust measure of sociospatial distance between racial and ethnic groups, then Asians encounter relatively fewer obstacles to residing in neighborhoods with more majority group members, i.e., non-Hispanic white households, compared to Hispanics. Moreover, Asians are the least spatially isolated group in the suburbs relative to whites, blacks, and Hispanics [27]. With respect to residential preferences, whites are more likely to prefer and feel more comfortable with Asian potential neighbors than with Hispanics, even when controlling for socioeconomic status [25,28]. Race, racial attitudes, and stereotyping are the major factors driving white's preferences for Hispanic [29] and Asian neighbors, which in turn are exemplified in the differential impact of the two key factors of the spatial assimilation model.

On average, the spatial assimilation model explains a large proportion of white, Asian, and to a lower degree, Hispanic suburban outcomes [1]. Household income, educational attainment levels, including acculturation characteristics, such as length of time residing in the U.S. and English proficiency levels, are positively related to residing in suburban neighborhoods with higher share of white and income levels [1,29]. Conversely, the spatial assimilation model poorly predicts non-white groups' suburban outcomes, such as African Americans and black-Hispanics, who are more likely to live in lesser quality and poorer suburban communities relative to whites, independent of SES differences [26,28,30,31].

The spatial assimilation model's failure to fully explain the process by which non-white groups, such as African Americans and black-Hispanics, secure a suburban residence relative to those of whites has generated the development of a supplemental, yet alternative, theoretical model, known as the place stratification model. Contrary to the spatial assimilation model, the place stratification model emphasizes structural and institutional factors that affect suburban attainment outcomes. Specifically, it suggests that racial and ethnic groups are hierarchically ordered and sorted into neighborhoods of varying quality, resources, and SES, whereby the most powerful groups, i.e., whites, attempt to residentially distance themselves from less powerful groups [32]. The manners in which white groups distance themselves are exhibited in the form of individual and institutional acts of prejudice and discrimination within the housing market, which directly or indirectly channel minority renters or homeseekers to qualitatively less desirable suburban neighborhoods [33–37]. As a result, whites are more likely, on average, to move into qualitatively more desirable suburban communities followed by Asians, Hispanics, and blacks, even when taking into consideration differences in SES attainments and acculturation characteristics [2,38].

To the extent that the spatial assimilation theoretical model describes the process by which groups convert their individual-level income, educational, and acculturation characteristics into residence in suburban neighborhoods, the present study, however, tentatively utilizes the model to outline the process by which groups secure residence in mature or developing counterparts. Rapid population growth, increasing poverty and crime rates, as well as increasing diversity in terms of race/ethnicity and nativity status represent a few of the characteristics differentiating mature suburbs from their developing counterparts. Moreover, mature suburbs are also characterized as having a higher share of older housing structures, i.e., built during the 1950s and 1960s, relative to developing suburbs which tend to have newer housing units and developments as found in developing suburban rings [14]. Insofar as mature and developing suburbs tend to differ with respect to SES levels, resources, and opportunities available to its residents [9], the present study tests the spatial assimilation model's key proposition, namely that the relationship between racial and ethnic groups SES, acculturation, and locational outcomes will also vary between mature and developing suburbs.

### 3. Hypotheses

Residence in mature and developing suburbs is expected to be affected by racial and ethnic groups' SES and acculturation characteristics. Specifically, racial and ethnic group members SES attainments, and acculturation characteristics, will be positively related to residence in developing suburbs. Gaps between each racial and ethnic group's likelihood of residing in developing suburban rings compared

to their mature counterparts is expected to disappear or decrease when accounting for differences in income and educational levels, including acculturation, family/household characteristics, and the region each group resides in. Furthermore, the native-born are expected to be more likely than the foreign-born to reside in developing than mature suburbs, due to the former group's expected higher SES levels, such as in household income and educational attainment levels. Meanwhile, the place stratification model suggests that differences between black and non-black groups' likelihood of residing in developing suburbs will remain, net of differences in nativity status/place of birth, SES, acculturation, and the remaining theoretical relevant variables.

#### 4. Data Methodology

The dataset used is the 2012–2016 IPUMS American Community Survey (ACS) [39]. The ACS consists of individual-level data on a number of topics pertaining to racial and ethnic groups' socioeconomic and demographic characteristics. As with every dataset, the IPUMS is also not free of limitations with respect investigating the relationship between racial and ethnic groups' SES and locational outcomes. The three main limitations are: the dataset's cross-sectional structure, its incapability to identify the foreign-born undocumented population [40], and the fact that each decennial census has disproportionately overcounted or undercounted various racial/ethnic groups [41,42]. In contrast to aggregate-level data of the decennial Census Summary Files, the ACS continues to serve as the most appropriate alternative dataset for examining the process by which racial and ethnic groups convert their individual-level SES and acculturation characteristics into residing in developing or mature suburbs [2,43,44].

