## Spatial Mismatch: Beyond Black and White

**Introduction**

Though several scholars have documented spatial mismatch—defined as the disequilibrium between housing options and employment opportunities-- among blacks, whites, and, to a lesser extent, Hispanics, there have been no studies to my knowledge that have provided a portrait of spatial mismatch experiences among all of the largest immigrant groups in the United States (U.S). This paper aims to fill this gap in the empirical record by examining spatial mismatch among Mexican, Puerto Rican, Cuban, Asian Indian, Chinese, Filipino, and Vietnamese U.S. residents.

Literature on immigrant segmented assimilation and U.S. racial stratification has long argued that different immigrant groups experience a wide range of outcomes after arriving in the U.S. Despite this fact, many examinations of spatial mismatch rely on estimates based on large pan-ethnic groups to draw conclusion about disparities in job access among minorities in the U.S.

*Spatial Mismatch*

Spatial mismatch, theorized to contribute to higher rates of unemployment among blacks, has two components: residential segregation and employment suburbanization (Fernandez and Su 2004; Kain 1992). A large literature suggests that some of the primary mechanisms reinforcing residential segregation (e.g., housing and lending discrimination) prevent black residents from relocating to areas with greater employment opportunities at the same rate as their white counterparts (Fernandez 2008). Indeed, since the 1960s, many businesses began relocating to suburban areas, purportedly to take advantage of higher quality workforces and cheaper operation costs. These trends in employment relocation and residential segregation together contribute to the spatial separation of black workers from employment opportunities(Kain 1992; Massey and Denton 1993; WIlson 1987). Following Kain's seminal work, several scholars have debated the existence of spatial mismatch (Hellerstein 2008; Stoll and Covington 2012).

Few studies have examined spatial mismatch among Hispanic subgroups. Dickerson von Lockette and Johnson (2010) come close in their examination of the relationship between residential segregation and unemployment among Puerto Ricans, Mexicans and Cubans. In a fixed-effect analysis of 1980, 1990, and 2000 decennial U.S. censuses, the authors find that segregation is a significant predictor of unemployment among Puerto Ricans, but not other groups (Dickerson vonLockette and Johnson 2010). However, even though unemployment is a byproduct of spatial mismatch, the two cannot be measured interchangeably. Groups likely adjust to spatial mismatch in order to secure employment.

This phenomenon of resettlement in response to job relocation among the Hispanic pan-ethnic group has been documented (Liu and Painter 2011). Using data 1980-2000 decennial data from sixty large metropolitan areas with significant immigrant populations, Liu and Painter (2011) find that job growth tends to occur more often near whites. However Hispanics, and to a lesser extent, blacks relocate to be closer to new employment opportunities.

*U.S. Racial Stratification and Segmented Assimilation*

While both sets of findings are central to understanding the phenomenon of special mismatch, one notable question remains: Do all Hispanic and Asian subgroups experience

similar trends in spatial mismatch? Different Hispanic and Asian subgroups experience different immigration histories, contexts of receptions, socioeconomic status, and phenotype (Bonilla-Silva 2004; Portes and Zhou 1993). For these reasons, it is problematic to treat these groups as if they are monolithic. This current project aims to address this limitation. Secondly, do differences in group settlement patterns explains differences in spatial mismatch? It is plausible that certain regions in the U.S. experience differing levels of spatial mismatch due to differences in settlement patterns and levels of segregation. Additionally, settling in micropolitan vs. metropolitan areas may also have implications for experiences of spatial mismatch among Hispanics and Asians.

**Research Questions**
Which subgroups of Hispanic and Asian U.S. residents experience the highest levels of spatial mismatch?

**Methods and Data**
      I measure spatial mismatch—operationalized as imbalances in the distribution of jobs and a given racial/ ethnic group-- using an index of dissimilarity. I adopt this measure from the literature on housing segregation, though it has been used elsewhere to measure spatial mismatch (Stoll and Covington 2012). Spatial mismatch is calculated for 2000 and 2010.  The formula is as follows:

$$D = \frac{1}{2}\sum_{i}^{n} \left| \frac{Minority_i}{Minority} - \frac{Employment_i}{Employment} \right|$$

      I calculate D for two measures of employment opportunity: the number of jobs and the number of employers. The estimate excludes metropolitan areas that do not have members of any given group.

      This paper uses data from the 2000 and 2011 Zip Code Business Patterns dataset to analyze the association between changes in racial composition and number of jobs and employers in a given zip code.[1]  Zip Code Business Patterns consist of all businesses that reported payroll information to the federal government, including corporations, sole proprietorships, partnerships, and non-profits. The zip code level racial/ethnic demographic variables, which, are taken from the 2000 and 2010 U.S. censuses.

      In addition to containing detailed data on the number of employers in a zip code, Zip Code Business Patterns also allow for separate analysis by micropolitan areas, defined as an economically-integrated area with an urban core of at least ten thousand but less than fifty thousand residents, and metropolitan (MSA) areas, defined as an area surrounding a core with over fifty thousand residents. I exploit this feature of the dataset to examine spatial mismatch at

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[1] Zip codes are smaller than MSAs but larger than census tracts. However, zip codes, and potentially zip code areas, may be the most appropriate level of aggregation from which to examine spatial mismatch as very few people work within their neighborhood or census tract. (Hellerstein 2008).

both levels of urbanization. Each measure only includes micropolitan and MSAs that have residents of a particular racial/ethnic group.

