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Pigmentocracies: Educational inequality, skin color and census ethnoracial identification in eight Latin American countries

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ABSTRACT

For the first time, most Latin American censuses ask respondents to self-identify by race or ethnicity allowing researchers to examine long-ignored ethnoracial inequalities. However, reliance on census ethnoracial categories could poorly capture the manifestation(s) of race that lead to inequality in the region, because of classificatory ambiguity and within-category racial or color heterogeneity. To overcome this, we modeled the relation of both interviewer-rated skin color and census ethnoracial categories with educational inequality using innovative data from the 2010 America's Barometer from the Latin American Public Opinion Project (LAPOP) and 2010 surveys from the Project on Ethnicity and Race in Latin America (PERLA) for eight Latin American countries (Bolivia, Brazil, Colombia, Dominican Republic, Ecuador, Guatemala, Mexico and Peru). We found that darker skin color was negatively and consistently related to schooling in all countries, with and without extensive controls. Indigenous and black self-identification was also negatively related to schooling, though not always at a statistically significant and robust level like skin color. In contrast, results for self-identified mulattos, mestizos and whites were inconsistent and often counter to the expected racial hierarchy, suggesting that skin color measures often capture racial inequalities that census measures miss.

In 1944, Alejandro Lipschutz, a Chilean anthropologist, coined the term *pigmentocracy* to refer to the ethnic and color-based hierarchies of Latin America. In his text, Lipschutz referred to pigmentocracy sometimes as a hierarchy based on a color continuum and other times as an ethnoracial[1] hierarchy with whites on top, indigenous and black people at the bottom and *mestizos* in the middle,

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[1] For purposes of this paper, we use the term *ethnoracial* to describe designations such as indigenous and black and "race and ethnicity" together as a noun. Race and ethnicity are highly contested sociological concepts but they generally refer to social or folk constructions of perceived similarities and differences regarding cultural background, social belonging, phenotype and political destiny among human populations. Ethnicity is sometimes used to describe cultural differences while race is used to describe phenotypical differences but other distinctions between the

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thus glossing over differences between the two classification systems. Nearly 70 years later, Lipschutz's idea of pigmentocracy has hardly caught on, except perhaps in Brazil, where racial discrimination and inequality have been analyzed extensively and are now widely recognized (Marteleto, 2012; Paixão, Montovanele, & Carvano, 2011; Telles, 2004). In the rest of Latin America today, such hierarchies – except perhaps in the case of indigenous peoples – are often regarded, even among academics, as mere byproducts of class-based stratification. Only in the last few years has there been a growing interest in ethnoracial inequalities (Barbary & Urrea, 2003; Flórez, Medina, & Urrea, 2001; Ñopo, Saavedra, & Torero, 2007; Psacharopoulos & Patrinos 1994; Telles, 2007; Hernández, 2012). However, perhaps due to a nation-building ideology of race mixture (*mestizaje*), stratification on the basis of race, ethnicity, and color is still often denied, or considered a relic of race-based systems from the colonial era, such as slavery or *castas*.

Largely as a result of this perspective, census data collection on race and ethnicity has been inconsistent and uncommon in many Latin American countries. For decades, just a handful of countries in the region collected data on indigenous peoples and only Brazil and Cuba have consistently collected data on afro-descendants, whose ancestors were usually slaves. Nevertheless, in the last few years there has been a general turn toward multiculturalism and the recognition of difference in Latin America (Del Popolo, 2008). International agencies, such as the International Labor Organization, have pressured governments to increase ethnic groups' visibility through official statistics.[2] These new civil society demands have been reflected in the collection of racial identity data in many Latin American countries in the past two census rounds. With the addition of Panama in 2010 and Costa Rica in 2011, most Latin American censuses now collect self-identification data on afro-descendants (e.g., black, mulatto) and indigenous people, following ethnoracial data collection efforts in national censuses around the world (Morning, 2008).

By adding ethnic and racial items in their censuses, Latin American states have made strides in their attempts to be multicultural, as many of their constitutions now mandate, and extend greater recognition to indigenous and afro-descendant people. In addition, activists and analysts have sometimes expected to reveal the long denied ethnoracial inequality found in the region (Telles, 2007). However, census ethnoracial identification is known to be ambiguous in the region and be potentially affected by other variables, including social class. Also, ethnoracial self-identification may not capture the way indigenous or afro-descendant people are perceived or classified by others. Since discrimination may be an important mechanism that leads to ethnoracial inequality in the current generation (Sue, 2013; Telles, 2004; Wade, 1993) and because discrimination depends mostly on classification by others (Telles & Lim, 1998), self-identified race may poorly or incompletely estimate actual racial inequality.