The dataset is limited to head-of-households between the ages of 25–64 and who are native-born non-Hispanic white, native-born non-Hispanic black, non-Hispanic black Caribbean, and non-Hispanic black African; henceforth referred to as white, black, English Caribbean, French Caribbean, and black African unless otherwise noted. The sample is also limited to head-of-households who are between 25–64 years old. Limiting the sample to this age group aims to eliminate individuals who might be in college and those not in the paid labor force. and reside in the suburbs of U.S. metropolitan areas. Based on previous research, the present study uses the questions on race, specifically those individuals reporting a single race, birthplace, and Hispanic origin in identifying the black ethnic groups of interest [44–48]. The decision to exclude the question on ancestry is due to native-born black Americans' and black Caribbeans' sociohistorical and ancestral relationship to the continent of Africa. The inclusion of ancestral origin increases the risk of overestimating the “true” native-born black American population by at least one-fifth than the actual count [48]. A similar argument can also be made for black Caribbeans, due to their shared historical and ancestral relationship with that of African-Americans. It should be noted however, that although Logan and Deane include ancestral origin for identifying black immigrant groups, the present dataset's unweighted totals for the groups concerned are not greatly different from those found in the above study. Given that previous research reveals that Caribbean immigrants' SES attainments vary by linguistic region [49], black Caribbeans are further differentiated between English and French speaking households. Due to a small sample size, Spanish-speaking black Caribbeans are excluded.

Both the predictor and dependent variables are analogous to those used in previous literature examining locational attainment outcomes among ethnic/racial groups. The dependent variable, “suburb type”, differentiates between mature and developing suburbs. Following previous research mature suburbs are measured as those in which over fifty-percent of housing is built in 1969 or earlier, and developing suburbs, those in which more than fifty-percent of housing is built in 1970 or later [14,17,20,50,51]. Specifically, the variable METRO in the IPUMS ACS database is used to create the desired dependent variable. METRO identifies households within a non-metropolitan or metropolitan area, and further distinguishes households in the latter category by whether they reside within or outside the metropolitan area's central city. After selecting only those living with metropolitan areas, the original METRO variable was recoded into a dichotomous variable that

distinguishes between those residing in a metropolitan area's central-city or outside the central-city (hereafter stated as "suburb" unless otherwise noted). The identification of suburban neighborhoods as used in the present study raise two limitations. First, neighborhoods with fewer than the legally allowed threshold regarding PUMAS, i.e., 100,000 residents, are not identifiable, due to the Census Bureau's confidentiality rules regarding PUMS data [38]. Second, non-urban (rural) areas located beyond central-cities cannot be excluded, again attributable to the Census Bureau's confidentiality rules. Nevertheless, the central-city/suburban dichotomy has been extensively used in the literature on racial and ethnic group locational attainment research [1,26,38]. The creation of the dependent variable occurred in two steps. First, all households located within a metropolitan and non-metropolitan area are identified, the former of whom are differentiated between those households residing within and outside a designated metropolitan area's central-city. In the second step, suburbs are differentiated between developing and mature based on the year housing was built.

The independent variables measure SES, acculturation, household characteristics, and regional differences. The indicators that tap into the measurement of SES are: household income, a seven-level ordinal variable measured in increments of \$20,000, education, a four-level categorical variable measuring the head-of-household's highest year of degree earned, and homeownership. English language proficiency levels and years residing in the U.S. constitute the indicators measuring acculturation status. Past research documents the importance of also controlling for family/household characteristics in the investigation of racial and ethnic groups' suburban attainment outcomes [1,2,31,52–54]. Household characteristics are measured by: householder's sex, age, marital status, the presence of non-family members, and the presence of children under eighteen years old. The final predictor, region, controls for regional differences of where each group resides in.

Both bivariate and multivariate analyses constitute the data analysis section. The bivariate analyses compare the descriptive characteristics both between and within each group of interest. Bivariate group differences are assessed by calculating Tukey's B post-hoc tests. In the multivariate segment of the analyses logistic regression models, both pooled and group specific, are calculated to determine which independent variables are more likely to predict each black ethnic group's location by suburban type, that is residing either in a developing or a mature suburb. Provided that the dependent variable is dichotomous, binomial logistic regression is the most favored multivariate method to use [55]. Multicollinearity tests are conducted on all predictors, which are also dummy coded. For ease of interpretation, the discussion of the results only focuses on odds-ratios, in which an odds-ratio higher than 1.0 translates to a higher predicted probability of residing in developing versus mature suburbs, and an odds-ratio lower than 1.0 refers to a higher predicted probability of residing in mature versus developing suburbs.