**Preliminary Results**

According to Table 1 and 2, all Asian and Hispanic subgroups do indeed fall between blacks and whites in terms of spatial mismatch. However, there is a lot of heterogeneity, some Hispanic sub groups fare better than certain Asian groups. Vietnamese residents are very similar to blacks and experience the highest rates of spatial mismatch among the subgroups in both time periods.

| Table 1. Index of Job Dissimilarity by Race/Ethnicity | | | | Table 2. Index of Employer Dissimilarity by Race/Ethnicity | | |
|---|---|---|---|---|---|---|
| **2000** | **Index** | **SD** | | **2000** | **Index** | **SD** |
| Black | 0.2 | [0.27] | | Black | 0.2 | [0.27] |
| Vietnamese | 0.19 | [0.25] | | Vietnamese | 0.18 | [0.24] |
| Chinese | 0.17 | [0.23] | | Hispanic | 0.16 | [0.21] |
| Korean | 0.17 | [0.23] | | Mexican | 0.16 | [0.21] |
| Hispanic | 0.17 | [0.23] | | Puerto Rican | 0.16 | [0.22] |
| Mexican | 0.17 | [0.23] | | Asian Indian | 0.15 | [0.19] |
| Puerto Rican | 0.17 | [0.23] | | Chinese | 0.15 | [0.21] |
| Asian Indian | 0.16 | [0.21] | | Korean | 0.15 | [0.20] |
| Filipino | 0.16 | [0.21] | | Filipino | 0.14 | [0.19] |
| Japanese | 0.16 | [0.21] | | Japanese | 0.14 | [0.19] |
| Asian | 0.15 | [0.20] | | Asian | 0.13 | [0.18] |
| Cuban | 0.15 | [0.20] | | Cuban | 0.13 | [0.18] |
| White | 0.13 | [0.17] | | White | 0.09 | [0.12] |
| **2010** | | | | **2010** | | |
| Black | 0.19 | [0.26] | | Black | 0.19 | [0.25] |
| Vietnamese | 0.18 | [0.24] | | Vietnamese | 0.17 | [0.23] |
| Chinese | 0.17 | [0.22] | | Mexican | 0.16 | [0.21] |
| Korean | 0.17 | [0.22] | | Asian Indian | 0.15 | [0.20] |
| Mexican | 0.17 | [0.23] | | Chinese | 0.15 | [0.20] |
| Asian Indian | 0.16 | [0.22] | | Korean | 0.15 | [0.20] |
| Hispanic | 0.16 | [0.22] | | Hispanic | 0.15 | [0.20] |
| Puerto Rican | 0.16 | [0.22] | | Puerto Rican | 0.14 | [0.20] |
| Asian | 0.15 | [0.20] | | Asian | 0.13 | [0.17] |
| Filipino | 0.15 | [0.20] | | Filipino | 0.13 | [0.18] |
| Japanese | 0.15 | [0.20] | | Japanese | 0.13 | [0.18] |
| Cuban | 0.15 | [0.19] | | Cuban | 0.12 | [0.17] |
| White | 0.13 | [0.17] | | White | 0.09 | [0.12] |

| Table 3. Index of Employer Dissimilarity by Origin | | |
|---|---|---|
| **2000** | **Index** | **SD** |
| Oceania | 0.21 | [0.28] |
| Africa | 0.18 | [0.24] |
| Latin America | 0.18 | [0.24] |
| Asian | 0.15 | [0.20] |
| North America | 0.15 | [0.20] |
| Europe | 0.11 | [0.15] |
| 2011 | | |
| Oceania | 0.24 | [0.31] |
| Africa | 0.19 | [0.25] |
| Latin America | 0.18 | [0.24] |
| North America | 0.16 | [0.21] |
| Europe | 0.15 | [0.19] |
| Asia | 0.15 | [0.20] |

| Table 4. Index of Employer Dissimilarity by Origin | | |
|---|---|---|
| **2000** | **Index** | **SD** |
| Oceania | 0.2 | [0.27] |
| Africa | 0.17 | [0.22] |
| Latin America | 0.17 | [0.23] |
| Europe | 0.14 | [0.19] |
| Asian | 0.13 | [0.18] |
| North American | 0.12 | [0.16] |
| 2011 | | |
| Oceania | 0.23 | [0.30] |
| Africa | 0.18 | [0.23] |
| Latin America | 0.17 | [0.22] |
| North America | 0.14 | [0.18] |
| Asia | 0.13 | [0.17] |
| Europe | 0.12 | [0.15] |

According to Tables 3 and 4, immigrants from Oceania experience rates of spatial mismatch that rival those experienced by black Americans. On average, one fifth of employers and jobs would have to relocate in order to be evenly distributed with immigrants from Oceania. Foreign-born residents from Africa and Latin America are close behind.

**Future Directions**

Some of these differences may be due to differences in settlement patterns among these groups. The next steps in this project are to adjust these estimates for differences in U.S. region, and inner city status.

Additionally, does spatial mismatch have similar implications for employment for all subgroups?

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