**A Multilevel Analysis of Poverty among Mexican Americans and Immigrants in the Southwest United States**

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**Abstract**

Data from the 2006 American Community Survey are used in conjunction with 2000 Decennial Census data in an effort to understand the effects of individual and contextual level characteristics on the prediction of poverty for Mexican Americans and Mexican immigrants in the Southwest United States. Such variables as immigration status, employment status, and number of children, among others, are utilized at the individual level in order to predict the likelihood of being in extreme poverty, one hundred percent poverty, and low-income. Data are then introduced at the contextual level (level-2) (Super-PUMAs containing at least 400,000 persons) measuring percentage of persons in poverty, percentage of Mexican Americans and Hispanic immigrants in the PUMA, and presence of particular occupational industries. Many studies have focused on the individual level predictors of poverty; this research goes one step further and predicts poverty not only with respect to individual predictors but also group level variables.

*Introduction*

This paper presents and discusses the results of multilevel logistic regression equations examining the effects on poverty of the individual characteristics of Mexican Americans and Mexican immigrants in addition to the contextual level characteristics of SPUMAs in the Southwestern United States. These populations have emerged as ones that necessitate a multitude of analyses given their expected growth rates and levels of poverty in the coming decades. Much has been done in the way of individual analyses with respect to the study of poverty for these groups; however, little has been done to examine the impact of contextual level characteristics for them. Given the fact that Mexican Americans and Mexican immigrants maintain high rates of employment and more often reside in dual-parent households, it becomes essential to examine other

influences than personal characteristics, which may be imparting significant impacts on poverty.

Multi-level models, in particular hierarchical generalized models (HGLM), are used to determine the extent of these effects on the likelihood of poverty for each of the three outcomes, namely extreme poverty, 100 percent poverty, and low income. Summary statistics are provided in reference to each of the 42 SPUMAs, which have been identified in the region of interest, as are the hypothesized relationships. I have also provided a section on the construction and operationalization of the level-2 independent variables. Finally, the results of the HGLM's are presented along with a discussion of the findings and associated implications. I expect that both individual characteristics and macro-level, i.e. SPUMA, characteristics, will play a role in the prediction of each of the three poverty outcomes.

*Hypotheses, General and Specific*

As was mentioned previously, little research has been focused specifically on the analysis of the Mexican American and Mexican immigrant population through the use of multi-level models. This paper seeks to fill that void by examining the impacts of individual and contextual level characteristics on three different poverty outcomes. The dependent variables are extreme poverty, 100 percent poverty, and low income. A number of essential individual level variables have been identified and include such predictors as immigration status (for the Mexican American population), level of education, unemployment status, and employment in a Mexican immigrant job. The most influential variables were chosen relative to their effects as evidenced in prior

logistic regressions[1]. For the Mexican immigrant population, key independent variables were also selected in reference to their impacts and include citizenship status, unemployment status, undocumented status, number of children present in the household, and number of years spent in the U.S.

It is expected that macro, or contextual level, characteristics will also play a key role effecting poverty. SPUMAs have been selected as the geographic unit within which the individuals/households are nested. It is further expected that the likelihood of poverty will be associated with the characteristics of these SPUMAs. An underlying assumption is that the SPUMAs are different one from another and will thus provide a reliable base from which to draw conclusions.

At the contextual level, a number of variables were developed, and the most influential of which have been included in several multilevel models. Based on previous research some of the most influential predictors include the percentage of poverty in the area, the percentage of the labor force located in each of the nine major industries present in the area, and the percentage of Mexican Americans and Hispanic immigrants present in the area. It is expected that the larger the presence of Mexican Americans and Hispanic immigrants in an area, the higher the rate of poverty. This is based on prior research, which has shown that these two populations tend to be concentrated in areas of high poverty, and are more often employed in low-wage occupations and have lower levels of education. The percentage of poverty in the SPUMA will also be used as a

[1] Prior analyses have been conducted for these two populations through the use of logistic regression. The results suggested that the variables chosen for analysis here exerted the greatest influence on the prediction of poverty at the individual level. For a full report see: Garcia, Ginny E. 2008. *An American Irony: The Story of Mexican Immigrant Poverty in the Land of Immigrants,* Texas A&M University.

predictor and it is expected that the higher the area poverty, the higher the probability of any poverty outcome.

Occupational classification has also been identified as a key predictor at the contextual level. Several macro-level independent variables were chosen for analysis based on their predictive success in preliminary analyses and include the following: the percentage of service occupations located in an area, the percentage of agricultural occupations, and the percentage of professional occupations in an area. It is expected that a greater presence of service-based occupations will coincide positively with poverty as these are low-skill, low-wage positions that rarely offer benefits. The same relationship is expected for agricultural occupations as these are also characterized by low-wages and seasonality, and it has been shown in prior research that greater concentrations of agricultural employment coincides with a greater concentration of poverty (Slack et al. 2007; Albrecht, Albrecht and Albrecht 2000). Finally, a negative relationship is expected for professional occupations, i.e. the higher the percentage of professional occupations in an area, the lower the probability of poverty. This is based on the assumption that professional occupations provide an overall context for higher levels of skill and training and offer high wages in return, thus lessening the risk of poverty to the overall population.

*Operationalization and Construction of Variables*

Certain influential independent variables have been selected for use in the multilevel models. As already noted the dependent variables are extreme poverty (EXTPOV), 100 percent poverty (POV100), and low income (LOWINC); all of which

are dichotomous variables. Two sets of models have been prepared; one for each population (Mexican Americans and Mexican immigrants). The data for Mexican Americans are restricted to household heads, married with spouse present, with at least one child present in the household, and reporting Mexican ethnicity. The Mexican American sample population contains information on 19,674 households.

The independent variables selected for analysis at level-1 for Mexican Americans are number of children present in the household (NCHILD). This is an interval level variable ranging from 1 to 9 or more (those with no children were excluded from the sample). Unemployment status (UNEMPLOY) was selected as another key predictor at level-1 and is measured as a dichotomous variable where 1 equals not employed and/or not a member of the labor force and 0 equals employed. Finally, immigration status (MEXIMM) reports whether or not the respondent indicated he/she was born in Mexico, where 1 equals yes and 0 equals no.

At the contextual level (level-2), a number of variables were selected based on their performance in preliminary HGLM analyses. The first of these variables is the relative, weighted percentage of poverty in an SPUMA (WTPOV). This variable was constructed using Summary File 3 data from the Decennial Census of 2000. The values were obtained by assigning a proportion (of the total SPUMA population) to each county within the SPUMA. The percentage of poverty for the corresponding county was then multiplied by its relative proportion. Each of these values was then summed for all the counties located in an SPUMA to obtain a weighted percentage of poverty for the entire SPUMA. Thus a poverty percentage is assigned to each of the 42 SPUMAs located in the level-2 data set, with values ranging from 7.5 to 35.9 percent. Each of the variables

constructed at level-2 were created based on the above-mentioned method. Hence, county percentages were obtained for each of the level-2 variables for the counties in a SPUMA, multiplied by the proportion of the SPUMA population located in the county, and finally all county-based values were summed to obtain a weighted percentage for each independent variable.

The weighted percentage of those employed in service occupations has also been included in the HGLM analysis for Mexican Americans (WTSERV). This variable was constructed in the manner detailed above and ranges from 9.4 to 17.7 percent for the 42 SPUMAs. The final occupational variable selected was the percentage of those employed in professional occupations. Again, this is a weighted percentage and the values range from 5.22 to 16.31.

The last of the level-2 variables used in the analysis of Mexican Americans was the percentage of Hispanic immigrants located in the SPUMA (WTIMM). This variable was constructed using data from the Decennial Census 2000, Summary File 3. Data were available for Hispanic rather than Mexican Immigrants only. Despite this shortcoming in the data, I expect this variable should still act satisfactorily because the proportion of Mexican immigrants in the counties of the 42 SPUMAs is very high compared to that of other Hispanic immigrants. This variable was constructed in the manner described above for the occupations and the percentage of those in poverty, i.e. a weighted percentage of Hispanic immigrants was calculated for each of the 42 SPUMAs.

The data set for Mexican immigrants contains information on 12,122 household heads and is restricted to those with at least one child present, those who were married with spouse present, those who reported Mexican ethnicity, and those who listed their

birthplace as Mexico. Each of the individual level variables mentioned above was also used in the analysis of Mexican immigrants in the Southwest, in addition to a proxy variable for undocumented status, number of years spent in the USA, and citizenship status. These variables proved to be quite influential in the logistic regressions (reported earlier) and were chosen accordingly. The variable for undocumented status (UNDOC) is a dichotomous variable where a value of 1 represents those who are more than likely undocumented Mexican immigrants and a value of 0 represents those who are not. It is based on a series of affirmative responses to questions in the ACS data that were identified as related to undocumented status by work initiated by Bean, Browning, and Frisbie in 1984. This variable is not a failsafe predictor of undocumented status, but the work of Bean and his colleagues showed that this method allowed for a relatively accurate measure of undocumented status in a majority of cases. The variable for number of years spent in the USA is an interval level variable ranging from 0 to 87. It was constructed using the YRSUSA1 variable located in the ACS 2006 data. The final variable used at the individual level for Mexican immigrants is citizenship status. This is a dichotomous variable where a value of one represents those who are citizens, both natives and naturalized, and a value of 0 represents those who are non-citizens

The variables selected at level-2 for Mexican immigrants are operationalized in the same manner as those for the Mexican American population. They include the weighted percentage of poverty in the SPUMA, the percentage of the population employed in service, professional, and agricultural occupations, and the percentage of Hispanic immigrants.

