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SOCIAL STRATIFICATION IN MEXICO: DISENTANGLING COLOR, ETHNICITY, AND CLASS

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In a recent ASR article (2010), Andrés Villarreal (hereafter AV) presents evidence of dramatic skin color stratification and indigenous disadvantage in contemporary Mexico based on the 2006 MIT Mexico Panel Study. AV uses regression models to predict educational attainment, occupational status and household income for Mexicans by ethnicity and according to three skin color categories. He finds that the darkest skin tone individuals have the lowest socioeconomic status followed by those with intermediate skin colors on all these outcomes, even after controlling for individual characteristics. AV does us an important service by drawing our attention to the role of skin color in Mexican social stratification, which has generally been denied or overlooked. However, we argue that AV overstates the effects of skin color on class in Mexican society because he ignores class origins, he uses a highly subjective skin color indicator that is itself affected by class, and he misidentifies indigenous ethnicity.

In this comment, we find general support for AV's conclusions about the effect of skin color in the Mexican stratification system, especially in educational attainment, but class origins are a more dominant factor in Mexican social stratification and they explain some of the apparent skin color differences that AV found. By controlling for class origins and by using more accurate measures of color and indigenous ethnicity, we discover that the magnitude of indigenous and skin color disadvantage is smaller than AV finds in the case of educational attainment. Class origins and education¹ largely explain color differences in occupational status while color and indigenous identity have virtually no effect. We have sought to replicate AV's analysis on most variables since we believe it is excellent methodologically, except that we use innovative and new data that better capture color, indigenous ethnicity, and class origins. We show that the rest of our coefficients are very similar to those in a model that replicates the same variables used in one of AV's models, suggesting that our data, variables and statistical methods closely match his. We realize that the shortcomings we find for AV are mostly due to his use of a data set that was not designed for this end.

Class, Ethnicity and Color in Mexico

For decades, the dominant view of Mexican society, powerfully expressed by Gonzalez Casanova (1965), was that class is the most important social cleavage, ethnicity was important but transitory and race (or color) was largely insignificant. More recently,

¹In turn, education can be considered, at least partially, a function of class background since parental occupation is a strong predictor of educational attainment as model 1 in table 2 shows.

intergenerational mobility studies have also demonstrated that the Mexican class system is particularly rigid and family class origins are particularly important for predicting socioeconomic outcomes (Behrman, Gaviria and Szekely 2001, Zenteno and Solís 2006, Torche and Spilerman 2009). For example, Behrman, Gaviria and Szekely (2001) find that children of white collar workers are 3.5 times as likely as the children of blue-collar workers to enter white collar jobs in Mexico, which was higher than any of the other Latin American countries they studied and far higher than in the United States. However, these studies have mostly ignored race and ethnicity. As AV notes, the idea that race is unimportant in Mexico's social stratification system has long been held, consistently with a post-revolutionary and elite-led ideology of non-racialism and *mestizaje* (Knight 1990, Villareal 2010).

In contrast, another body of scholarship has studied indigenous disadvantage in Mexico but it has generally not been tied to more general stratification or mobility studies (Knight 1990). The traditional view acknowledged discrimination against the indigenous but expected that they would integrate into mainstream Mexican society, mostly as the traditional 'regions of refuge' were broken down (Náhmáad Sitton 2008, Knight 1990). However, although the number of culturally-isolated indigenous communities has decreased over time, indigenous ethnicity has persisted among urban migrants and has recently had a resurgence in urban areas, perhaps because of new indigenous social movements (de la Peña 1995, Martínez Casas 2004, Yashar 2006). According to the 2000 Census, 21% of self-identified indigenous people do not speak an indigenous language and 36.6% of indigenous people live in urban or semi-urban locations (INEGI 2004).

For those who do assimilate and become mestizos or for the mestizo descendants of indigenous people throughout Mexican history (Knight 1999), dark skin does not go away and, as AV argues well, this racial or phenotypic marker may continue to shape SES, despite cultural or ethnic assimilation. However, we believe that AV exaggerates the effect of skin color by omitting class origins and misidentifying indigenous ethnicity. Based on this literature, we believe that it is essential to model the combined effects of class, ethnicity and color in the Mexican social stratification system.