## 5. Descriptive Results

Place-of-birth and nativity status descriptive differences between the groups of interest are presented in Table 1. The two key findings from the table—residential differences in suburban type and SES among black immigrants—underscores the importance of disaggregating foreign-born black groups by place of birth. Because of space limitations, we limit the discussion of the results focusing on differences in SES and acculturation. With respect to suburban type residence, Table 1 reveals that black African households are more likely to live in developing suburbs than all the other immigrant black groups including foreign-born white households. At the other end of the hierarchy, French Caribbeans have a lower share of households residing in developing suburbs than their foreign- and native-born counterparts.

In agreement with previous studies, the results in Table 1 also reveal differences by SES that vary by place of birth, race, and ethnicity. British Caribbean and black African households register higher household income and educational attainment levels than their native-born peers, but not compared to native-born white households. On the other hand, French-Caribbean households have lower educational and household income levels relative to all the other groups, irrespective of nativity

status. The final SES indicator, i.e., tenure status, also reveals results that vary by race/ethnicity and nativity status. Not surprisingly, all immigrant black groups have lower homeownership levels than their respective white counterparts. Nativity status differences among black groups reveal that English- and French-Caribbeans are more likely to own their housing unit than their native-born counterparts. With respect to differences among black immigrants, English-Caribbean households have the highest homeownership rate, followed by French-Caribbean and black African households.

**Table 1.** Percentage differences by race/ethnicity and nativity status/place of birth.

		Native-Born		Foreign-Born			
		White	Black	White	Caribbean English	Caribbean French	Africans
Suburb Type							
	Mature	38.8	35.4 *	36.9 **	41.2 **	50.4 **	31.2 **
	Developing	61.2	64.6 *	63.1 **	58.8 **	49.6 **	68.8 **
SES							
	Household Income						
	\$0–\$19,999	7.5	18.1 *	8.2 **	10.3 **	14.3 **	10.7 **
	\$20,000–\$39,999	10.6	18.5 *	11.5 **	17.2 *	22.4 **	18.8 *
	\$40,000–\$59,999	13.2	16.8 *	12.5 **	17.2 *	18.9 **	17.3 *
	\$60,000–\$79,999	13.4 **	13.1	12.1 **	13.8	14.0	14.1
	\$80,000–\$99,999	12.1	9.8 *	10.8 **	12.0 **	9.4 *	10.3 *
	\$100,000–\$119,000	10.4	7.3 *	9.2 **	8.7 **	6.2 *	7.9 *
	\$120,000 and up	32.8	16.4 *	35.8 **	20.9 **	14.9*	20.9 **
	Education of Householder						
	Less than High School Diploma	3.5	6.7 *	7.0 *	7.8 **	15.2 **	5.5 **
	High School Diploma	21.1	24.0 *	18.2 **	23.2 *	23.8 *	14.7 **
	Some College	31.4	38.5 *	25.1 **	34.1 **	37.7 *	30.0 **
	College Degree or More	44.0	30.7 *	49.7 **	34.9 **	23.3 **	49.8 **
	Homeownership	79.5	52.4 *	75.1 **	63.2 **	54.9 **	49.6 **
Acculturation							
	Years Residing in the United States						
	Native-Born	100.0	100.0	-	-	-	-
	0–5 years	-	-	7.1	3.3	4.9	10.5
	6–10 years	-	-	7.3	6.7	8.9	17.7
	11–15 years	-	-	11.5	10.9	15.3	22.9
	16–20 years	-	-	12.4	11.9	14.3	17.3
	21+ years	-	-	61.8	67.3	56.7	31.5
	English Language Ability						
	Speaks English only	97.5	97.8 *	43.2 **	95.6 **	0.0	21.6 **
	Speaks English very well or well	2.4	2.1 *	51.9 **	4.3 **	87.2 **	75.7 **
	Speaks English not well or not at all	0.1 **	0.1	4.9 **	0.1	12.8 **	2.7 **
Family/Household Status							
	Sex						
	Male	52.5	37.1 *	58.1 **	38.5 *	44.1 **	60.4 **
	Female	47.5	62.9 *	41.9**	61.5 *	55.9 **	39.6 **
	Marital Status						
	Married	63.3	37.6 *	70.0 **	49.1 **	56.5 **	62.2 **
	Never Married	15.2	33.6 *	10.5 **	20.8 **	18.5 **	15.4 **
	Others	21.5	28.9 *	19.4 **	30.0 *	25.0 **	22.4 **
	Number of Families in Household						
	1 Family	96.3 **	96.1	96.6 **	95.2 **	94.0 **	92.9 **
	1+ Family	3.7 **	3.9	3.4**	4.8 **	6.0 **	7.1 **
	Age of Householder						
	25–34	14.8	16.6 *	12.5 **	11.6 **	12.8 **	17.5 *
	35–44	20.7	23.3 *	23.7 *	23.1 *	28.2 **	32.0 **
	45–54	30.6	30.1 *	32.2 **	35.4 *	31.5	31.5
	55–64	33.9	30.0 *	31.6 **	29.9 *	27.6 *	19.0 **
	Children in Household						
	No Children Present <18	83.3	77.7 *	84.6 **	75.4 **	69.4 **	79.1 *
	Children Present <18	16.7	22.3 *	15.4 **	24.6 **	30.6 **	20.9 *
	Household Size						
	1–2 Persons	52.2	55.7 *	45.3 **	42.7 **	27.3 **	35.2 **
	3–4 Persons	37.2	33.4 *	41.0 **	40.9 **	43.4 **	39.0 **
	4+ Persons	1.6 **	10.9	13.6 **	16.5 **	29.2 **	25.8 **
Region							
	Northeast	38.3	18.0 *	42.4 **	40.5 **	42.1 **	26.7 **
	Midwest	21.8	18.2 *	15.4 **	1.8 **	1.1 **	10.3 **
	South	27.4	55.1 *	25.9 **	54.9 *	56.3 *	53.2 **
	West	12.5	8.8*	16.2 **	2.8 **	0.5 **	9.8 *
N		679,251	76,964	40,309	5345	3039	5958