*Summary Statistics and Discussion*

The information obtained at the individual level for the Mexican American population in the Southwest came from the American Community Survey, 2006. This is a nationally representative sample of the U.S population. The data obtained at the contextual level are derived from the Decennial Census 2000 and are based on actual counts of the population. These data provide 100 percent characteristics for race, sex, and Hispanic or Latino origin. Additionally, they provide information on marital status, educational attainment, labor force participation, and others for one in six individuals in the population via the long-form. The data described below (Table 22) provide information on 19,674 Mexican Americans nested within 42 SPUMAs. My primary interest lies in the likelihood of poverty at any level, i.e. extreme poverty, 100 percent poverty, or low income; each of which are modeled separately.

The results in the table describe seven level-1 variables, namely, extreme poverty (EXTPOV), 100 percent poverty (POV100), low income (LOWINC), number of children present in the household (NCHILD), unemployment status (UNEMPLOY), immigration status (MEXIMM), and level of education (EDUC). The findings indicate that approximately 4 percent of Mexican Americans were in extreme poverty, 16 percent in 100 percent poverty, and 47 percent in low income. The population had an average of 2.26 children per household, about 22 percent were unemployed, 62 percent were Mexican immigrants, 31 percent were employed in a Mexican immigrant job, and the average level of education attained was 10.68 years.

The data in the table also describe four SPUMA level variables, namely, a weighted average poverty score (WTPOV), a weighted percentage of service occupations

concentrated in the area (WTSERV), a weighted percentage of those employed in professional occupations (WTPROF), and a weighted percentage of Hispanic immigrants present. Across the 42 SPUMAs, there was an average of 15.51 percent in poverty, 13.15 percent employed in service occupations, 9.27 percent employed in professional occupations, and 10.92 percent Hispanic immigrants.

**Table 22 Multilevel Descriptive Statistics for Mexican Americans**

| *Level-1 Descriptive Statistics* | | | | | |
|---|---|---|---|---|---|
| *Variable Name* | *N* | *Mean* | *sd* | *Minimum* | *Maximum* |
| EXTPOV | 19,674 | .04 | .19 | 0.0 | 1.0 |
| POV100 | 19,674 | .16 | .37 | 0.0 | 1.0 |
| LOWINC | 19,674 | .47 | .50 | 0.0 | 1.0 |
| NCHILD | 19,764 | 2.26 | 1.12 | 1.0 | 9.0 |
| UNEMPLOY | 19,764 | 0.22 | 0.42 | 0.0 | 1.0 |
| MEXIMM | 19,764 | 0.62 | 0.49 | 0.0 | 1.0 |
| EDUC | 19,764 | 10.68 | 4.08 | 0.0 | 21.0 |
| *Level-2 Descriptive Statistics* | | | | | |
| *Variable Name* | *J* | *Mean* | *sd* | *Minimum* | *Maximum* |
| WTPOV | 42 | 15.51 | 5.91 | 7.50 | 35.90 |
| WTSERV | 42 | 13.15 | 1.6 | 9.40 | 17.70 |
| WTPROF | 42 | 9.27 | 3.04 | 5.22 | 16.31 |
| WTIMM | 42 | 10.92 | 5.93 | 3.32 | 28.74 |

Table 23 presents the descriptive data for the Mexican immigrant population in the Southwest. Here the individual level data were also obtained from the ACS 2006 and the contextual level data from the Decennial Census of 2000. The data in the table describe nine individual level variables, namely, extreme poverty, 100 percent poverty, low income, number of children present in the household, unemployment status, a proxy variable for undocumented status, citizenship status, and number of years spent in the USA. The findings indicate that 4.52 percent of Mexican immigrants were in extreme poverty, about 21 percent in 100 percent poverty, and 58 percent were low income. The Mexican immigrant population had an average of 2.4 children per household, 22 percent

were unemployed, 0.3 percent was undocumented, 36 percent of the household heads were citizens, and the population averaged 21.14 years in the USA.

The data also describe five level-2 (SPUMA) variables, namely, the weighted percentage of poverty for the SPUMA (WTPOV), the percentage of those employed in agriculture (WTAG), professional (WTPROF), and service (WTSERV) occupations, and the percentage of Hispanic immigrants in the SPUMA (WTIMM).

**Table 23 Multilevel Descriptive Statistics for Mexican Immigrants**

| *Level-1 Descriptive Statistics* | | | | | |
|---|---|---|---|---|---|
| *Variable Name* | *N* | *Mean* | *sd* | *Minimum* | *Maximum* |
| EXTPOV | 12,122 | .045 | .21 | 0.0 | 1.0 |
| POV100 | 12,122 | .21 | .40 | 0.0 | 1.0 |
| LOWINC | 12,122 | .58 | .49 | 0.0 | 1.0 |
| NCHILD | 12,122 | 2.40 | 1.15 | 1.0 | 9.0 |
| UNEMPLOY | 12,122 | 0.22 | 0.42 | 0.0 | 1.0 |
| UNDOC | 12,122 | 0.3 | 0.06 | 0.0 | 1.0 |
| CIT | 12,122 | 0.36 | 0.48 | 0.0 | 1.0 |
| YRSUSA1 | 12,122 | 21.14 | 11.05 | 0.0 | 87.0 |
| *Level-2 Descriptive Statistics* | | | | | |
| *Variable Name* | *J* | *Mean* | *sd* | *Minimum* | *Maximum* |
| WTPOV | 42 | 15.51 | 5.91 | 7.50 | 35.90 |
| WTSERV | 42 | 13.15 | 1.6 | 9.40 | 17.70 |
| WTPROF | 42 | 9.27 | 3.04 | 5.22 | 16.31 |
| WTIMM | 42 | 10.92 | 5.93 | 3.32 | 28.74 |
| WTAG | 42 | 3.90 | 3.56 | 0.30 | 15.04 |

*Hierarchical Generalized Linear Model Results*

Traditionally, models using data at more than one level involved either aggregating up to the level of the context, or disaggregating down to the level of the individual. In the case of aggregation, the data user would assign the characteristics of

individuals to the contexts in the form of mean values. The main problem with this is that frequently a lot of the within group variation is discarded before the analysis has even begun. In the case of disaggregation, the context (SPUMA) characteristics would be assigned to the individuals. However, in this scenario all individuals located in the same geographic unit would be assigned the same value, hence the assumption of independence would be lost (Poston and Duan 2000).

In order to avoid these issues I have employed a more appropriate statistical method for modeling binary multilevel outcomes, namely hierarchical generalized linear models (HGLM). This procedure is used to model the effects of both micro and macro level predictors on, in turn, each of the three binary outcomes of poverty, simultaneously and without losing any of the within and between group variation. Thus I am able to assess (through the usage of a multilevel model) the extent of the effects of individual level characteristics, such as education level and immigration status, as well as the extent of the effects of contextual characteristics of SPUMAs, such as concentration of poverty in the area or industrial diversification (through the use of M1), on the probability of poverty. Additionally, HGLM is the appropriate model given that it allows for the estimation of a binary outcome in a situation where the random effects are not normally distributed. In other words, I am able to constrain my outcome to a value between one and zero. Hence, the HLM software utilized for analyses allows for a nonlinear application appropriate for binary outcomes, and which is a direct application of the generalized linear model to hierarchical data (Raudenbush and Bryk 2002). This is referred to as a Bernoulli model.

Through the use of HLGM, I am essentially able to perform a regression of regressions (Poston and Duan 2000). In this case the outcome variable is one of three dichotomous dependent variables: extreme poverty, 100 percent poverty, and low income. First, regressions are performed at the lowest level for each of the SPUMAs, i.e., at level-1, in order to predict a level-1 outcome as a function of the other level-1 characteristics. These equations are performed separately for the various level-2 units and are referred to as within-region equations. The intercepts and coefficients produced are then used as the dependent variables in a set of equations across the regions, or SPUMAs, and are referred to as the level-2 equations (Poston and Duan 2000). Here, the level-2 units are the unit of analysis, and the other level-2 characteristics are the independent variables. These equations are referred to as the between-region models.

The data being analyzed in this paper are from a nationally representative sample of the United States population (ACS 2006) and contains information on 19,674 Mexican American households, and on 12,122 Mexican immigrant households, nested within 42 SPUMAs in the Southwestern United States. My primary interest lies in the probability that the household will report to extreme poverty, 100 percent poverty, or low income status (EXTPOV=1 if yes, EXTPOV=0 if no; POV100=1 if yes, POV100=0 if no; LOWINC=1 if yes, LOWINC=0 if no). It is hypothesized that level of education, number of children present in the household, unemployment status, and immigration status will be associated with the likelihood of poverty for Mexican Americans. It is also hypothesized that the number of children present, unemployment status, undocumented status, number of years spent in the USA, and citizenship status will be associated with poverty outcomes for the Mexican immigrant population. Each level-1 record

corresponds to a household head, with a single binary outcome for each; hence the model type is Bernoulli (Raudenbush 2004). A number of models have been specified based on several combinations of the level-1 and level-2 variables. The formula below denotes the specifications of the level-1 and level-2 structural models for one of these models (Mexican Americans).