Variables, Data and Methods

For our analysis of SES, our primary source of data is the Mexico survey of the 2010 America's Barometer by the Latin American Public Opinion Project (LAPOP) which, like AV's MIT survey, is nationally representative. The LAPOP sample is smaller at 1562 compared to 2395 for the MIT survey. The LAPOP survey deals specifically with social and race variables by introducing an ethnicity module designed in cooperation with the Project on Ethnicity and Race in Latin America (PERLA) at Princeton University that includes a color palette-based skin color variable and indigenous language and self-identity variables.

Our color variable, hereafter referred to as the PERLA skin color variable, is based on interviewer ratings of skin tones using a palette that depicts 9 realistic skin tones ranging from very light (1) to very dark (11), although the Mexican sample included very few persons with a color rating over 7. Interviewers were given precise instructions to match, as

best they could, the colors on the palette to the color of respondents' faces, without actually showing them the color palette. We consider the PERLA skin color variable a relatively objective color indicator, especially when compared to the MIT skin color variable that AV used, which relies solely on interviewer ratings of respondent's skin color according to their own conceptions of three commonly verbalized colors (white or *güero*, light *moreno*, dark *moreno*). We hereafter designate this categorization as the MIT-style color variable.

Prior to our analysis of SES, we first examine the extent to which the MIT-style and the PERLA skin color variables are correlated and whether socioeconomic status affected how interviewers categorized the skin color of respondents. We are fortunate to have the 2009 *Termómetro Capitalino*, a random sample data set of Mexico City that focuses on political issues but also includes both the MIT-style and PERLA skin color variables.ⁱⁱ Specifically, we use multinomial regression analysis to regress the MIT color variable on the PERLA 11-point skin color variable, sex, age, household income and indigenous ethnicity. Although AV considered the MIT color variable to be objective because there was "considerable agreement" about respondent color over the three waves of the MIT survey, we are concerned that this could be due to a widely-held calculus of skin color that incorporates class. Such a "money whitening" effect has been found for several Latin American countries, including Mexico currently and in the past (Telles and Flores forthcoming, Cope 1994).ⁱⁱⁱ

In the second part of our analysis, we use multilevel ordered logistic regression to predict the effect of color and indigenous ethnicity on years of education and occupational status, just as AV did, and then we add parental occupation. For the dependent variable of education, we transformed our continuous educational variable into the same categorical variables used by AV. For occupation, we ranked ten occupational groups in a similar way as AV, also based on the International Socio-Economic Index of Occupational Status (ISEI). However, the occupational groups in our data were distinct from AV's so that exact replication was not possible. As in AV's data, the ranking of specific occupations in each group often overlapped with those in other groups and thus we had to make decisions on what we believed were the average ratings for each group. Although one might be concerned that this could lead to the different results from AV's, we found that the despite ranking the occupations in many possible ways and running the same regressions, our substantive results remained robust in all models. That is, skin color was never significant once we controlled for education and parental occupation. Finally, we do not examine affluence and poverty (household income in the highest or lowest quintiles) as AV did, mostly because LAPOP does not provide adequate income data.^{iv}

ⁱⁱAlong with a survey done in Colombia at the same time, the 2009 *Termómetro Capitalino* was the first survey to incorporate PERLA's color palette at the same time that they used the categorization that was used by the MIT survey.

ⁱⁱⁱInterestingly, AV found that interviewers were more likely to classify females in lighter skin color categories (Table 3 in AV), although, in the absence of an objective skin color variable we don't know if this was because of a gender whitening effect or due to sample bias.

^{iv}In addition, we believe that AV's income variable is weaker as an indicator of social status than education and occupation because it is based on household income (divided by number of household members), it has a relatively large number of missing cases, and missing cases are greater among the least educated, darker persons and the indigenous.

For this part of our analysis, we collapse the PERLA 11-color variable into three color categories in an effort to replicate AV's three color variable, as much as possible. We were able to closely match AV's distribution, in which in which light-complexioned persons (1–2 on the color palette) are 13.5 percent of the sample compared to 18.8 percent in AV, light brown persons (3–4) are 49.5 percent compared to 50.5 percent in AV and dark brown persons (5+) are 37.0 percent compared to 30.7 percent in AV. We also tried using a continuous variable based on each color rating but that transformation did not make a substantive difference to our findings.