Source: 2012–2016 American Community Survey (ACS) \*  $P < 0.05$ ; \*\*  $P < 0.01$ .



Place of birth differences in acculturation characteristics mirror the results of previous studies [44,56–58]. All three foreign-born black ethnic groups have high English language fluency levels—over 75%. On the other hand, a higher share of French Caribbean households (13%) are more likely to either not speak English well or not at all relative to the English Caribbean (0.1%) and black African households (2.7%). With respect to length of time spent in the United States, black African households are more likely to be recent arrivals relative to the other two foreign-born black groups. For example, 28% of black African households have been living in the U.S. for less than ten years compared to 10% and 14% of English Caribbean and French Caribbean households, respectively.

In addition to the bivariate SES differences between the racial and ethnic groups of interest, Table 2 also reveals SES differences by the type of suburban neighborhood of where each group resides. On average, English Caribbean and black African households are more likely to live in both mature and developing suburbs with higher SES and lower poverty levels than native-born black American households, but less likely to do so than native- and foreign-born white households. The results pertaining to the suburban neighborhoods of where French-Caribbeans reside reveal a more mixed picture. On the one hand, French Caribbean households are more likely to reside in lower SES developing and mature suburbs than the other two foreign-born black ethnic immigrant groups, including foreign-born white households. Meanwhile, the same group is more likely to reside in mature suburbs with higher income and homeownership levels than those in which native-born black households reside, though the opposite is true with respect to developing suburbs. We now continue with the multivariate results, which evaluate the degree to which the aforementioned bivariate differences between the groups of interests, including by suburban type residence, is accounted by disparities in income, education, tenure status, acculturation status, and the remaining theoretically relevant predictors.

**Table 2.** Selected SES Characteristics by Suburban Type.

		Native-Born		Foreign-Born			
		White	Black	White	Caribbean English	Caribbean French	Africans
Mature	Mean Household Income	\$104,208	\$61,923 *	\$115,148 **,*	\$82,008 **,*	\$71,135 **,*	\$73,020 **,*
	Percent College Degree or More	41.0	23.7 *	45.4 **,*	29.5 **,*	21.0 **,*	45.2 **,*
	Percent Owned Housing Units	77.3	48.0 *	73.3 **,*	62.3 **,*	58.7 **,*	42.1 **,*
	Percent Below 100 Poverty	7.7	20.4 *	8.3 **,*	9.8 **,*	15.3 **,*	12.8 **,*
Developing	Mean Household Income	\$117,458	\$76,562 *	\$125,280 **,*	\$83,454 **,*	\$68,446 **,*	\$87,069 **,*
	Percent College Degree or More	45.8	34.6 *	52.2 **,*	38.7 **,*	25.6 **,*	51.9 **,*
	Percent Owned Housing Units	81.0	54.8 *	76.2 **,*	63.8 **,*	51.0 **,*	53.0 **,*
	Percent Below 100 Poverty	6.0	14.6 *	7.8 **,*	9.5 **,*	17.6 **,*	11.5 **,*

Source: 2012–2016 American Community Survey (ACS) \* Statistically significant from native-born white households,  $P < 0.05$ ; \*\* Statistically significant from native-born black households,  $P < 0.05$ .