The level-1 structural model is as follows:

$$\eta_{ij} = \log [\varphi_{ij} / 1 - \varphi_{ij} ] = \beta_{0j} + \beta_{1j} (\text{NCHILD})_{ij} + \beta_{2j} (\text{UNEMPLOY})_{ij} + \beta_{3j} (\text{MEXIMM})_{ij}$$

The level-2 structural model is as follows:

$$\beta_0 = \gamma_{00} + \gamma_{01}*(\text{WTPOV}) + \gamma_{02}*(\text{WTSERV}) + u_{0j}$$

$$\beta_1 = \gamma_{10} + \gamma_{11}*(\text{WTPOV}) + \gamma_{12}*(\text{WTSERV}) + u_{1j}$$

$$\beta 2 = \gamma_{20} + \gamma_{21}*(\text{WTPOV}) + \gamma_{22}*(\text{WTSERV}) + u_{2j}$$

$$\beta 3 = \gamma_{30} + \gamma_{31}*(\text{WTPOV}) + \gamma_{32}*(\text{WTSERV}) + u_{3j}$$

In the level-1 model, $n_{ij}$ is the predicted log-odds of success, or the logit of being in poverty. This value may be converted to an odds ratio by taking the exponentiated ($\eta_{ij}$). It is predicted (in this case) based on the household head's number of children (NCHILD), their unemployment status (UNEMPLOY), and whether or not they are a Mexican immigrant (MEXIMM). In the level-2 model, each of the level-1 coefficients, i.e. the intercept and the three logistic regression coefficients are predicted by the percentage of poverty (WTPOV) and the percentage of employment in a service occupation (WTSERV) of the SPUMA. The level-2 equations are then substituted into the level-1 equation and solved (Poston and Duan 2000).

The following paragraphs will detail the models and results associated with each of the HGLM analyses performed for Mexican Americans and Mexican immigrants in

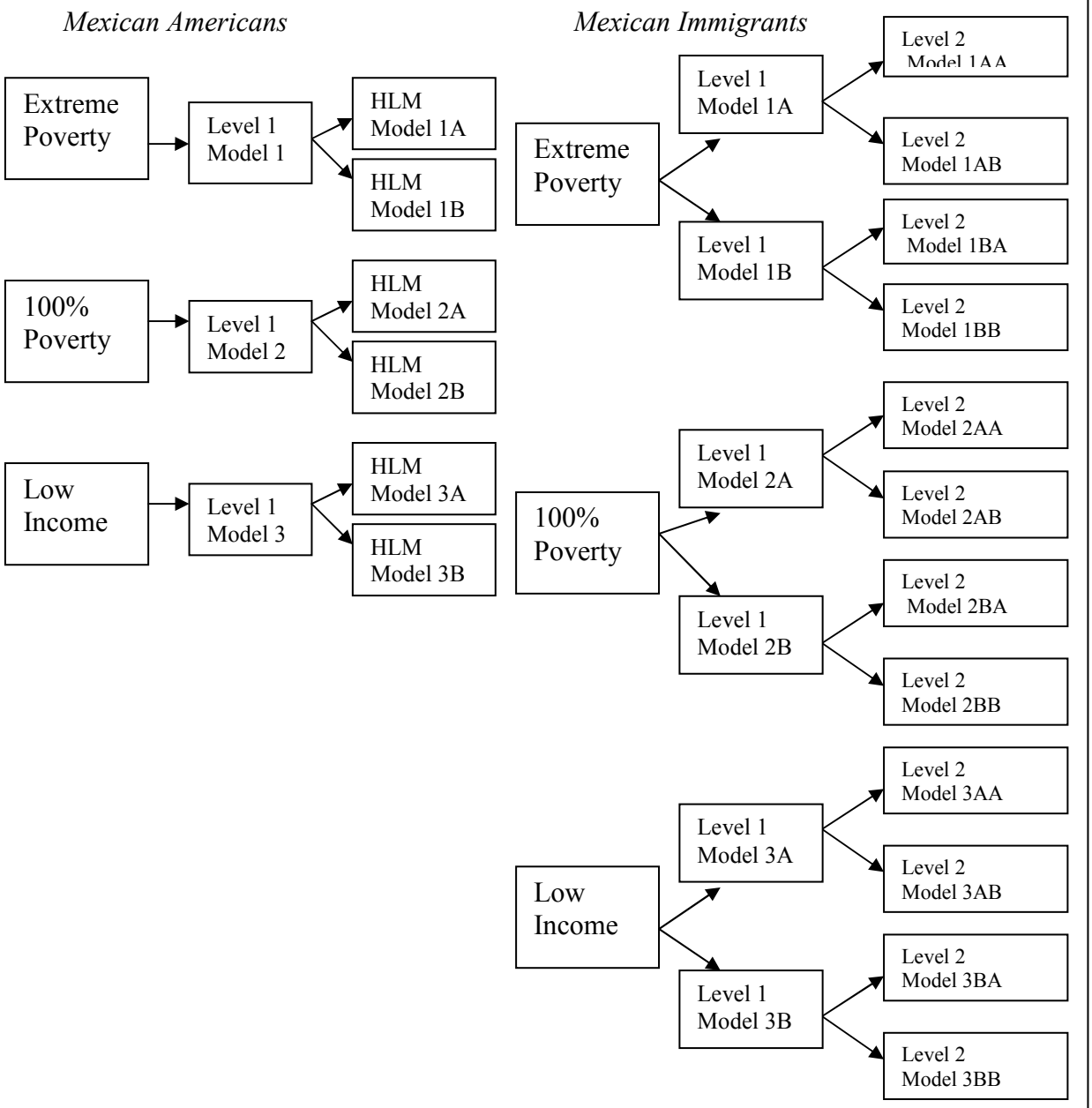
the Southwest United States (see Appendix C for additional multilevel models not discussed in the text). The results presented are done so based on the *Population-Average Model*. This type of model has been chosen because, "[they] give answers to population-average questions…The population-average results can be deduced as one characteristic of the distribution of the unit-specific results" (Raudenbush and Bryk 2002). Thus, given that I am interested in how the risk of poverty differs between those who are and who are not Mexican immigrants across SPUMAs, for example, a population-average estimate is needed.

As a first step in HGLM analyses, the data user performs a one-way ANOVA with random effects. This is very useful as a preliminary step in the analysis because "it provides important information about the outcome variability at each of the levels of the hierarchy" (du Toit and du Toit 2001: 72). This value is referred to as the intra-class correlation and may be calculated in the following manner:
$\rho = \tau_{00} / (\tau_{00} + \pi^2/3)$; in which $\tau_{00}$ is the level-2 variance component and the level-1 variance component is the constant $\pi^2/3$. In this case the $\tau_{00}$ value is .238 and results in an intra-class correlation of 0.068. This may interpreted to mean that about 6.8 percent of the variance in extreme poverty among Mexican Americans occurs at the contextual level. Hence, I am justified in pursuing further analysis at the contextual level for this population. This level-2 variance, i.e., $\tau_{00} = .238$, is significantly different from zero; hence there is variation in extreme poverty at level-2, i.e., among the 42 SPUMAs, justifying my conduct of a multi-level analysis of extreme poverty.

Table 24.1 reports the results of the tests of the multilevel model for Mexican Americans in extreme poverty. This is the first of six models (see Figure 9 for a

depiction of how the models are organized) presented for this population and includes variables for number of children present, unemployment status, level of education, and immigration status at the individual level; as well as the percentage of persons in poverty and percentage of those employed in service occupations at the contextual level. The following provides interpretations for each of the $\gamma_{\chi\chi}$ (gamma) coefficients, which may be interpreted in the same manner as logit coefficients in a logistic regression and converted into odds ratios by exponentiation.

**FIGURE 9** Multilevel Model Organization




The $\gamma_{00}$ coefficient is the intercept and is the grand mean of the expected log-odds of extreme poverty. The values have been exponentiated and thus may be presented as predicted probabilities. Given that the level-1 and level-2 independent variables have been centered around their means, this value refers to individuals with average scores on the four individual level variables, and living in SPUMAs with mean scores on the two contextual level variables. The predicted probability of being in extreme poverty is

0.027, or 2.7 percent, for those who have an average number of children, are not unemployed and not Mexican immigrants, and is highly significant. This interpretation of the intercept is for general descriptive purposes. Now I will describe the results of the logit coefficients at level-1 and level-2.

