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An Exploratory Study of the Restricted-Use ELS:2002 Dataset: Using Finite Mixture Modeling as a Way to Problematize the "Model Minority Stereotype"

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ABSTRACT

Rather than review *what* the "model minority" stereotype is, or what the literature says about it, this article instead reviews the methodologies that researchers and higher academicians have employed when conducting their scholarship on dispelling the model minority stereotype. The purpose of this empirical paper was to test whether the "model minority" does, in fact, homogenize Asian American socio-demographic realities. We sought to examine whether there were underlying subgroups of students who share similar demographic characteristics as Asian Americans. The researchers analyzed representative national data procured from the restricted-use Educational Longitudinal Study of 2002 (ELS:2002). This study is different from other studies insofar as the researchers used finite mixture modeling (FMM) as a methodological approach to demystifying the model minority stereotype. If the model minority stereotype of Asian Americans were true, then one might expect Asian American students to be members of the same latent class as their White counterparts. This pattern of student membership was not only absent in the findings of this study, but the researchers found that class membership among Asian American students was the most varied of the more prevalent minority groups represented in the data.

Indexing terms/Keywords

Model Minority Stereotype, Model Minority Myth

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INTRODUCTION

Since the 1990s, and especially during the 2000s, Asian Americans have frequently been cast as "model minorities" in our nation's elementary, middle, and high schools (Chae, 2004; Kim, 2007; Lee, 2001; Lee & Rotheram-Borus, 2009; Wexler & Pyle, 2012), colleges, (Toupin, & Son, 1991), universities (Chu, 1991; Mooko, 1995; Ying, Lee, Tsai, Hung, Lin, & Wan, 2001), and workplaces (Eguchia & Starosta, 2012). Consequently, this "model minority" stereotype of Asians in America is constitutes a "halo" effect that continues to excite social scientists as a topic of research.

The authors of the present article are no exception and are interested in furthering this line of inquiry. First, a review of the literature on the model minority stereotype is provided. Particular attention is paid to the methodologies that have been utilized while critiquing the model minority stereotype of Asian Americans. Next, the study's purpose is presented, followed by a description of the data and the methodology that was used to analyze it. The article concludes with the study's findings and implications for future research on what the authors refer to as the "sociology" of the model minority stereotype.

REVIEW OF THE LITERATURE

Model Minority Stereotype

William Petersen (1966) is generally considered to be the person who originated the concept of the model minority. Petersen's article, printed in *The New York Times Magazine* ("Success Story, Japanese American Style," January 6, 1966), compared the plight of Japanese Americans, who had pulled themselves up by the "bootstraps" after their internment during World War II, to that of African Americans. Petersen'ssweeping generalizations set in motion the belief that all Asian immigrants were successful and that they neither needed governmental support nor Civil Rights legislation in order to get ahead.

The model minority stereotype characterizes Asian Americans as successful in many social spheres, especially school. The limitations of this positive caricature have been noted by countless researchers and scholars (e.g., see Hartlep's [2012b] comprehensive review on the model minority stereotype). While research on the "concept" and the "consequences" of the model minority stereotype are valuable, we take on a different purpose in this article.

Rather than review what the "model minority" stereotype is, or what the literature says about it, the next section of our article reviews the methodologies that researchers and higher academicians have employed when conducting their scholarship on dispelling the model minority stereotype. Hartlep (2013) maintains that a significant obstacle to demystifying the model minority stereotype lies in the fact that scholars have over-relied on certain kinds of methodologies and approaches. This marks the present study as particularly significant since it contributes a new methodology for testing the validity of the model minority stereotype.

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Rather than review *what* the "model minority" stereotype is, or what the literature says about it, the next section of our article reviews the *methodologies* that researchers and higher academicians have employed when conducting their scholarship on dispelling the model minority stereotype. Hartlep (2013) maintains that a significant obstacle to demystifying the model minority stereotype lies in the fact that scholars have over relied on certain kinds of methodologies and approaches. This makes the present study important work since it contributes a new methodology for testing the validity of the model minority stereotype.

Methodologies Used to Combat the Model Minority Stereotype

A close examination of the model minority stereotype literature reveals that scholars have used qualitative (Asher, 2001; Green & Kim, 2005; Lee et al., 2009; Lew, 2011), quantitative (Teranishi, 2002, 2010), case study (Li, 2005, 2009; Wexler & Pyle, 2012), interdisciplinary (Lee, 2002; Li & Wang, 2008), and mixed methods (Trytten, Lowe, & Walden, 2012) when carrying out their investigations.