## 6. Multivariate Results

We begin the discussion of the multivariate results by focusing on the pooled logistic regression models that assess the effects of each independent variable on the odds of living in developing versus mature suburbs (Table 3). The first model controls only for nativity status and place of birth, while the second model incorporates all the three SES indicators, i.e., household income, education, and homeownership. Models three and four add the acculturation and household status variables respectively, and finally, Model five, the “full” model, controls for all the independent variables, including region.

**Table 3.** Binary Logistic Regression Odds Ratios Predicting Suburban Residence Type (vs. Mature Suburbs)—Pooled Models.

	Model I	Model II	Model III	Model IV	Model V
<b>Race/Ethnicity/Place-of-Birth (ref. = Native-Born Whites)</b>					
Native-Born Black Americans	1.155 *	1.291 *	1.292 *	1.366 *	1.388 *
Foreign-Born Whites	1.084 *	1.086 *	1.079 *	1.102 *	1.105 *
Caribbean English	0.903 *	0.970	0.916 *	0.971	1.029
Caribbean French	0.623 *	0.708 *	0.743 *	0.785 *	0.834 *
Africans	1.398 *	1.493 *	1.429 *	1.482 *	1.524 *
<b>Household Income (ref. = \$120,000 and up)</b>					
\$0–\$19,999		0.688 *	0.687 *	0.780 *	0.770 *
\$20,000–\$39,999		0.722 *	0.722 *	0.791 *	0.783 *
\$40,000–\$59,999		0.761 *	0.761 *	0.812 *	0.804 *
\$60,000–\$79,999		0.798 *	0.799 *	0.830 *	0.822 *
\$80,000–\$99,999		0.849 *	0.85 *	0.865 *	0.858 *
\$100,000–\$119,000		0.920 *	0.921 *	0.927 *	0.921 *
<b>Education of Householder (ref. = College Degree or more)</b>					
Less than High School Diploma		0.783 *	0.789 *	0.786 *	0.788 *
High School Diploma		0.801 *	0.801 *	0.802 *	0.804 *
Some College		0.964 *	0.964 *	0.962 *	0.953 *
<b>Renter (vs. owner)</b>					
		0.917 *	0.913 *	0.922 *	0.919 *
<b>Years Residing in the United States (ref. = 21+ years)</b>					
0–5 years			1.524 *	1.359 *	1.354 *
6–10 years			1.289 *	1.168 *	1.166 *
11–15 years			1.150 *	1.060 *	1.057 *
16–20 years			1.129 *	1.066 *	1.063 *
<b>English Language Ability (ref. = Speaks English only)</b>					
Speaks English very well or well			0.883 *	0.863 *	0.868 *
Speaks English not well or not at all			0.821 *	0.817 *	0.819 *
<b>Sex (ref. = Male)</b>					
Female dummy1				0.940 *	0.943 *
<b>Marital Status (ref. = Married)</b>					
Single				0.666 *	0.668 *
Others				0.892 *	0.894 *
<b>Number of Families in Household (ref. = 1 family)</b>					
1+ family				0.907 *	0.903 *
<b>Age of Householder (ref. 35–44)</b>					
Age Control 25–34				1.067 *	1.065 *
Age Control 45–54				0.895 *	0.897 *
Age Control 55–64				0.811 *	0.812 *
<b>Children in Household (ref. = Children Present &lt;18)</b>					
No child dummy1				0.984 *	0.982 *
<b>Household Size (ref. = 1–2 persons)</b>					
3–4 Persons				0.915 *	0.916 *
4+ Persons				0.946 *	0.941 *
<b>Region (ref. = Northeast &amp; South)</b>					
Midwest & West					1.207 *
N			810,866		
Nagelkerke R Square	0.001	0.014	0.014	0.021	0.024

Source: 2012–2016 American Community Survey (ACS) \*  $P < 0.05$ ; \*\*  $P < 0.01$ .

A key result from the pooled models is that race, ethnicity and place of birth remains an important predictor of black group's residence in developing suburbs. According to Table 3, black Africans are more likely, among all foreign-black households, to reside in developing suburbs relative to both foreign- and native-born black and white households. Black African households' higher odds of residing in developing suburbs continues to hold even when taking into consideration differences in income, education, tenure status, acculturation, and the remaining variables (see Models II–V). While the odds of residing in developing suburbs for French Caribbean households appears to be mediated by differences in SES, acculturation, and the remaining predictors, they consistently register lower odds of living in developing suburbs relative to both black and white households (see Models I–V). The findings pertaining to English Caribbeans reveal a more mixed picture. While the effects of nativity status/place of birth (Model I) and SES and acculturation (Model III) continue to produce lower odds of residing in developing suburbs, English Caribbeans are no more likely than the other groups to reside in developing suburbs when adding for the effects of family/household characteristics (Model IV) and region (Model V).