**TABLE 24.1 HGLM Equation: Mexican Americans (Model 1A)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Extreme Poverty**
**19,674 Household Heads of Mexican Americans in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -3.624 | 0.028 | 0.049 | -74.065*** |
| WTPOV $\gamma_{01}$ | 0.059 | 1.061 | 0.006 | 9.984*** |
| WTSERV $\gamma_{02}$ | -0.160 | 0.852 | 0.035 | -4.617*** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.373 | 1.452 | 0.022 | 17.158*** |
| WTPOV $\gamma_{11}$ | 0.005 | 1.005 | 0.003 | 1.836 |
| WTSERV $\gamma_{12}$ | 0.013 | 1.013 | 0.016 | 0.809 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 1.363 | 3.906 | 0.053 | 25.731*** |
| WTPOV $\gamma_{21}$ | -0.029 | 0.972 | 0.008 | -3.571*** |
| WTSERV $\gamma_{22}$ | 0.014 | 1.014 | 0.042 | 0.340** |
| For MEXIMM slope, | | | | |
| Intercept $\gamma_{30}$ | 0.526 | 1.692 | 0.094 | 5.584*** |
| WTPOV $\gamma_{31}$ | -0.003 | 0.997 | 0.009 | -0.292 |
| WTSERV $\gamma_{32}$ | 0.121 | 1.128 | 0.053 | 2.277** |
| For EDUC slope, | | | | |
| Intercept $\gamma_{40}$ | -0.060 | 0.942 | 0.008 | -7.865*** |
| WTPOV $\gamma_{41}$ | -0.001 | 0.999 | 0.001 | -1.079 |
| WTSERV $\gamma_{42}$ | -0.003 | 0.997 | 0.005 | -0.564 |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

The $\gamma_{01}$ coefficient may be interpreted as the direct effect of percentage in poverty (measured at the contextual level) on the mean extreme poverty rate of the SPUMAs. It was hypothesized that this level-2 variable should have a positive relationship with extreme poverty and this is evidenced (it is significant at the .05 level). This means that the percentage of those in poverty in the SPUMA has a significant and positive effect on

the average expected log odds of extreme poverty, and that the higher the percentage in poverty, the greater the likelihood of extreme poverty. The odds ratio is 1.061, meaning that for each one percent increase in poverty among the SPUMAs, other things equal, the odds of being in extreme poverty are multiplied by 1.061 times, that is, they increase by 6 percent. The $\gamma_{02}$ coefficient is -0.160 $t$ = -4.617. This is the direct effect of the percentage of those employed in a service occupation. It was hypothesized that this would have a positive effect on extreme poverty; however, the relationship here is negative and significant; which indicates that for every percentage increase in those employed in service occupations, the odds of being extreme poverty are multiplied by .85, that is, they decline by 15 percent..

The $\gamma_{10}$ coefficient may be read as the direct effect of the household head's number of children on the probability of being in extreme poverty. A positive relationship was expected and is evidence below (significant at the .05 level). Hence, the results indicate that, other things equal, for each additional child, the odds of being in extreme poverty are multiplied by 1.45 times. The $\gamma_{11}$ coefficient represents the cross-level interaction between WTPOV level-2 variable and the slope of number of children on extreme poverty. This is not statistically significant; if it were significant, it would suggest that, other things equal, for every increase in one percentage of poverty in a SPUMA, the slope of number of children on poverty is increased by 0.005. The $\gamma_{12}$ coefficient represents the cross-level interaction between WTSERV level-2 variable and the slope of number of children on extreme poverty. As was the previous coefficient, the effect is not significant.

The $\gamma_{20}$ coefficient is 1.363 $t$ = 25.731. This is the main effect of the household head's unemployment status on extreme poverty. A positive relationship was hypothesized and the results below indicate a very strong positive relationship. Those who are unemployed are nearly four times more likely to be in extreme poverty all else equal. The $\gamma_{21}$ coefficient is -0.029 $t$ = -3.571. This is the cross-level interaction involving the percentage in poverty in the SPUMA on the slope of the relationship between unemployment status and extreme poverty. The value is significant and indicates that for every increase in one percentage of poverty, the slope of unemployment status is decreased by .03, other things equal. In other words, a higher percentage in poverty lessens the magnitude of the slope of unemployment on extreme poverty. The $\gamma_{22}$ coefficient is 0.014 $t$ = 0.340. This is the cross-level interaction between the percentage employed in service occupations on the slope of unemployment and extreme poverty, but its effect is not significant.

The $\gamma_{30}$ coefficient is 0.526 $t$ = 5.584. This is the direct effect of Mexican immigrant status on the probability of extreme poverty. A positive relationship was hypothesized and the results confirm that expectation. Thus, the odds of being in extreme poverty are multiplied by 1.69 for Mexican immigrants versus U.S. born Mexicans, all else equal, that is, the odds increase by 69 percent. The $\gamma_{31}$ coefficient is -0.003 $t$ = -0.292. This is the cross-level interaction involving the WTPOV level-2 variable on the slope of immigration status on extreme poverty; however the effect is not significant. The $\gamma_{32}$ coefficient is 0.121 $t$ = 2.277. This is the cross-level interaction involving the WTSERV level-2 variable on the slope of immigration status and extreme poverty. This is a significant effect and indicates that for each increase in one percent for those employed in

a service occupation in an SPUMA, other things equal, the slope of immigration status on extreme poverty is increased by .121.. Or, the magnitude of the slope of immigration tends to be higher in SPUMAs with higher concentrations of those employed in service occupations.

The $\gamma_{40}$ coefficient is -0.060 $t$ = -7.865. This is the direct effect of level of education on extreme poverty among Mexican Americans in the Southwest. It was hypothesized that greater levels of education would coincide with lower levels of poverty and this relationship was confirmed. Thus, the odds of being in extreme poverty are decreased by around 6 percent with each increase of one year in level of education, all else equal. The $\gamma_{41}$ coefficient is -0.001 $t$ = -1.079. This represents the cross level interaction between WTPOV level-2 variable on the slope of education on extreme poverty. The results were not significant. Finally, the $\gamma_{42}$ coefficient is -0.003 $t$ = -0.564. This is the cross-level interaction involving percentage of employed in service occupations on the association between education and extreme poverty. The effect is not significant.

The next series of tables presents the remainder of the findings for Mexican Americans in the Southwest. Only the tables are presented in the interest of brevity; I do not go through each table and interpret all the coefficients. Tables have been prepared for several different combinations of individual and contextual level variables for each of the three outcomes, i.e. extreme poverty, 100 percent poverty, and low-income. As mentioned above, the most influential variables were included in the multilevel analysis. Table 24.2 presents the remainder of the findings for extreme poverty among Mexican Americans. As evidenced below, the individual level predictors remain the same while

the percentage of those employed in service occupations has been omitted in favor of the percentage of Hispanic immigrants located in the SPUMA (WTIMM).

**TABLE 24.2 HLGM Equation: Mexican Americans (Model 1B)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Extreme Poverty**
**19,674 Household Heads of Mexican Americans in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -3.588 | 0.027655 | 0.054 | -66.582*** |
| WTPOV $\gamma_{01}$ | 0.060 | 1.061333 | 0.011 | 5.522*** |
| WTIMM $\gamma_{02}$ | -0.015 | 0.984997 | 0.010 | -1.519 |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.370 | 1.447882 | 0.024 | 15.615*** |
| WTPOV $\gamma_{11}$ | 0.007 | 1.007257 | 0.003 | 2.103** |
| WTIMM $\gamma_{12}$ | -0.003 | 0.996815 | 0.003 | -0.982 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 1.373 | 3.948256 | 0.051 | 26.988*** |
| WTPOV $\gamma_{21}$ | -0.017 | 0.982656 | 0.009 | -1.918** |
| WTIMM $\gamma_{22}$ | -0.012 | 0.988298 | 0.005 | -2.021** |
| For MEXIMM slope, | | | | |
| Intercept $\gamma_{30}$ | 0.508 | 1.662081 | 0.086 | 5.927*** |
| WTPOV $\gamma_{31}$ | 0.014 | 1.014470 | 0.010 | 1.388 |
| WTIMM $\gamma_{32}$ | -0.014 | 0.985728 | 0.010 | -1.505 |
| For EDUC slope, | | | | |
| Intercept $\gamma_{40}$ | -0.058 | 0.943765 | 0.007 | -7.720*** |
| WTPOV $\gamma_{41}$ | -0.004 | 0.996351 | 0.001 | -2.879*** |
| WTIMM $\gamma_{42}$ | 0.003 | 1.003181 | 0.001 | 3.636*** |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

Tables 25.1 and 25.2 report the findings with respect to Mexican Americans in 100 percent poverty. The individual level predictors selected for both models include number of children present in the household, unemployment status, level of education, and immigration status. The contextual level predictors include percentage in poverty, percentage employed in service occupations for Model 25.1, and percentage in poverty and percentage of Hispanic immigrants present for Model 25.2. A one-way ANOVA was first performed, and the results indicated that 3.68 percent of the variance in 100 percent

poverty occurs at the contextual level. This $\tau_{00}$ = .368 value is significantly different from zero and indicates there is enough variation in 100 percent poverty at level-2, among the 42 SPUMAs to warrant my undertaking a multi-level analysis.

**TABLE 25.1 HGLM Equation: Mexican Americans (Model 2A)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of 100% Poverty**
**19,674 Household Heads of Mexican Americans in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -1.923 | 0.146 | 0.042 | -45.405*** |
| WTPOV $\gamma_{01}$ | 0.053 | 1.055 | 0.005 | 11.031*** |
| WTSERV $\gamma_{02}$ | -0.045 | 0.956 | 0.025 | -1.778 |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.399 | 1.490 | 0.017 | 23.187*** |
| WTPOV $\gamma_{11}$ | 0.003 | 1.003 | 0.002 | 1.224 |
| WTSERV $\gamma_{12}$ | -0.015 | 0.985 | 0.013 | -1.112 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.982 | 2.670 | 0.050 | 19.769*** |
| WTPOV $\gamma_{21}$ | -0.019 | 0.981 | 0.006 | -2.982*** |
| WTSERV $\gamma_{22}$ | -0.004 | 0.996 | 0.027 | -0.164 |
| For MEXIMM slope, | | | | |
| Intercept $\gamma_{30}$ | 0.859 | 2.362 | 0.053 | 16.137*** |
| WTPOV $\gamma_{31}$ | -0.023 | 0.977 | 0.012 | -1.970** |
| WTSERV $\gamma_{32}$ | 0.037 | 1.038 | 0.043 | 0.854 |
| For EDUC slope, | | | | |
| Intercept $\gamma_{40}$ | -0.066 | 0.936 | 0.005 | -12.329*** |
| WTPOV $\gamma_{41}$ | -0.002 | 0.998 | 0.001 | -2.921*** |
| WTSERV $\gamma_{42}$ | 0.005 | 1.005 | 0.003 | 1.419 |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