Finite mixture modeling (FMM) has never been used as a quantitative or methodological way to examine the model minority stereotype. We can safely conclude this because the first author has conducted extensive research, on the model minority stereotype and has yet to find a single instance of FMM having been employed. Hartlep's (2013) *Model Minority Stereotype: Demystifying Asian American Success* analyzed over 500 pieces of written literature on the model minority stereotype (n = 504). His review included peer-reviewed and non-peer-reviewed articles (n = 192), books (n = 24), book chapters (n = 91), book reviews (n = 4), magazine articles (n = 28), newspaper articles (n = 19), essays (n = 8), reports (n = 14), encyclopedia entries (n = 15), media interviews/podcasts (n = 4), dictionary entries (n = 1), conference papers (n = 11), op-eds (n = 8), movies/films (n = 10), cartoons (n = 7), theses (n = 37), and dissertations (n = 31). Nary a single example of FMM was to be found.

Purpose

The purpose of this empirical paper was to test whether the "model minority" does, in fact, homogenize Asian American socio-demographic realities. We sought to examine whether there were underlying subgroups of students who share

similar demographic characteristics as Asian Americans. We approached this study of quantitative data (restricted use ELS:2002) differently than other academics insofar as we used finite mixture modeling (FMM) as a methodological approach to demystifying the model minority stereotype of Asian Americans.

METHODS

Participants

The sample used in this study came from the Educational Longitudinal Study of 2002 (ELS:2002), which was "designed to monitor the transition of a national sample of young people as they progress from tenth grade through high school and on to postsecondary education and/or the world of work" (Institute of Education Sciences, n.d.). Interested readers should visit the ELS:2002 section of the Institute of Educational Sciences website for more information on the design of the ELS:2002 (www.nces.ed.gov/surveys/els2002). Permission to use the data was granted to the authors by IES, and the "restricted-use" data were loaded and housed on a secured computer in accordance with the IES security requirements. The sample consisted of the 12,270 10th grade students in the ELS:2002 who had complete data for the variables used in the study.

The sample was composed of 52.4% females. The most commonly reported race/ethnicity backgrounds were White, non-Hispanic (*n* = 7,360, 60.0%) and Black or African American, non-Hispanic (*n* = 1,440, 11.7%). About a third of the sample (35.6%) reported being from the South region, and about half (49.3%) reported living in suburban areas. Approximately 84.6% of the students identified English as being their home language. The most commonly reported mother's education level was high school or GED (*n* = 3,320, 27.0%), and father's education level was high school or GED (*n* = 3,460, 28.2%). The second most common education level for the students' mothers and fathers was four-year degree (*n* = 2,330, 19.0%; nF = 2,280, 18.5%). The most frequently reported educational aspiration for students by parents was a four-year degree (*n* = 5,470, 44.5%). The majority of students in the sample did not use testing accommodations (*n* = 12,220, 99.6%) and did not work (*n* = 7,640, 62.3%). The reported race/ethnic background of student's first friend was White, non-Hispanic for 65% of the students and Black or African American, non-Hispanic for 12.4% of the students. The complete demographic summary for students is presented in Table 1 and for parents is presented in Table 2.

Table 1. Student demographic composition

Variable	Frequency (*n*)	Percentage (%)
Sex		
Female	6,430	52.4
Male	5,850	47.6
Home language		
English	10,380	84.6
Spanish	800	6.5
Other European language	80	0.6
West / South Asian language	160	1.3
Pacific Asian / Southeast Asian language	600	4.9
Other language	240	2.0
Test Accommodations		
No accommodations	12,220	99.6
Extra time or other	60	0.5
First friend's race		
American Indian / Alaska native	90	0.7
Asian, non-Hispanic	790	6.5
Black or African American, non-Hispanic	1,520	12.4
Hispanic, no race specified	930	7.6
Hispanic, race specified	600	4.9
More than one race, non-Hispanic	290	2.4
Native Hawaiian / Pacific islander	90	0.7
White, non-Hispanic	7,970	65.0
Worked in high school		
Yes	7,640	62.3
No	4,630	37.8
Urbanicity		
Urban	3,940	32.1
Suburban	6,050	49.3
Rural	2,290	18.7
Region		
Northeast	2,300	18.8
Midwest	3,190	26.0
South	4,360	35.6
West	2,420	19.7