We now continue with the results estimated for each group separately (Table 4), which evaluate the degree to which the aforementioned differences continue to remain, or not, when the black groups of interest are differentiated by place-of-birth and controlling for SES, acculturation, and the remaining variables. By demonstrating how the predictors may vary in their effects for native- and foreign-born blacks, the results from these models provide us the opportunity to explore each group's suburban type attainment in developing versus mature suburbs in relation to their SES characteristics.

**Table 4.** Group Binary Logistic Regression Results Predicting Suburban Residence Type (vs. Mature Suburbs)—Odds Ratios.

	Native-Born		Foreign-Born			
	White	Black	White	Caribbean English	Caribbean French	Africans
<b>Household Income (ref. = \$120,000 and up)</b>						
\$0–\$19,999	0.771 *	0.705 *	0.974	1.377 *	1.240	0.766 *
\$20,000–\$39,999	0.773 *	0.737 *	0.904 *	1.168	1.327 *	0.827 **
\$40,000–\$59,999	0.794 *	0.775 *	0.844 *	1.383 *	1.146	0.743 *
\$60,000–\$79,999	0.809 *	0.839 *	0.917 *	1.104	0.993	0.621 *
\$80,000–\$99,999	0.847 *	0.856 *	0.923 *	1.233 *	1.237	0.667 *
\$100,000–\$119,000	0.918 *	0.883 *	0.906 *	1.086	1.048	0.774 *
<b>Education of Householder (ref. = College Degree or more)</b>						
Less than High School Diploma	0.852 *	0.598 *	0.603 *	0.425 *	0.496 *	0.769 *
High School Diploma	0.828 *	0.617 *	0.737 *	0.604 *	0.621 *	0.778 *
Some College	0.973 *	0.764 *	0.976	0.740 *	0.846 **	0.915
<b>Renter (vs. owner)</b>	0.930 *	0.956 *	0.849 *	0.882 **	1.264 *	0.678 *
<b>Years Residing in the United States (ref. = 21+ years)</b>						
0–5 years			1.464 *	1.834 *	1.195	0.989
6–10 years			1.249 *	1.094	1.272	0.989
11–15 years			1.031	1.073	1.267 *	1.094
16–20 years			1.064 ***	1.061	1.179	1.007
<b>English Language Ability (ref. = Speaks English only)</b>						
Speaks English very well or well	0.854 *	0.852 *	0.877 *	0.949	1.040	1.131 **
Speaks English not well or not at all	1.086	1.002	0.748 *			1.035
<b>Sex (ref. = Male)</b>						
Female dummy1	0.943 *	0.943 *	0.943 *	0.899	0.916	0.946
<b>Marital Status (ref. = Married)</b>						
Single	0.656 *	0.702 *	0.749 *	0.725 *	0.835	0.797 *
Others	0.892 *	0.887 *	0.946 **	0.870 *	1.077	0.830 *
<b>Number of Families in Household (ref. = 1 family)</b>						
1+ family	0.913 *	0.897 *	0.816 *	0.830	0.995	0.746 *
<b>Age of Householder (ref. 35–44)</b>						
Age Control 25–34	1.058 *	1.180 *	1.007	1.011	0.968	1.077
Age Control 45–54	0.900 *	0.863 *	0.973	0.848 *	0.799 *	0.822 *
Age Control 55–64	0.828 *	0.706 *	0.863 *	0.746 *	0.764 *	0.681 *
<b>Children in Household (ref. = Children Present &lt;18)</b>						
No child dummy1	0.982 *	0.987	1.047	1.045	1.114	0.932
<b>Household Size (ref. = 1–2 persons)</b>						
3–4 Persons	0.922 *	0.888 *	0.899 *	0.847 *	1.141	1.101
4+ Persons	0.964 *	0.834 *	0.940 *	0.671 *	0.955	0.969
<b>Region (ref. = Northeast &amp; South)</b>						
Midwest & West	1.287 *	0.525 *	1.656 *	1.909 *	2.115 *	1.470 *
N	679,251	76,964	40,309	5,345	3,039	5,958
Nagelkerke R Square	0.024	0.066	0.041	0.045	0.045	0.046

Source: 2012–2016 American Community Survey (ACS). \*  $P < 0.05$ ; \*\*  $P < 0.10$ ; \*\*\*  $P < 0.001$ .