In addition to skin color, our other primary independent variables are indigenous ethnicity and parental occupation. We identify indigenous people using language, self-identity, and ancestry variables, which is similar to the definition used by the 2000 Mexican Census.^v In contrast, AV relied on interviewer decisions to classify indigenous Mexicans based on “factors such as respondents’ language ability, the use of traditional attire, and characteristics of the communities in which they lived.” By relying on such stereotypical and observable cultural traits, AV has thus captured only the most disadvantaged and traditional segment of the indigenous population, which could have inflated his estimates of color disadvantage. Moreover, it is possible that skin color itself may have been used in the calculus of who was indigenous, and vice-versa, since both variables depended on interviewer impressions, thus potentially muddling the distinction between skin color and ethnicity.

We model class origins based on parental occupation. Parental occupation is based on the occupation of the respondents’ head of household when they were 14 years old. Although studies of stratification and mobility in Mexico have clearly shown the importance of parental class origins, AV has neglected to include these items in his analysis of socioeconomic outcomes. Also, by neglecting a control for parental status, AV cannot make a strong case for ongoing discrimination on the basis of color or indigeneity because he cannot rule out class disadvantages inherited from the previous generation. We present parental occupation with a single variable with values from the ISEI, which we (and AV) used to construct respondent occupational status as the dependent variable. The survey provides 15 occupational categories but we collapse these into ten hierarchically distinct occupational groups.

Analysis

Table 1 shows our results modeling the relation between the relatively subjective MIT skin color categorization used by AV and the PERLA color variable, which we use, as well as sex, age, income and indigenous ethnicity. We find that both systems of color classification are closely related, at a high level of statistical significance. A negative coefficient for PERLA skin color for MIT categorization as white (compared to light brown) indicates that lighter skin persons are more likely to be considered white rather than light brown and a

^vSpecifically, our indigeneity variable is based on self-identity and first language spoken as well as mother’s ethnicity and parent’s language which is similar to that used by the Mexican Census, which uses self-identity and ability to speak an indigenous language and includes persons living in families where the head or spouse of head is indigenous (INEGI 2004).

positive coefficient for MIT categorization as dark brown shows that darker persons are more likely to be rated dark brown rather than light brown.

However, Table 1 also reveals that high income persons are more likely to be classified as white, regardless of their skin color. By transforming the regression coefficients into percentages, we find that high-income persons of the same color are nearly twice (1.94) as likely as low-income persons to be classified as white, revealing a “money whitening” effect in how the Mexican interviewers rated color in the MIT-like survey color item. By incorporating income in his color variable, AV could thus be overestimating the effect of color on SES outcomes.

Table 2 presents the results from three models predicting educational attainment (models 1–3) and another three models predicting occupational status (models 4–6). The respective education and occupation models use the same sets of independent variables for each of the two dependent variables. Using our improved skin color and indigenous ethnicity variables, models 1 and 4 are the basic models for the effect of skin color, sex, age, education, region and urban/rural status. Models 2 and 5 add the indigenous ethnicity variable to the previous two models and finally, models 3 and 6 add the parental occupation variable to models 2 and 5.

Model 1 replicates AV’s model 3 in Table 4 in which the dependent and independent variables, except, of course, skin color and we do not include a mixed urban/rural variable as AV did. The age and female variables in Model 1 are remarkably similar to those in AV’s model, suggesting that our data, methods and variables closely match his.^{vi} The regional variables are generally insignificant and the rural variable is probably different because of the absence of a mixed rural/urban variable in our model.