Table 2. Students' parents demographic composition

Variable	Frequency (*n*)	Percentage (%)
Mother's education level		
Did not finish high school	1,390	11.3
Graduated from high school or GED	3,320	27.0
Attended 2-year school, no degree	1,500	12.2
Graduated from 2-year school	1,330	10.8
Attended college, no 4-year degree	1,300	10.6
Graduated from college	2,330	19.0
Completed Master's degree or equivalent	870	7.1
Completed PhD, MD, other advanced degree	240	2.0
Father's education level		
Did not finish high school	1,480	12.1
Graduated from high school or GED	3,470	28.2
Attended 2-year school, no degree	1,160	9.5
Graduated from 2-year school	970	7.9
Attended college, no 4-year degree	1,170	9.5
Graduated from college	2,280	18.5
Completed Master's degree or equivalent	1,050	8.6
Completed PhD, MD, other advanced degree	700	5.7
Parents' educational aspirations for child		
Less than high school graduation	10	0.1
High school graduation of GED only	380	3.1
Attend or complete 2-year college / school	890	7.2
Attend college, 4-year degree incomplete	100	0.8
Graduate from college	5,470	44.5
Obtain Master's degree or equivalent	2,650	21.6
Obtain PhD, MD, or other advanced degree	2,780	22.7

ANALYSIS

We used finite mixture modeling (FMM) to examine whether there were underlying subgroups of students who share similar demographic characteristics. When used for the purposes of classification, FMM is a model-based approach that can be used to identify underlying subgroups of people who tend to have more similar values on the measured variables than with people in other subgroups. The procedure gets its name from the assumption that an observed dataset is comprised of a mixture of data collected from a finite number of mutually exclusive classes, each of which has its own characteristics. The goal of FMM-based classification procedures is to correctly classify similar cases into one of K subgroups whose characteristics are unknown a priori. FMM treats the underlying class variable as a categorical latent variable. As such, class membership must be measured indirectly using two or more observed, or indicator, variables, which are subject to measurement error. Although FMM often uses only categorical or quantitative indicators, Morgan (2012) showed that FMM is possible with a combination of categorical and quantitative variables without decreasing model fit.

To employ FMM, one commonly fits a series of competing models to the data and considers several pieces of information when selecting the best approximating model of those tested. The information considered in model selection includes parsimony, interpretability, and statistical fit indices. In the current research, we fit models that contained two through five underlying subgroups, or classes, and recorded the fit indices and class characteristics. The models were estimated using robust maximum likelihood in Mplus (v. 6.12, Muthén & Muthén, 2012) software. Mplus includes a variety of fit measures that can aid in model selection. We examined the Akaike information criterion (AIC), Bayesian information criterion (BIC), sample size-adjusted Bayesian information criterion (aBIC), entropy, and Lo-Mendell-Rubin likelihood ratio test (LMR). Previous research has demonstrated that BIC-based estimates and LMR tend to be better performing indicators of model-data fit under a variety of research design conditions. We considered all of the fit indices but gave BIC-based estimates and LMR results more weight in the model selection process. For the AIC, BIC, and aBIC, relatively smaller values indicate better model fit. Entropy is a measure that provides the degree of certainty in classification procedures with one index. Thus, models that have higher values of entropy are considered better fitting models than models with lower entropy estimates. The LMR compares the improvement in fit between the k – 1 and k class models and provides a p-value that can be used to evaluate whether the improvement in fit for the inclusion of one additional class is statistically significant with 1 – α% confidence (Nylund, Asparouhov, & Muthén, 2007). The variables used as class indicators were sex, home language, mother's education, father's education, parent educational aspirations for student, work history, race of first friend, region, urbanicity, test accommodations, composite SES index, and composite standardized test score. The SES index is a composite of mother's education and occupation, father's education and occupation, and family income that has a mean of 0 and standard deviation of 1. The composite standardized test score is the mean of the reading and math standardized scores that has been re-standardized to a T distribution (M = 50, SD = 10). After fitting the series of competing models and selecting one as the best fitting, contingency tables were constructed to examine the race/ethnicity composition of students in each of the identified classes.