Table 4 presents the group binary logistic regression results predicting suburban residence type, i.e., residing in developing versus mature suburbs. While the odds on residing in developing suburbs are, on average, positively related with SES, Table 4 also reveals a set of findings that vary by nativity status/place-of-birth. Looking first at household income, the results show that its effect on the odds of residing in developing suburbs varies across each black ethnic immigrant group. While the effect of income is consistently positive across all income categories for African households and native-born black Americans, the results for French and English Caribbean households, however, present a mixed picture. With the exception of French Caribbean households' earning between \$20,000–\$39,000, all remaining income categories have a non-statistically significant effect on the group's odds in residing in developing suburbs.

Meanwhile, more income categories appear to have an effect of English Caribbean households' predicted odds of residing in developing versus mature suburbs. For example, and contrary to the expectations of the spatial assimilation model, lower income English and French Caribbean households, i.e., those earning less than \$20,000 and between \$20,000–\$39,999 respectively, have higher odds of residing in developing suburbs than their native-born counterparts, including both native- and foreign-born white households. Furthermore, higher income English Caribbean households, i.e., those earning between \$80,000–\$99,999, have higher odds ratios of residing in developing suburbs than both foreign- and native-born white and black households. Finally, lower income African households, i.e., those earning less than \$20,000, incur a lower loss to residing in developing suburbs than native-born black Americans, but the pattern reverses, however, for higher income households. In other words, lower income African households are more likely to reside in in developing suburbs than their respective native-born black Americans, while the opposite is true among higher income households.

Immigrant black ethnic groups' odds of residing in developing suburbs is also affected by educational attainment levels. Despite the positive effect of education, all foreign-born black groups register lower odds of residing in developing suburbs relative to both native- and foreign-born white households. Place of birth differences between black ethnic groups reveal a stronger effect of education for black African households with a high school diploma or less relative to both their native- and foreign-born black counterparts, independent of differences in SES, acculturation, household status, and region.

The final SES indicator, homeownership, also reveals statistically significant differences that vary by place of birth. With the exception of French Caribbean households, the direction of the effects of tenure status suggest that being a renter decreases the odds of residing developing suburbs. French Caribbean renter households are more likely to reside in developing suburbs than their homeowner peers, including both native- and foreign-born white and black households. Another key finding from the effects of tenure status, as revealed in Table 4, is that the relative loss in the odds of residing in developing suburbs associated with renting is higher among black African households than native born black and white households. In other words, foreign-born black African households accrue greater returns to owning a home than their native-born counterparts, including native-born white households. In addition, English Caribbean households accrue lower returns to owning a home than foreign-born white households. In other words, the relative loss in the odds of residing in developing suburbs associated with renting is larger among foreign-born white households than English Caribbean households. For example, relative to households who own their housing unit, English Caribbean renter households are nearly 12 percent less likely to live in developing suburbs relative to 15 percent for foreign-born white households.

The effect of years residing in the U.S. and English language proficiency levels reveal results that run counter to the expectations of the spatial assimilation theory. In regard to years residing in the U.S., recently arrived English Caribbean households, i.e., those that have lived in the U.S. for less than five years, and French Caribbeans, i.e., those that have resided in the U.S. for 11–15 years, register higher odds of residing in developing suburbs than their longer-term counterparts and foreign-born white households. Lastly, and in terms of English language fluency levels, the results in Table 4 reveal that African households with poor English language proficiency levels exhibit higher odds of residing in developing suburbs than their peers who speak only English, including foreign-born white households.

## 7. Conclusions

The present study examined black ethnic immigrant group locational attainment outcomes between mature and developing suburbs. Sociodemographic, economic, and structural changes within suburbia challenge the main tents of the spatial assimilation theoretical model, which has successfully described the suburban outcomes for a substantial share of white European ethnic groups, and their native-born offspring, through most of the twentieth century. To the extent that the spatial assimilation model has traditionally used the 'city/suburb' distinction to evaluate racial and ethnic immigrant

groups' residential attainment outcomes, the present study evaluates the degree to which the model can describe black ethnic immigrant group's processes of locational attainment between its mature and developing suburbs. Inasmuch that the spatial assimilation model has traditionally used the 'city/suburb' split to measure racial and ethnic immigrant group's locational attainment outcomes, the present study extends the model to evaluate the extent to which the model can outline black ethnic immigrant groups' processes of locational attainment in developing versus mature suburbs.