Model 1 of Table 1 reveals that that there is a strong association between respondent’s skin color and their educational attainment, at similar levels as AV found. Thus, despite a money whitening effect, both the MIT and the PERLA color variables have similar effects on education, once basic demographic variables are taken into account. However, Model 2 shows that the indigenous ethnicity variable we employ had virtually no effect on education while the MIT style indigeneity variable that AV used was negatively related to education at a highly significant level. Finally, the addition of a parental occupation variable in Model 3 showed that class origins are very strongly related to educational attainment and that its inclusion diminishes the effects of color. Despite that we find color remains a critical stratifying variable in predicting educational attainment, especially for those of working class origins. By converting the regression coefficients into predicted probabilities and combining the three highest-ranked occupational group into a professional group and seven

^{vi}While our color variables also appear to be somewhat close to AV’s, we do not consider this to be a validation of the MIT color system. On the contrary, since color has a negative linear relation with educational attainment in Mexico, the smaller the white category used, the darker and more disadvantaged the ‘moreno’ categories will be. In this case, since AV’s ‘white’ group is almost 40% bigger, the educational deficits for his ‘moreno’ categories should have been significantly smaller than ours. However, since his color categories are intertwined with class, this trend is somewhat reversed because wealthier light browns probably made it into his white category (due to money whitening effect) and, hence, depressed the socio-economic indicators of the light and dark brown categories. Furthermore, the strength of our color variables declined once we controlled for class origins suggesting that AV’s model would have moved in a similar direction had he taken them into account.

urban and rural manual occupations together, we find (in a separate analysis) that 50 percent of dark brown Mexicans of professional origins attend college compared to 68 percent of light-complexioned Mexicans of the same origin. More starkly, only 13 percent of dark brown persons with working class parents attend college compared to 24 percent of white Mexicans of the same class origin.

However, unlike the strong negative relation between color and indigeneity with occupation that AV found, we find only weak, if any, evidence of such a relation. Models 4–6 of Table 2 show that the coefficients for light and dark brown color as well as for indigenous ethnicity were never statistically significant, although they were consistently negative. On the other hand, education has a strong positive effect on occupational status as does parental occupation, as expected. The regression coefficient for parental occupation of .132 indicates that the odds of any upward occupational mobility for the average Mexican along the 10-point occupational scale is 14 percent ($\exp(.132)$) while color has virtually no effect (0 percent) on occupational mobility.

Conclusions

Our primary aim has been to reexamine AV's findings regarding the effect of skin color on educational and occupational attainment with better measures of skin color, while also controlling for improved measures of indigenous ethnicity and by taking class origins into account. We discovered that AV's color variable, which relied on interviewer impressions, was overly subjective and endogenous to the SES outcomes he sought to explain. Specifically, our findings show that the color variable used by AV was subject to a "money whitening" effect, so instead we used a skin color measure based on a color palette to provide a more objective measure.

Based on our findings, we generally agree with AV that external categorizations of color are important in Mexico. We find that darker skin color is related to lower educational attainment after controlling for class origins, ethnicity, and using more objective skin color measures. However, unlike AV, we do not find a double penalty for a dark skin color in Mexico. While AV also finds that dark skin Mexicans get lower occupational returns for their education, we find that occupational returns are not affected by our more objective skin color variable. In other words, to the degree that socioeconomic stratification by color occurs in Mexico, our evidence suggests that this occurs during education and prior to entering the labor market.

We also found fault with AV's analysis because it did not control for parental occupation, a proxy for class origins, despite the predominance of literature emphasizing its effects on SES. Our findings show that parental occupation plays a dominant role in producing both educational and occupational attainment, as the traditional literature claims. Nevertheless, skin color is also important but its effect declines when we consider parental occupation. We conclude that class origin and skin color are central social factors that work in conjunction with each other to produce and reproduce social inequality in Mexican society, although the former is important in both education and the labor market while the latter is mostly important in education.

Finally, although indigenous ethnicity is the one race and ethnicity dimension that is commonly considered a disadvantage in Mexico, we discover that indigenous ethnicity does not have an independent effect on SES, which AV found by using a stereotypical indicator of indigenous ethnicity that considered externally observable traits. Our analysis instead uses a modern definition of indigenous ethnicity, which is based on self-identity or self-reported language, as the two most recent Mexican Censuses have utilized. Our findings suggest that indigenous disadvantage derives largely from their skin color, class origin and rural residence, although indigenous people may suffer a further penalty if they fit the indigenous stereotype based on dress, accent and residence in indigenous communities.