RESULTS

As noted above, we fit a series of competing models beginning with the two-class model. The AIC, BIC, and aBIC are all unitless estimates that must be used comparatively in competing models. The estimated entropy for the two-class model was .81, which suggested that the classes fairly well delineated. The LMR p-value supports a rejection of the null hypothesis that there are k – 1 underlying class. In other words, the LMR test results indicate that the two-class model fits better than a one-class model. When a third class was added, model improved for all of the information criteria. Entropy increased to .82; thus, class delineation was about the same as the two-class solution. The LMR test results indicate that the three-class model fits better than a two-class model. Model fit similarly improved for all indices when estimating a model with four-classes. When a fifth class was added, we observed improved model fit (i.e., smaller values) for AIC, BIC, and aBIC but to a lesser extent than previous model comparisons. The entropy value decreased slightly to .80, and the LMR results showed that the fit was not improved by adding a fifth class. While jointly considering the model-data fit information, model parsimony, and interpretability, we selected the four-class model as the best approximating model of those examined. A summary of the fit information for the models examined is presented in Table 3.

Table 3. Fit summaries for competing models

Classes	AIC	BIC	aBIC	Entropy	LMR p-value
2	366939	367584	367308	.811	<.001
3	360019	360983	360570	.818	<.001
4	356445	357727	357178	.819	<.001
5	354494	356069	355409	.796	.84

The discovered classes were of different sizes, as expected. The first class was composed of 24.7% of the students; the second class made up 41.6% of the sample; the third class was the smallest representing 11.1% of the sample; the fourth class represented 22.6% of the students. The characteristics of each will be discussed in the order of class size, and the class-specific summaries are provided in Tables 4 and 5.

Table 4. Class-specific student demographics

Variable	Class 1 (%)	Class 2 (%)	Class 3 (%)	Class 4 (%)
Sex				
Female	53.9	51.8	54.6	50.7
Male	46.1	48.2	45.4	49.3
Home language				
English	97.2	89.7	30.3	88.2
Spanish	--	3.5	41.5	2.0
Other European language	1.1	0.5	0.4	0.5
West / South Asian language	0.1	1.0	2.5	2.6
Pacific Asian / Southeast Asian language	0.2	3.8	19.1	5.4
Other language	1.3	1.6	6.3	1.4
Test Accommodations				
No accommodations	99.2	99.8	99.3	99.6
Extra time or other	0.8	0.2	0.7	0.4
First friend's race				
American Indian / Alaska native	0.8	0.8	1.0	0.4
Asian, non-Hispanic	0.6	4.9	23.1	7.6
Black or African American, non-Hispanic	20.9	11.8	9.5	5.5
Hispanic, no race specified	1.4	5.9	35.9	3.4
Hispanic, race specified	1.9	4.6	15.8	3.3
More than one race, non-Hispanic	1.8	2.8	1.5	2.5
Native Hawaiian / Pacific islander	0.1	0.9	1.5	0.5
White, non-Hispanic	72.58	68.2	11.9	76.8
Worked in high school				
Yes	41.9	40.6	25.1	34.2
No	58.1	59.4	75.0	65.8
Urbanicity				
Urban	21.5	29.5	52.3	38.5
Suburban	47.0	51.5	42.9	50.8
Rural	31.5	19.0	4.8	10.7
Region				
Northeast	17.4	20.4	13.4	19.9
Midwest	32.8	26.8	13.7	23.0
South	42.8	32.5	24.8	38.5
West	7.0	20.3	48.1	18.6

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Table 5. Class-specific students' parent demographics

Variable	Class 1 (%)	Class 2 (%)	Class 3 (%)	Class 4 (%)
Mother's education level				
Did not finish high school	14.5	1.6	63.5	0.0
Graduated from high school or GED	62.1	21.2	23.2	1.2
Attended 2-year school, no degree	11.5	20.1	4.5	2.2
Graduated from 2-year school	7.2	18.0	3.5	5.3
Attended college, no 4-year degree	3.8	18.5	3.3	6.9
Graduated from college	1.0	16.9	1.9	51.1
Completed Master's degree or equivalent	0.03	3.1	--	25.7
Completed PhD, MD, other advanced degree	--	0.7	--	7.6
Father's education level				
Did not finish high school	21.4	2.0	53.2	0.0
Graduated from high school or GED	62.9	23.3	27.1	0.0
Attended 2-year school, no degree	7.5	16.2	5.2	1.2
Graduated from 2-year school	3.4	15.0	4.8	1.2
Attended college, no 4-year degree	3.2	17.6	4.0	4.3
Graduated from college	1.2	20.6	3.6	41.1
Completed Master's degree or equivalent	0.2	4.1	1.3	29.7
Completed PhD, MD, other advanced degree	0.2	1.2	0.9	22.6
Parents' educational aspirations for child				
Less than high school graduation	0.1	0.9	0.3	0.0
High school graduation of GED only	7.6	4.8	6.8	0.4
Attend or complete 2-year college / school	18.2	0.5	4.7	0.9
Attend college, 4-year degree incomplete	1.8	50.4	1.3	0.2
Graduate from college	42.3	23.2	46.0	35.4
Obtain Master's degree or equivalent	13.4	20.3	15.6	30.7
Obtain PhD, MD, or other advanced degree	16.6	0.9	25.4	32.4