Both the pooled and group specific multivariate models testing for race, ethnicity, and nativity-status/place of birth differences provide a tentative examination into the processes by which black ethnic groups secure a suburban outcome within its mature and developing components. A key finding from the pooled models is that black African households register higher odds ratios of residing in developing suburbs than both English and French Caribbean households, including native-born black and white households, independent of differences in SES, acculturation status, and the remaining range of predictors. To the extent that the effects of SES agreed with the spatial assimilation model, they failed, however, to decrease or eliminate the intra- and inter- racial/ethnic and nativity status differences between the groups of interest. In other words, differences in the probability of residing in developing suburbs between and among the foreign-born black ethnic groups of interest continued to remain, even when taking into consideration differences in SES and acculturation characteristics.

The other key findings pertain to the mixed effect of acculturation status. First, the pooled models reveal that black ethnic immigrant groups' English language fluency levels and years residing in the U.S. account for a small share of the variation in the odds of residing in developing versus mature suburbs. Nevertheless, and countering the outlines of the spatial assimilation model, differences in acculturation status, together with SES, failed to eliminate difference by nativity status and place of birth between the black ethnic groups of interest. The second key finding suggests a differential effect of each indicator of acculturation on each group's probability of residing in developing vs. mature suburbs. Further support to the above statement is provided by Table 5, which depicts the predicted probabilities of residence in mature or developing suburbs by each black ethnic group's SES distinguished by acculturation levels, i.e., least and most acculturated. "Most acculturated" refers to immigrant black ethnic households who speak only English and are residing in the U.S. for over twenty years. Meanwhile, "least acculturated" households are those who do not speak English or speak English not well and have been living in the U.S. for less than 5 years and. Each predictors' reference categories are used for the remaining categorical variables, while group-specific means are used for the continues predictors.

**Table 5.** Predicted Probabilities of Living in Developing Suburbs Differentiated by Each Foreign-Born Group's SES and Acculturation Levels.

	Foreign-Born							
	White		Caribbean English		Caribbean French		Africans	
	Most	Least	Most	Least	Most	Least	Most	Least
<b>Socioeconomic Status</b>								
Household Income								
\$0–\$19,999	67.7	75.4	77.2	86.1	55.6	59.9	76.0	75.8
\$20,000–\$39,999	66.0	74.0	74.2	84.1	57.2	61.5	77.3	77.1
\$40,000–\$59,999	64.5	72.7	77.3	86.2	53.6	58.0	75.4	75.2
\$60,000–\$79,999	66.4	74.3	73.1	83.3	50.0	54.5	71.9	71.7
\$80,000–\$99,999	66.5	74.4	75.2	84.8	55.5	59.8	73.3	73.1
\$100,000–\$119,000	66.1	74.1	72.8	83.1	51.4	55.8	76.2	76.0
\$120,000 and up	68.3	75.9	71.1	81.9	50.2	54.6	80.5	80.3
Education of Householder								
Less than High School Diploma	56.4	65.5	51.1	65.7	33.3	37.4	76.0	75.9
High School Diploma	61.3	69.9	59.8	73.2	38.5	42.8	76.3	76.1
Some College	67.7	75.4	64.6	77.0	46.0	50.5	79.1	78.9
College Degree or More	68.3	75.9	71.1	81.9	50.2	54.6	80.5	80.3
Tenure Status								
Own	68.3	75.9	71.1	81.9	50.2	54.6	80.5	80.3
Rent	64.6	72.8	68.5	79.9	56.0	60.4	73.7	73.5

Source: 2012–2016 American Community Survey (ACS).

According to Table 5 English language fluency levels and years living in the U.S. have an impact on the predicted probabilities of residing in developing suburbs in ways that run counter to what we would expect based on the spatial assimilation perspective. For example, all three foreign-born black ethnic “least acculturated” groups have higher predicted probabilities of residing in developing suburbs relative to their “most acculturated” immigrant peers. While further research is needed, the above findings appear to lend support to previous studies documenting the differential and weakening effect of acculturation status on racial and ethnic immigrant groups’ suburban attainment outcomes [1,24,56].

Future research should also further investigate the idiosyncratic micro and macro level generational processes of black ethnic immigrant group suburbanization outcomes between its mature and developing neighborhoods. Due to data limitations, the present study could account for generational differences, since the ACS does not collect information on parental place of birth. Another potential avenue for future research is replicating the present findings at a smaller statistical geographic unit than the one used in the present study, as well as to further examine whether the results revealed are conditional to the period of time examined or can be applied and repeated for other time periods. All of the above can provide further insight into unpacking the processes of how black ethnic groups convert their socioeconomic status characteristics into residence in commensurate neighborhoods across suburban neighborhoods—either within its mature or developing counterparts.

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