**TABLE 25.2 HGLM Equation: Mexican Americans (Model 2B)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of 100% Poverty**
**19,674 Household Heads of Mexican Americans in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -1.920 | 0.147 | 0.043 | -44.370*** |
| WTPOV $\gamma_{01}$ | 0.058 | 1.060 | 0.007 | 8.309*** |
| WTIMM $\gamma_{02}$ | -0.012 | 0.988 | 0.007 | -1.599 |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.401 | 1.494 | 0.019 | 20.522*** |

| | | | | |
|---|---|---|---|---|
| WTPOV $\gamma_{11}$ | 0.004 | 1.004 | 0.003 | 1.152 |
| WTIMM $\gamma_{12}$ | -0.003 | 0.997 | 0.004 | -0.583 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 1.010 | 2.746 | 0.044 | 23.137*** |
| WTPOV $\gamma_{21}$ | -0.009 | 0.991 | 0.007 | -1.246 |
| WTIMM $\gamma_{22}$ | -0.016 | 0.984 | 0.006 | -2.515*** |
| For MEXIMM slope, | | | | |
| Intercept $\gamma_{30}$ | 0.851 | 2.341 | 0.053 | 16.129*** |
| WTPOV $\gamma_{31}$ | -0.027 | 0.974 | 0.011 | -2.351** |
| WTIMM $\gamma_{32}$ | 0.007 | 1.007 | 0.012 | 0.551 |
| For EDUC slope, | | | | |
| Intercept $\gamma_{40}$ | -0.068 | 0.934 | 0.005 | -12.462*** |
| WTPOV $\gamma_{41}$ | -0.002 | 0.998 | 0.001 | -2.613*** |
| WTIMM $\gamma_{42}$ | 0.001 | 1.001 | 0.001 | 1.051 |
| **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

Tables 26.1 and 26.2 present the results of the HGLM analyses performed for Mexican Americans in the low income classification. The same four individual variables of education level, number of children present, immigration status, and unemployment status have been used. At the contextual level, Model 26.1 contains information on the two contextual level variables of percentage in poverty (WTPOV) and percentage employed in professional occupations (WTPROF). Model 26.2 contains information on the percentage of those in poverty (WTPOV) along with the percentage of Hispanic immigrants in the area (WTIMM). Also, a one-way ANOVA as been performed for this dependent variable and indicates that about 2.7 percent of the variance in low income occurs at the contextual level. This $\tau_{00} = .27$ value is significantly different from zero; there is a significant amount of variation in low income at level-2 warranting further analysis.

In summary, the results in these tables indicate that for Mexican Americans in 100 percent poverty and low income, the findings were generally as expected. For example, a

greater concentration of those in poverty resulted in a positive, direct effect at the contextual level in all four sets of models. For those in 100 percent poverty, a greater concentration of those in poverty in the SPUMA resulted in a lessening of the relationship between unemployment status and level of education. Hence it seems that higher concentrations of poverty lowered the extent to which unemployment and level of education predicted poverty. It was also observed that a greater concentration of Hispanic immigrants in the SPUMA lessened the effect of unemployment for Mexican Americans in 100 percent poverty. Among those in low income, the percentage of persons employed in professional occupations in the SPUMA had a negative, direct effect. This was as hypothesized and statistically significant. In addition, greater concentrations of those employed in professional occupations resulted in a lessening of the relationship between unemployment and low income. Finally, and most interestingly, it was observed that a greater concentration of Hispanic immigrants resulted in a negative, direct effect on low income status. In other words, a higher concentration of immigrants resulted in a lower likelihood of low income status. This was opposite to the hypothesized relationship. Additionally, greater concentrations of immigrants in the SPUMA led to a lessening of the relationship between unemployment and number of children present on low income status. I posit here that this may be due to the fact that immigration may act as an indirect measure of economic development and as such may be seen as a positive factor.

**TABLE 26.1 HGLM Equation: Mexican Americans (Model 3A)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Low Income**
**19,674 Household Heads of Mexican Americans in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -0.112 | 0.894 | 0.044 | -2.572*** |
| WTPOV $\gamma_{01}$ | 0.020 | 1.020 | 0.008 | 2.431** |
| WTPROF $\gamma_{02}$ | -0.060 | 0.942 | 0.018 | -3.390*** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.459 | 1.583 | 0.018 | 25.194*** |
| WTPOV $\gamma_{11}$ | 0.004 | 1.004 | 0.003 | 1.178 |
| WTPROF $\gamma_{12}$ | -0.014 | 0.986 | 0.007 | -1.899 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.777 | 2.175 | 0.045 | 17.236*** |
| WTPOV $\gamma_{21}$ | -0.023 | 0.977 | 0.009 | -2.645*** |
| WTPROF $\gamma_{22}$ | -0.079 | 0.924 | 0.019 | -4.103*** |
| For MEXIMM slope, | | | | |
| Intercept $\gamma_{30}$ | 1.004 | 2.730 | 0.047 | 21.549*** |
| WTPOV $\gamma_{31}$ | -0.016 | 0.984 | 0.010 | -1.671 |
| WTPROF $\gamma_{32}$ | 0.021 | 1.021 | 0.022 | 0.926 |
| For EDUC slope, | | | | |
| Intercept $\gamma_{40}$ | -0.099 | 0.906 | 0.006 | -15.395*** |
| WTPOV $\gamma_{41}$ | -0.003 | 0.997 | 0.001 | -2.191** |
| WTPROF $\gamma_{42}$ | -0.003 | 0.997 | 0.002 | -1.141 |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

**TABLE 26.2 HGLM Equation: Mexican Americans (Model 3B)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Low Income**
**19,674 Household Heads of Mexican Americans in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -0.112 | 0.894 | 0.045 | -2.484*** |
| WTPOV $\gamma_{01}$ | 0.055 | 1.056 | 0.007 | 7.856*** |
| WTIMM $\gamma_{02}$ | -0.023 | 0.977 | 0.007 | -3.056*** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.474 | 1.607 | 0.017 | 27.693*** |
| WTPOV $\gamma_{11}$ | 0.015 | 1.015 | 0.003 | 5.210*** |
| WTIMM $\gamma_{12}$ | -0.011 | 0.989 | 0.003 | -3.697*** |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.804 | 2.234 | 0.044 | 18.363*** |

| | | | | |
|---|---|---|---|---|
| WTPOV $\gamma_{21}$ | 0.027 | 1.027 | 0.009 | 3.128*** |
| WTIMM $\gamma_{22}$ | -0.039 | 0.962 | 0.007 | -5.698*** |
| For MEXIMM slope, | | | | |
| Intercept $\gamma_{30}$ | 1.022 | 2.779 | 0.044 | 23.213*** |
| WTPOV $\gamma_{31}$ | -0.022 | 0.978 | 0.009 | -2.239** |
| WTIMM $\gamma_{32}$ | -0.001 | 0.999 | 0.010 | -0.065 |
| For EDUC slope, | | | | |
| Intercept $\gamma_{40}$ | -0.099 | 0.905 | 0.006 | -16.304*** |
| WTPOV $\gamma_{41}$ | -0.002 | 0.998 | 0.001 | -1.746 |
| WTIMM $\gamma_{42}$ | -0.000 | 0.999 | 0.001 | -0.044 |
| **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

The next series of tables are presented in reference to Mexican immigrants in extreme poverty, 100 percent poverty, and low income. As performed above, a set of interpretations are presented for those in extreme poverty, and tables are presented for the remainder of the analyses. In the case of Mexican immigrants, a total of 12 tables are presented in comparison to the six presented for Mexican Americans (see Figure 9 for the layout of models presented in this paper). This is due to the fact that the proxy variable for undocumented status is best analyzed without the influence of highly related variables such as citizenship status or years spent in the USA. For this reason the individual level predictors are separated into two models: one which includes number of children, unemployment status, and undocumented status; and another which includes number of years spent in the USA, unemployment status, and citizenship status. The variables utilized at the contextual level include the percentage of persons in poverty (WTPOV), the percentage of Hispanic immigrants in the area (WTIMM), the percentage of persons employed in service (WTSERV), professional (WTPROF), and agricultural occupations (WTAG).

Table 27.1 presents the findings associated with Mexican immigrants in extreme poverty. These findings are based on a sample of 12,122 Mexican immigrant households nested in 42 SPUMAs. I first estimated a one-way ANOVA; the results indicate that about 8.7 percent of the variance in extreme poverty occurs at the contextual level. The $\tau_{00} = .087$ value and is significantly different from zero. Thus I am justified in estimating the multi-level models presented below. This model contains the following individual level predictors: number of children present in the household, unemployment status, and undocumented status. It also contains information on two macro-level predictors: percentage of those in poverty and percentage of those employed in service occupations.

The $\gamma_{00}$ coefficient is -3.203 $t$ = -52.995. This is the grand mean of the log odds of the probability of being in extreme poverty. Thus the probability of being in extreme poverty for individuals who are not undocumented, have an average number of children, and are employed from an SPUMA with zero proportion of persons in poverty or employed in a service occupation is 0.041; though this interpretation is for general descriptive purposes. The results of the logits at level-1 and level-2 are described below.