The second class in the four-class solution represented slightly less than half of the students and was characterized by students whose parents had less varied but slightly higher education levels on average and whose parents had slightly higher educational aspirations. Mothers tended to have educational levels between high school and four-year degrees but had slightly fewer four-year degrees or higher and fewer high-school degrees or lower. This pattern was observed for fathers as well. That is, there were more fathers with education levels between two-year college attendance to four-year degree completion. Parents' aspirations for the students tended to be slightly higher than for the overall sample. A higher percentage of parents reported that they hope their children obtain four-year degrees or higher. There was also a slightly higher percentage of students who worked while in high school (40.6%). Region and urbanicity distributions were fairly similar to the overall sample. This class had students of slightly above average SES index (M = 0.21, SD = 0.30) and standardized test scores (M = 52.4, SD = 8.5).

The first class was characterized by students whose home language was nearly exclusively English (91.2%) and whose parents were much less educated. Among mothers and fathers, about 75% had a high-school degree or GED or less. Fewer than 1% of mothers obtained a four-year degree and 1.2% of fathers of students in this class obtained a four-year degree. Parents also had lower educational aspirations for their children. A larger percentage of students worked while in high school (42.0%). This class was made up of proportionally more students who live in urban areas and are in the south. This class had below average SES (M = -0.57, SD = 0.34) and standardized test score composites (M = 47.2, SD = 8.5).

The fourth class was of similar size as the first class but was characterized much differently. About 88.2% of students in this class reported English as the language they speak at home. The parents of students in this class had much higher educational levels. Among mothers, about 85% had a four-year degree or higher. About 95% of fathers had four-year degrees or higher and 22.6% had advanced degrees (e.g., Ph.D., M.D., J.D.). Over 98% of the parents had educational aspirations of at least a four-year degree for their children. Slightly over a third (34.2%) of the students worked while in high school, and about 90% of the students lived in urban or suburban areas. Students in this class had SES (M = 1.04, SD = 0.29) and test score composites (M = 58.3, SD = 9.3) that were well-above average.

The third class was the smallest of the four. The most commonly spoken home language among students in this class was Spanish (41.2%) followed by English (30.3%) and Pacific Asian/Southeast Asian language (19.1%). Over half of the mothers and fathers of students in this class did not finish high school, and about half of these parents reported educational aspirations for their child of four-year degree completion. The two most commonly reported racial/ethnic backgrounds of students' first friends were Hispanic (51.7%) and Asian, non-Hispanic (23.1%). Only one quarter of students in this class worked while in high school. Over 95% of these students lived in urban or suburban areas, and about half of the students live in the western region of the United States. The SES (M = -0.92, SD = 0.40) and test score composites (M = 44.4, SD = 9.1) for students in this class were well below average and were clearly the lowest of the four classes.

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Latent Class and Student Race/Ethnicity

To examine the potential relationship between student race and latent class, two-way contingency tables were constructed and Cramer's V was computed. The estimated Cramer's V, which is a measure of strength of association between two categorical variables, was .33. The contingency tables were interpreted by rows and columns. The second, and largest, class consisted of 64.4% White, non-Hispanic and 11.1% Black, non-Hispanic students. The first latent class was 66.2% White, non-Hispanic and 20.1% Black, non-Hispanic. The fourth class was made up of 71.5% White, non-Hispanic and 12.1% Asian, non-Hispanic. The majority of students (55.4%) in the third, smallest class were Hispanic, and 25.6% were Asian, non-Hispanic.