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Determinants of Interviewer Classification as White (blanco/güero) or Dark Brown (moreno oscuro) compared to Light Brown (moreno claro=reference), Mexico City in 2009

Table 1

Predictor	Multinomial Logistic Regression			
	White		Dark Brown	
	Means	Coefficient (SE)	Coefficient (SE)	
Skin Color	4.98	-1.152*** (0.209)	1.050*** (0.142)	
Female	.48	-0.029 (0.235)	-0.319 (0.243)	
Age	40.41	-0.000 (0.007)	0.010 (0.007)	
Monthly Household Income				
\$181–300 USD	.32	0.103 (0.390)	0.521 (0.378)	
\$301–600 USD	.38	0.363 (0.356)	0.252 (0.386)	
\$601 USD and more	.14	0.882* (0.390)	-0.606 (0.483)	
Indigenous	.06	-0.972 (0.545)	-0.039 (0.446)	
Constant		3.564 (0.937)	-7.327 (0.953)	
Chi Square (df)		70.90 (14)		
Pseudo-R ²		.290		
Observations	589	587		

Source: 2009 *Termómetro Capitalino*

Robust standard errors reported.

*** p<0.001,
** p<0.01,
* p<0.5

Table 2
Ordered Logistic Regression Models Predicting Educational Attainment (1–3) and Occupational Status (4–6)

VARIABLES	Educational Attainment			Occupational Status		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Skin Color						
Light Brown	–0.468*** (0.129)	–0.450*** (0.128)	–0.354** (0.139)	–0.282 (0.201)	–0.272 (0.201)	–0.291 (0.208)
Dark Brown	–0.931*** (0.148)	–0.886*** (0.146)	–0.708*** (0.159)	–0.406 (0.218)	–0.382 (0.217)	–0.261 (0.221)
Female	–0.459*** (0.082)	–0.461*** (0.082)	–0.431*** (0.087)	0.546** (0.159)	0.556** (0.162)	0.584** (0.172)
Age	–0.064*** (0.003)	–0.063*** (0.003)	–0.057*** (0.003)	0.003 (0.005)	0.003 (0.005)	0.006 (0.005)
Indigenous		–0.361 (0.213)	–0.128 (0.212)		–0.196 (0.199)	–0.133 (0.197)
Education						
Incomplete Primary				0.229 (0.459)	0.215 (0.456)	0.232 (0.477)
Complete primary				0.853 (0.464)	0.838 (0.464)	0.756 (0.479)
Incomplete Secondary				1.143* (0.470)	1.133* (0.471)	1.209* (0.480)
Complete Secondary				1.437** (0.418)	1.420** (0.417)	1.390** (0.433)
Incomplete HS				1.970*** (0.447)	1.932*** (0.451)	1.866*** (0.477)
Complete HS				2.186*** (0.422)	2.160*** (0.422)	2.029*** (0.429)
Some college				3.847*** (0.493)	3.834*** (0.491)	3.595*** (0.532)
Complete college				5.054*** (0.507)	5.046*** (0.504)	4.846*** (0.520)
Region						
Northwest	–0.352 (0.269)	–0.373 (0.267)	–0.420 (0.278)	0.408 (0.365)	0.394 (0.362)	0.419 (0.366)
Northeast	–0.386 (0.247)	–0.432 (0.246)	–0.445 (0.231)	–0.030 (0.282)	–0.069 (0.287)	–0.145 (0.285)
Center	–0.104 (0.187)	–0.105 (0.186)	–0.105 (0.178)	0.232 (0.182)	0.228 (0.181)	0.181 (0.182)
Center-West	–0.642** (0.203)	–0.675** (0.207)	–0.563** (0.192)	–0.016 (0.210)	–0.038 (0.210)	–0.002 (0.215)
Rural	–0.598** (0.171)	–0.586** (0.171)	–0.373* (0.163)	–0.613** (0.215)	–0.609** (0.213)	–0.490* (0.224)
Parental Occupation			0.277*** (0.027)			0.132*** (0.040)
Pseudo R2	0.0813	0.0823	0.1058	0.1173	0.1176	0.1247
N	1,554	1,554	1,460	797	797	765

Source: 2010 America's Barometer, Mexico survey.

Robust standard errors reported and adjusted for sample clustering using Huber-White technique.

* $p<0.05$,
** $p<0.01$,
*** $p<0.001$