**TABLE 27.1 HGLM Equation: Mexican Immigrants (Model 1AA)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Extreme Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -3.203 | 0.041 | 0.060 | -52.995*** |
| WTPOV $\gamma_{01}$ | 0.069 | 1.072 | 0.010 | 7.138*** |
| WTSERV $\gamma_{02}$ | -0.091 | 0.913 | 0.040 | -2.273** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.332 | 1.394 | 0.022 | 15.068*** |
| WTPOV $\gamma_{11}$ | 0.006 | 1.006 | 0.003 | 2.038** |
| WTSERV $\gamma_{12}$ | 0.014 | 1.014 | 0.017 | 0.827 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 1.334 | 3.795 | 0.051 | 26.198*** |
| WTPOV $\gamma_{21}$ | -0.027 | 0.974 | 0.011 | -2.530*** |

| | | | | |
|---|---|---|---|---|
| WTSERV $\gamma_{22}$ | 0.045 | 1.046 | 0.042 | 1.074 |
| For UNDOC slope, | | | | |
| Intercept $\gamma_{30}$ | 1.812 | 6.125 | 0.278 | 6.516*** |
| WTPOV $\gamma_{31}$ | -0.040 | 0.961 | 0.029 | -1.374 |
| WTSERV $\gamma_{32}$ | 0.302 | 1.352 | 0.216 | 1.393 |
| **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

The $\gamma_{01}$ coefficient is 0.069 $t$ = 7.138. This is the direct effect of the macro-level variable, percentage of persons in poverty (WTPOV). In this case, the higher the percentage of persons in poverty, the higher the SPUMA's expected log odds of extreme poverty; or, for every one percent increase in poverty, the SPUMA's average odds of extreme poverty are multiplied by 1.07 times; that is they increase by 7 percent. The $\gamma_{02}$ coefficient is -0.091 $t$ = -2.273. This is the main effect of the macro-level variable of percentage of persons employed in service occupations on the mean extreme poverty rate of the SPUMAs. I expected that this variable would be related positively with extreme poverty; however a negative relationship is observed. This indicates that the higher the percentage of persons employed in service occupations, the lower the SPUMA's expected log odds of extreme poverty. In other words, for every one percentage increase in persons employed in service occupations in an SPUMA, the average odds of extreme poverty are multiplied by 0.913 times; that is they decline by around 9 percent.

The $\gamma_{10}$ coefficient is 0.332 $t$ = 15.068. This is the direct effect of the number of children present on the likelihood of extreme poverty. The effect is positive and highly significant (as hypothesized). Thus, this indicates that for each additional child, the odds of being in extreme poverty are multiplied by 1.394 times, all else equal. That is, for each additional child present, the odds of extreme poverty are increased by 39 percent. The $\gamma_{11}$ coefficient is 0.006 $t$ = 2.038. This is the cross-level interaction involving the

WTPOV level-2 variable on the slope of number of children on extreme poverty. The effect is positive and significant and indicates that for every percentage increase of individuals in poverty in the SPUMA, the slope of number of children on extreme poverty is increased by 0.006. The $\gamma_{12}$ coefficient is 0.014 $t = 0.827$. This is the cross-level interaction involving percentage employed in service occupations on the slope of number of children on extreme poverty. The effect is not significant.

The $\gamma_{20}$ coefficient is 1.334 $t = 26.198$. This is the direct effect of unemployment status on the probability of extreme poverty. A positive relationship was hypothesized and is observed herein (this variable is highly significant). This indicates that those who are unemployed are about 3.8 times more likely to be in extreme poverty than those who are employed, all else equal. The $\gamma_{21}$ coefficient is -0.027 $t = -2.530$. This is the cross-level interaction involving the percentage of persons in poverty in an SPUMA on the association between unemployment status and extreme poverty. The findings are significant and suggest that for every increase in percentage of those in poverty in the SPUMA, other things equal, the slope of unemployment on extreme poverty is decreased by .027. Thus, a higher percentage of those in poverty lessen the magnitude of the slope of unemployment on extreme poverty. The $\gamma_{22}$ coefficient is 0.045 $t = 1.074$. This is the cross-level interaction involving the macro-level variable of percentage of persons employed in service occupations (WTSERV) on the slope of unemployment on extreme poverty. The effect is not significant.

The $\gamma_{30}$ coefficient is 1.812 $t = 6.516$. This is the main effect of the household head's undocumented status on the probability of being in extreme poverty. A positive effect was hypothesized and is evidenced below. Hence, for those who are

undocumented the odds of being in extreme poverty are multiplied by 6.12. This is highly significant and very important to the findings for this analysis as they indicate that undocumented status has quite an impact on poverty status at both the individual and contextual level. The $\gamma_{31}$ coefficient is -0.040 $t$ = -1.374. This is the cross-level interaction involving the percentage in poverty on the level-1 coefficient of undocumented on extreme poverty status. The effect is not significant. The $\gamma_{32}$ coefficient is 0.302 $t$ = 1.393. This is the cross-level interaction involving the macro-level variable of percentage of those employed in service occupations on the slope of undocumented status on extreme poverty. The effect also is not significant.

The remainder of the findings for Mexican immigrants is presented in table format and shown below. A total of 12 tables are presented relative to the Mexican immigrant population in the Southwest United States and are based on a sample population of 12,122 household heads collected from the American Community Survey, 2006. These household heads are nested within 42 SPUMAs. The tables are presented first with the undocumented variable in place and then with the undocumented variable omitted in favor of number of years spent in the USA and citizenship status (see Figure 9 for organization of Models). Table 27.2 is presented below and contains information on the macro-level predictors of percentage in poverty and percentage of Hispanic immigrants. Tables 27.3 and 27.4 contain the same macro-level predictors; however the variables for undocumented status and number of children have been removed in favor of number years spent in the USA and citizenship status.

In summary, the results in these tables indicate that among Mexican immigrants in extreme poverty the direct effect of greater concentrations of those in poverty in the

SPUMA was positive and significant in each case. Additionally, this macro-level variable amplified the effect of number of children present and lessened the relationship of unemployment, citizenship, years spent in the USA, and undocumented status on extreme poverty. The percentage of those employed in service occupations displayed a negative, direct effect on extreme poverty, contrary to what was hypothesized. Finally, a greater concentration of Hispanic immigrants in the SPUMA resulted in a negative direct effect on extreme poverty. This was also contrary to hypothesis and as mentioned above may be due to the idea that immigration is related to higher levels of economic development. A greater concentration of immigrants also resulted in a magnification of the relationship between undocumented status and extreme poverty and a lessening of the relationship between number of years spent in the USA and extreme poverty.

**TABLE 27.2 HGLM Equation: Mexican Immigrants (Model 1AB)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Extreme Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -3.199 | 0.041 | 0.059 | -54.255*** |
| WTPOV $\gamma_{01}$ | 0.093 | 1.098 | 0.013 | 7.003*** |
| WTIMM $\gamma_{02}$ | -0.043 | 0.958 | 0.011 | -3.606*** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.330 | 1.391 | 0.027 | 12.216*** |
| WTPOV $\gamma_{11}$ | 0.007 | 1.007 | 0.003 | 2.042** |
| WTIMM $\gamma_{12}$ | -0.001 | 0.999 | 0.003 | -0.401 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 1.359 | 3.891 | 0.066 | 20.715*** |
| WTPOV $\gamma_{21}$ | -0.014 | 0.986 | 0.013 | -1.067 |
| WTIMM $\gamma_{22}$ | -0.016 | 0.984 | 0.010 | -1.662 |
| For UNDOC slope, | | | | |
| Intercept $\gamma_{30}$ | 1.669 | 5.305 | 0.344 | 4.847*** |
| WTPOV $\gamma_{31}$ | -0.109 | 0.897 | 0.029 | -3.735*** |
| WTIMM $\gamma_{32}$ | 0.098 | 1.103 | 0.047 | 2.094** |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

**TABLE 27.3 HGLM Equation: Mexican Immigrants (Model 1BA)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Extreme Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -3.183 | 0.041 | 0.055 | -57.759*** |
| WTPOV $\gamma_{01}$ | 0.059 | 1.061 | 0.008 | 7.061*** |
| WTSERV $\gamma_{02}$ | -0.080 | 0.923 | 0.037 | -2.158** |
| For YRUSA1 slope, | | | | |
| Intercept $\gamma_{10}$ | -0.026 | 0.975 | 0.003 | -8.300*** |
| WTPOV $\gamma_{11}$ | -0.002 | 0.998 | 0.000 | -5.998*** |
| WTSERV $\gamma_{12}$ | 0.001 | 1.001 | 0.002 | 0.481 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 1.336 | 3.804 | 0.050 | 26.941*** |
| WTPOV $\gamma_{21}$ | -0.023 | 0.977 | 0.010 | -2.332** |
| WTSERV $\gamma_{22}$ | 0.049 | 1.051 | 0.037 | 1.345 |
| For CIT slope, | | | | |
| Intercept $\gamma_{30}$ | -0.420 | 0.657 | 0.086 | -4.876*** |
| WTPOV $\gamma_{31}$ | -0.021 | 0.979 | 0.010 | -2.135** |
| WTSERV $\gamma_{32}$ | -0.012 | 0.987 | 0.060 | -0.210 |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