When examining the distribution of the races/ethnicities across classes, we found that over 75% of the American Indian/Alaska native students were in the first or second class. Asian students were fairly even distributed across classes 2 (32.2%), 3 (32.6%), and 4 (31.3%) and were very unlikely to be classified in class 1 (3.9%). Black, non-Hispanic students were mostly likely to be classified in class 1 (42.5%) or class 2 (39.5%). Hispanic students were likely to be assigned to class 2 (33.5%) or class 3 (34.9%). Over half of the native Hawaiian/Pacific Islanders were classified into class 3. White, non-Hispanic students were not likely to be classified into class 3 (6.7%). These students were more likely to be found in class 1 (66.2%), class 2 (64.4%), or class 4 (71.5%). The percentages of students from each racial/ethnic background within each class are presented in Figure 1 and Table 6.

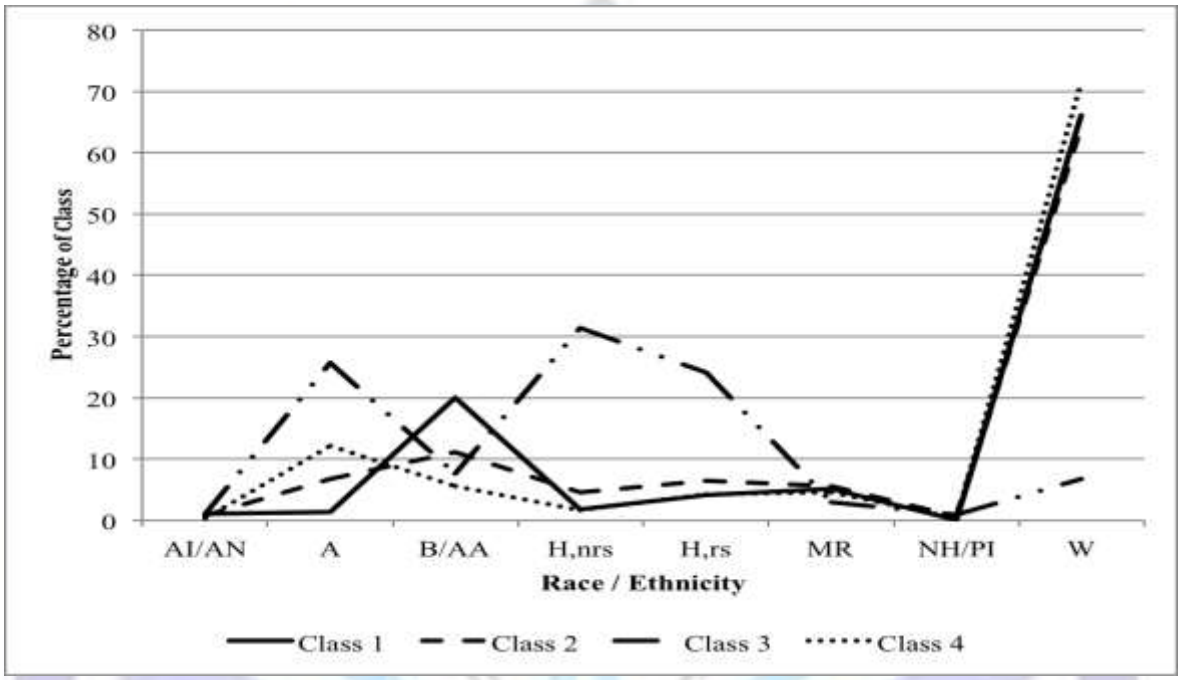

Figure 1: Racial / ethnicity composition of each identified latent class

AI/AN = American Indian / Alaska native; A = Asian, non-Hispanic, B/AA = Black or African American, non-Hispanic; H, nrs = Hispanic, no race specified; H,rs = Hispanic, race specified; MR = Multiracial, non-Hispanic; NH/PI = Native Hawaiian / Pacific Islander; W = White, non-Hispanic

Table 6. Class-specific race / ethnicity compositions

Race / Ethnicity	Class 1 (%)	Class 2 (%)	Class 3 (%)	Class 4 (%)
American Indian / Alaska native	1.1	0.8	1.0	0.3
Asian, non-Hispanic	1.4	6.8	25.6	12.1
Black or African American, non-Hispanic	20.1	11.1	7.6	5.6
Hispanic, no race specified	1.8	4.5	31.4	1.6
Hispanic, race specified	4.2	6.4	24.0	4.2
More than one race, non-Hispanic	5.2	5.6	2.9	4.5
Native Hawaiian / Pacific islander	0.1	0.6	0.8	0.3
White, non-Hispanic	66.2	64.4	6.7	71.5

DISCUSSION

The purpose of this study was to examine ELS:2002 data and determine whether there were underlying subgroups of students who shared similar demographic characteristics. Mixture modeling can be applied to data that are hypothesized to have been collected from multiple populations. We discovered four underlying subgroups of students who share similar

experiences and characteristics. In the modeling process, we used a series of variables as indicators of class membership and then examined the relationship between class membership and the race/ethnicity of students in the data. Interpretation of effect sizes and relationship strength should be considered within the context of the study, and our observed effect size as measured by Cramer's V is .33, which is a moderately strong association. Thus, the findings of this study support the notion that a student's race / ethnicity is correlated with the latent class of which she/he is most likely a member. Given this information, along with the focus of the study, we must consider the racial / ethnic composition within each of the latent classes, paying special attention to Asian Americans.

If the model minority stereotype of Asian Americans were true, then one might expect Asian American students to be members of the same latent class as their White counterparts. This pattern of student membership was not only absent in the findings of this study, but we also found that class membership among Asian American students was the most varied of the more prevalent minority groups represented in the data. That is, class 1 consisted of only 1.4% Asian Americans, and class 3 consisted of 25.6% Asian American students. Class 3 had a higher proportion of students identified as Asian American, African American, and Hispanic. In fact, Asian Americans represented more students in the class than Hispanics, whose race was specified. Furthermore, less than 7% of the members of class 3 were White. These findings call the model minority stereotype into question.

The discussion to this point has centered on the percentage of Asians within latent class. Conditioning on Asian American students, the percentage of students in class 1 through 4 were respectively 3.9%, 32.3%, 32.6%, and 31.3%. This indicates that Asians were evenly distributed across classes 2, 3, and 4, each of which had noticeably different characteristics. This again problematizes the model minority stereotype of Asian American students. That is, we found that Asians were equally likely to be members of classes that were characterized by parents with varying levels of education, differential rates of working while in high school, representing different regions of the U.S., parents with different levels of educational aspirations, different SES composites, and different standardized test scores.

LIMITATIONS, IMPLICATIONS, AND FUTURE RESEARCH

One potential limitation of this study was the choice of indicators of latent class membership. The inclusion of different class indicators may produce different latent class compositions. We chose latent class indicators of substantive interest and that were related to the model minority stereotype. Second, we used mixture modeling in an exploratory fashion in this study, which allowed us to identify the four latent classes discussed here. Although mixture modeling offers significant benefits over distance-based cluster procedures, it still may not be the best method for classification across all research scenarios. For the purposes of this investigation, mixture modeling was determined to be the most appropriate method.

Future Directions

The purpose of this study was to empirically examine the model minority stereotype of Asian Americans. In order to look for racial differences between classes, we did not differentiate between Asian subgroups. In future studies, we will explore potential latent classes that exist within the Asian American student subsample. A unique feature of the ELS:2002 dataset is the disaggregation of the Asian subsample by country or region (e.g., Chinese, Japanese, Korean, etc.). Future studies will examine these Asian subgroups' distribution across potential latent class.

This study has produced important foundational work for subsequent FMM model minority stereotype research. The present study contains implications for future model minority stereotype scholarship. We believe that, with regard to what we are referring to as the "sociology" of the model minority stereotype, methodological considerations must be made when conducting research on the Asian American population.

"Sociology" of the Model Minority Stereotype

We contend that future research needs to move beyond arguments about the "sociology of the model minority stereotype" or the "concept" of the model minority and delve into more applied research, using data on Asian Americans. The ELS:2002 is a ripe dataset to use, and, unfortunately, it has been underutilized. To our knowledge, with the exception of a dissertation (Hartlep, 2012a), the present study is the only one that has used restricted-use data to explicitly dispel the model minority stereotype.

Moreover, literature on the model minority stereotype documents the fact that there are opportunities for new methodologies to be developed and employed when countering and critiquing the model minority stereotype. As mentioned before, the majority of scholarship has relied on arguments such as hybridity, heterogeneity, bimodal distribution, diversity, and inter- and intra-group differences. While these methodological and statistical approaches to dispelling the model minority stereotype are invaluable—especially since the stereotype homogenizes the realities of Asian Americans—new approaches need to be developed. This exploratory study of the ELS:2002 was our way of using mixture modeling as a way to problematize the model minority stereotype.

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