**TABLE 27.4 HGLM Equation: Mexican Immigrants (Model 1BB)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Extreme Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -3.212 | 0.040 | 0.055 | -58.445*** |
| WTPOV $\gamma_{01}$ | 0.088 | 1.091 | 0.012 | 6.931*** |
| WTIMM $\gamma_{02}$ | -0.051 | 0.950 | 0.011 | -4.506*** |
| For YRUSA1 slope, | | | | |
| Intercept $\gamma_{10}$ | -0.030 | 0.970 | 0.004 | -7.482*** |
| WTPOV $\gamma_{11}$ | -0.001 | 0.999 | 0.001 | -1.443 |
| WTIMM $\gamma_{12}$ | -0.002 | 0.998 | 0.001 | -2.923*** |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 1.352 | 3.864 | 0.062 | 21.660*** |
| WTPOV $\gamma_{21}$ | -0.015 | 0.985 | 0.012 | -1.197 |
| WTIMM $\gamma_{22}$ | -0.011 | 0.989 | 0.009 | -1.117 |
| For CIT slope, | | | | |
| Intercept $\gamma_{30}$ | -0.413 | 0.662 | 0.099 | -4.160*** |
| WTPOV $\gamma_{31}$ | -0.032 | 0.969 | 0.019 | -1.694 |
| WTIMM $\gamma_{32}$ | 0.013 | 1.013 | 0.018 | 0.711 |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

Tables 28.1 and 28.2 contain information on the following micro-level predictors for those in 100 percent poverty: number of children present, unemployment status, and undocumented status. Table 28.1 presents findings relative to the two macro-level predictors of percentage of those in poverty as well as percentage of those employed in service occupations. Table 28.2 presents findings for the two macro-level predictors of percentage of those in poverty in conjunction with the percentage of Hispanic immigrants in the SPUMA. Table 28.3 presents findings for the macro-level predictors of percentage in poverty and percentage employed in professional occupations (the variable for professional occupation was chosen in favor of service given that no significance was detected), while the micro-level predictors have been amended to include number of years spent in the USA, unemployment status, and citizenship status. Table 28.4 contains the same micro-level predictors and the macro-level predictors of percentage in poverty and percentage of Hispanic immigrants. A one-way ANOVA has been performed and indicates that about 4.7 percent of the variance in 100 percent poverty occurs at the contextual level. This $\tau_{00} = .47$ value is significantly different from zero and indicates there is enough variation in 100 percent poverty at level-2, among the 42 SPUMAs to warrant further analysis.

In summary, the results in these tables indicate that as evidenced above, greater concentrations of those in poverty in the SPUMA resulted in a positive, direct effect on 100 percent poverty as hypothesized. This macro-level variable also lessened the relationship between unemployment and 100 percent poverty. Also, a greater

concentration of Hispanic immigrants in the SPUMA resulted in a negative, direct effect on 100 percent poverty as shown above.

**TABLE 28.1 HGLM Equation: Mexican Immigrants (Model 2AA)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of 100% Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -1.398 | 0.247 | 0.047 | -29.718*** |
| WTPOV $\gamma_{01}$ | 0.055 | 1.057 | 0.007 | 7.934*** |
| WTSERV $\gamma_{02}$ | -0.028 | 0.972 | 0.031 | -0.926 |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.382 | 1.466 | 0.016 | 23.450*** |
| WTPOV $\gamma_{11}$ | 0.003 | 1.003 | 0.002 | 1.174 |
| WTSERV $\gamma_{12}$ | -0.013 | 0.987 | 0.013 | -0.966 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.927 | 2.527 | 0.050 | 18.482*** |
| WTPOV $\gamma_{21}$ | -0.017 | 0.983 | 0.007 | -2.514** |
| WTSERV $\gamma_{22}$ | 0.017 | 1.018 | 0.031 | 0.572 |
| For UNDOC slope, | | | | |
| Intercept $\gamma_{30}$ | 1.471 | 4.352 | 0.289 | 5.089*** |
| WTPOV $\gamma_{31}$ | -0.022 | 0.979 | 0.048 | -0.429 |
| WTSERV $\gamma_{32}$ | 0.221 | 1.247 | 0.154 | 1.432 |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

**TABLE 28.2 HGLM Equation: Mexican Immigrants (Model 2AB)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of 100% Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -1.388 | 0.249 | 0.045 | -31.145*** |
| WTPOV $\gamma_{01}$ | 0.072 | 1.074 | 0.008 | 8.849*** |
| WTIMM $\gamma_{02}$ | -0.030 | 0.971 | 0.008 | -3.813*** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.384 | 1.468 | 0.023 | 16.179*** |
| WTPOV $\gamma_{11}$ | 0.004 | 1.004 | 0.004 | 0.979 |
| WTIMM $\gamma_{12}$ | -0.003 | 0.997 | 0.004 | -0.750 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.959 | 2.609 | 0.053 | 17.994*** |

| | | | | |
|---|---|---|---|---|
| WTPOV $\gamma_{21}$ | -0.008 | 0.992 | 0.008 | -1.047 |
| WTIMM $\gamma_{22}$ | -0.013 | 0.987 | 0.007 | -1.836** |
| For UNDOC slope, | | | | |
| Intercept $\gamma_{30}$ | 1.681 | 5.373 | 0.375 | 4.487*** |
| WTPOV $\gamma_{31}$ | 0.041 | 1.042 | 0.074 | 0.555 |
| WTIMM $\gamma_{32}$ | -0.084 | 0.919 | 0.062 | -1.358 |
| **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

**TABLE 28.3 HGLM Equation: Mexican Immigrants (Model 2BA)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of 100% Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -1.441 | 0.237 | 0.051 | -28.093*** |
| WTPOV $\gamma_{01}$ | 0.041 | 1.042 | 0.011 | 3.784*** |
| WTPROF $\gamma_{02}$ | -0.032 | 0.968 | 0.019 | -1.665 |
| For YRUSA1 slope, | | | | |
| Intercept $\gamma_{10}$ | -0.039 | 0.962 | 0.003 | -12.775*** |
| WTPOV $\gamma_{11}$ | -0.001 | 0.999 | 0.001 | -1.225 |
| WTPROF $\gamma_{12}$ | -0.003 | 0.997 | 0.002 | -1.867** |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.947 | 2.578 | 0.044 | 21.431*** |
| WTPOV $\gamma_{21}$ | -0.022 | 0.978 | 0.008 | -2.941*** |
| WTPROF $\gamma_{22}$ | -0.022 | 0.978 | 0.022 | -1.000 |
| For CIT slope, | | | | |
| Intercept $\gamma_{30}$ | -0.653 | 0.520 | 0.060 | -10.945*** |
| WTPOV $\gamma_{31}$ | -0.027 | 0.973 | 0.011 | -2.370** |
| WTPROF $\gamma_{32}$ | -0.001 | 0.999 | 0.029 | -0.037 |
| *p<.1, **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

**TABLE 28.4 HGLM Equation: Mexican Immigrants (Model 2BB)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of 100% Poverty**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | -1.440 | 0.237 | 0.048 | -30.089*** |
| WTPOV $\gamma_{01}$ | 0.073 | 1.075 | 0.008 | 8.604*** |
| WTIMM $\gamma_{02}$ | -0.034 | 0.966 | 0.009 | -4.022*** |
| For YRUSA1 slope, | | | | |
| Intercept $\gamma_{10}$ | -0.040 | 0.961 | 0.003 | -12.353*** |
| WTPOV $\gamma_{11}$ | 0.001 | 1.001 | 0.001 | 1.062 |

| | | | | |
|---|---|---|---|---|
| WTIMM $\gamma_{12}$ | -0.001 | 0.999 | 0.001 | -1.437 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.952 | 2.590 | 0.049 | 19.443*** |
| WTPOV $\gamma_{21}$ | -0.011 | 0.989 | 0.008 | -1.398 |
| WTIMM $\gamma_{22}$ | -0.007 | 0.993 | 0.007 | -1.049 |
| For CIT slope, | | | | |
| Intercept $\gamma_{30}$ | -0.667 | 0.513 | 0.069 | -9.370*** |
| WTPOV $\gamma_{31}$ | -0.022 | 0.978 | 0.011 | -1.951** |
| WTIMM $\gamma_{32}$ | -0.007 | 0.993 | 0.009 | -0.819 |
| *p<.1, **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

Tables 29.1-4 present the findings relative to the Mexican immigrant population in low income. Four tables are presented and the first two (Table 29.1 and 29.2) describe the micro-level predictors of number of children present, unemployment status, and undocumented status. This is in accordance with each of the models performed above. These two tables also contain information on the macro-level predictors of percentage of persons employed in either agricultural or professional occupations, the percentage in poverty, and the percentage of Hispanic immigrants in the area. These macro-level predictors were chosen based on level of significance observed in preliminary analyses, and thus a departure from previous analyses is taken by way of omission of percentage employed in service occupations for those employed in agriculture and professional occupations. Tables 29.3 and 29.4 present the findings relative to three micro-level predictors of number of years spent in the USA, unemployment status and citizenship status. These models contain the same macro-level predictors mentioned above. Additionally, a one-way ANOVA has been performed for this population and indicates that about 4.3 percent of the variance in low income status occurs at the contextual level. This level-2 variance, i.e., $\tau_{00} = .043$, is significantly different from zero; hence there is

variation in low income at level-2, i.e., among the 42 SPUMAs, justifying my conduct of a multi-level analysis of low income.

In summary, the results in these tables indicate that a greater concentration of poverty in the SPUMA coincided with a positive, direct effect on low income status. For those immigrants in low income, it also magnified the relationship between number of children present, number of years spent in the USA, and unemployment on low income status. This macro-level variable lessened the relationship between undocumented and low income status. A greater concentration of immigrants in the SPUMA resulted in a negative, direct effect on low income status. This variable lessened the relationship between number of children present, years spent in the USA, citizenship status, and unemployment status with low income status; and magnified the relationship between undocumented status and low income status. This is essentially the exact opposite of the relationship observed for the WTPOV variable; hence, suggesting a greater concentration of those in poverty acts exacerbates the situation of poverty for the individual while a greater concentration of immigrants offers relief from poverty in some sense. A greater concentration of those employed in professional occupations (WTPROF) in the SPUMA displayed a negative, direct effect on low income status as hypothesized. This variable also lessened the relationship between unemployment and years spent in the USA on low income status. The macro-level variable for those employed in agricultural occupations (WTAG) in the SPUMA lessened the relationship between undocumented status and low income.

**TABLE 29.1 HGLM Equation: Mexican Immigrants (Model 3AA)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on**

| **the Likelihood of Low Income<br>12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006** | | | | |
|---|---|---|---|---|
| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
| Intercept $\gamma_{00}$ | 0.461 | 1.586 | 0.055 | 8.388*** |
| WTAG $\gamma_{01}$ | 0.005 | 1.005 | 0.023 | 0.216 |
| WTPROF $\gamma_{02}$ | -0.083 | 0.920 | 0.024 | -3.497*** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.435 | 1.545 | 0.018 | 24.197*** |
| WTAG $\gamma_{11}$ | 0.001 | 1.001 | 0.006 | 0.107 |
| WTPROF $\gamma_{12}$ | -0.011 | 0.989 | 0.008 | -1.405 |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.671 | 1.956 | 0.051 | 13.128*** |
| WTAG $\gamma_{21}$ | -0.024 | 0.977 | 0.017 | -1.375 |
| WTPROF $\gamma_{22}$ | -0.057 | 0.944 | 0.021 | -2.801** |
| For UNDOC slope, | | | | |
| Intercept $\gamma_{30}$ | 2.101 | 8.178 | 0.295 | 7.127*** |
| WTAG $\gamma_{31}$ | -0.278 | 0.757 | 0.074 | -3.782*** |
| WTPROF $\gamma_{32}$ | -0.038 | 0.962 | 0.107 | -0.358 |
| **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

| **TABLE 29.2 HGLM Equation: Mexican Immigrants (Model 3AB)<br>Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Low Income<br>12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006** | | | | |
|---|---|---|---|---|
| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
| Intercept $\gamma_{00}$ | 0.477 | 1.611 | 0.047 | 10.229*** |
| WTPOV $\gamma_{01}$ | 0.069 | 1.072 | 0.008 | 8.257*** |
| WTIMM $\gamma_{02}$ | -0.042 | 0.958 | 0.008 | -5.574*** |
| For NCHILD slope, | | | | |
| Intercept $\gamma_{10}$ | 0.451 | 1.571 | 0.022 | 20.200*** |
| WTPOV $\gamma_{11}$ | 0.013 | 1.013 | 0.004 | 3.817*** |
| WTIMM $\gamma_{12}$ | -0.009 | 0.991 | 0.003 | -2.955** |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.729 | 2.072 | 0.056 | 12.942*** |
| WTPOV $\gamma_{21}$ | 0.025 | 1.025 | 0.010 | 2.640*** |
| WTIMM $\gamma_{22}$ | -0.027 | 0.973 | 0.010 | -2.711*** |
| For UNDOC slope, | | | | |
| Intercept $\gamma_{30}$ | 1.744 | 5.718 | 0.281 | 6.202*** |
| WTPOV $\gamma_{31}$ | -0.191 | 0.826 | 0.062 | -3.100*** |
| WTIMM $\gamma_{32}$ | 0.099 | 1.104 | 0.045 | 2.193** |
| **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000 | | | | |

**TABLE 29.3 HGLM Equation: Mexican Immigrants (Model 3BA)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Low Income**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | 0.457 | 1.580 | 0.055 | 8.244*** |
| WTAG $\gamma_{01}$ | 0.006 | 1.006 | 0.023 | 0.247 |
| WTPROF $\gamma_{02}$ | -0.081 | 0.922 | 0.024 | -3.414*** |
| For YRUSA1 slope, | | | | |
| Intercept $\gamma_{10}$ | -0.293 | 0.746 | 0.018 | -16.724*** |
| WTAG $\gamma_{11}$ | -0.009 | 0.991 | 0.006 | -1.402 |
| WTPROF $\gamma_{12}$ | -0.028 | 0.973 | 0.009 | -2.978*** |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.609 | 1.839 | 0.047 | 12.965*** |
| WTAG $\gamma_{21}$ | -0.021 | 0.979 | 0.016 | -1.320 |
| WTPROF $\gamma_{22}$ | -0.041 | 0.960 | 0.020 | -2.005** |
| For CIT slope, | | | | |
| Intercept $\gamma_{30}$ | -0.690 | 0.502 | 0.048 | -14.422*** |
| WTAG $\gamma_{31}$ | 0.011 | 1.011 | 0.016 | 0.677 |
| WTPROF $\gamma_{32}$ | 0.019 | 1.019 | 0.022 | 0.892 |

*p<.1, **p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

**TABLE 29.4 HGLM Equation: Mexican Immigrants (Model 3BB)**
**Effects with Robust Standard Errors, of Individual and SPUMA Characteristics on the Likelihood of Low Income**
**12,122 Household Heads of Mexican Immigrants in 42 SPUMAs, 2006**

| *Fixed Effect* | *Coefficient* | *Odds Ratio* | *Standard Error* | *T-ratio* |
|---|---|---|---|---|
| Intercept $\gamma_{00}$ | 0.468 | 1.596 | 0.046 | 10.097*** |
| WTPOV $\gamma_{01}$ | 0.068 | 1.070 | 0.009 | 7.983*** |
| WTIMM $\gamma_{02}$ | -0.040 | 0.960 | 0.008 | -5.260*** |
| For YRUSA1 slope, | | | | |
| Intercept $\gamma_{10}$ | -0.286 | 0.751 | 0.019 | -14.872*** |
| WTPOV $\gamma_{11}$ | 0.012 | 1.012 | 0.005 | 2.557*** |
| WTIMM $\gamma_{12}$ | -0.011 | 0.989 | 0.004 | -2.969*** |
| For UNEMPLOY slope, | | | | |
| Intercept $\gamma_{20}$ | 0.659 | 1.933 | 0.051 | 12.812*** |
| WTPOV $\gamma_{21}$ | 0.017 | 1.017 | 0.010 | 1.718 |
| WTIMM $\gamma_{22}$ | -0.022 | 0.978 | 0.008 | -2.706*** |
| For CIT slope, | | | | |
| Intercept $\gamma_{30}$ | -0.676 | 0.508 | 0.056 | -12.151*** |
| WTPOV $\gamma_{31}$ | -0.007 | 0.993 | 0.009 | -0.754 |
| WTIMM $\gamma_{32}$ | -0.015 | 0.985 | 0.007 | -2.086** |

**p<.05, ***p<.01. Source American Community Survey 2006 and Decennial Census 2000

*Summary of Findings*

In summation of the findings for Mexican immigrants, it is important to note that greater concentrations of professional occupations resulted in the hypothesized relationships. For example, the direct effect of percentage employed in professional occupations was negative and highly significant among those in low income (see Table 29.1). However, the effect of employment in service and agricultural occupations performed in directions opposite to what I had hypothesized. For example, a greater concentration of agricultural occupations resulted in a lowered association between undocumented status and low income status (see Table 29.1). It would seem that greater concentrations of agricultural employment would magnify the effect of undocumented status, but this not the case. Furthermore, the direct effect of percentage employed in service occupations was negative for Mexican immigrants in extreme poverty (see Table 27.1). It is possible that this is due to the fact that employment of any nature lessens the effects of poverty. Other noteworthy findings were that the percentage of those in poverty in the area heightened the magnitude of number of children present on extreme poverty, greater concentrations of immigrants lessened the association between unemployment and extreme poverty, the percentage employed in service occupations heightens the association between unemployment and extreme poverty, and greater concentrations in poverty result in a lessening of the association between number of years spent in the USA and extreme poverty.

With regard to the prediction of 100 percent poverty, greater concentrations of those employed in service occupations resulted in a magnification of the association

between undocumented status and 100 percent poverty. The percentage in poverty decreased the effect of unemployment on 100 percent poverty, a greater percentage of Hispanic immigrants lessened the effect of unemployment, and greater concentrations of those employed in professional occupations lessened the slope of unemployment on 100 percent poverty. Unexpectedly, the direct effect of percentage of Hispanic immigrants on 100 percent poverty was negative. In other words, the odds of being in 100 percent poverty were multiplied by .97 times with each increase in percentage of immigrants, other things equal.

Overall, the substantive findings observed in relation to both sample populations were highly significant and revealed a good deal of relevant information. For the most part, the hypothesized relationships were confirmed. However, several of the relationships for type of occupation performed unexpectedly. The multilevel analyses were informative and offer much in the way of discovery. At the individual level, the hypothesized relationships were confirmed unanimously. And most importantly, the findings for Mexican immigrants indicate that undocumented status along with citizenship status play a very important role in the determination of poverty at any level. At the macro-level, it was also observed that many of the hypothesized relationships were confirmed as well. In some cases, a lack of significance was present, and it is possible that this was due to the fact that the SPUMAs did not contain enough variation for a significant impact to be observed, i.e. the rate of employment in service occupations ranged from about 9 percent to about 17 percent, for example. However, the results did reveal several significant macro-level effects. Additionally, the results confirm that the cross-level interactions observed are well worth investigating.