Moreover, the categories that national censuses use are often based on politics, elites' ideologies, and technical considerations about which identity questions and ethnoracial categories work best (Del Popolo, 2008; Ferrández & Kradolfer, 2012; Kertzer & Arel, 2002).[3] This selection process often elides the native categories used by ordinary citizens and the resulting official categorization systems are often idiosyncratic. While countries like Colombia and Ecuador use all-encompassing indigenous and afro-descendant categories, countries like Bolivia, Guatemala, and Peru make ethnic distinctions such as Quechua, Aymara and Kiche, which resemble native categories, and countries like Brazil separate the afro-descendant categories by black and mixed race (see Table 1). Deciding which categories to use is consequential for the number of indigenous and afro-descendants that are counted and for estimates of inequality (Bailey, Loveman, & Muniz, 2013; Martinez Casas, Saldivar Tanaka, Flores, & Sue, 2014; Sulmont & Callirgos, 2014).

While these data now allow researchers to examine long-denied race-based inequalities in the region, this incipient field of study rarely considers the additional effects of skin color, which we argue is an important supplement to ethnoracial identification for understanding inequality. We propose that skin color, as measured by others,[4] is an additional measure of race that may capture racial inequality that the census ethnoracial categories miss, because skin color captures variations within the categories and may better reflect race as seen by others. This is consistent with other studies that have used multiple measures of race to understand social outcomes including inequality (Bailey et al., 2013; Saperstein & Penner, 2010; Telles & Lim, 1998).

In this paper we systematically examine to what extent these newly implemented census categories based on self-identification, along with skin color, are able to capture ethnoracial inequality across several Latin American countries, even after taking class origins and other variables

terms are also made on the basis of the rigidity of social boundaries, the extent to which categories are imposed on others or whether they have a cultural basis (Banton, 2012; Frederickson, 2002; Jenkins, 1998). Some analysts understand race and ethnicity as overlapping (e.g. Cornell and Hartmann, 1998) or as mutually exclusive (e.g. Omi and Winant, 1994) or race as a subcategory of ethnicity (e.g. Wimmer, 2013). However, there is a tendency for research on Latin America to refer to blacks, mulattos, mestizos and whites as racial, as if these distinctions could be reduced to phenotype differences, and refer to the indigenous as ethnic, emphasizing cultural differences, although both indigenous and afro-descendant people have both been racialized, i.e. categorized by their "racial" phenotype and accordingly hierarchized, and described in cultural terms (Wade, 1998).

[2] The International Labor Organization's Convention 169 recognizes indigenous self-identification in official statistics as a fundamental right.

[3] See Ferrández and Kradolfer's (2012) edited volume for their comparative introduction and for other chapters on how this debate takes place throughout Latin America, including most of the countries analyzed in this article.

[4] Note that actual skin color, or more specifically the interviewer-rated skin color based on a color chart as we use in this paper, are not the same as the self-reported color/race categories found in the Brazilian Census (*branco, pardo, preto* or white, brown black) or with the self-reported color categories used in common parlance in Brazil (Telles, 2004) or in Mexico (Villarreal, 2010). (See Guimarães, 2012 for more on this important distinction).

Table 1
Comparison between Ethnoracial Questions and Response Categories from National Census and 2010 America's Barometer and 2010 PERLA.

	National Census		2010 America's Barometer and PERLA	
Bolivia (2001)	Do you consider that you belong to one of the following native or indigenous peoples?	1. Quechua 2. Aymará 3. Guaraní 4. Chiquitano 5. Mojeño 6. Other native 7. None	AB 2010. Do you consider that you belong to one of the following native or indigenous peoples?	1. Quechua 2. Aymará 3. Guaraní 4. Chiquitano 5. Mojeño 6. Other native 7. None
Brazil (2006)	Your color or race is. . .?	1. Branco 2. Preto 3. Pardo 4. Amarelo 5. Indigenous	AB 2010 and PERLA 2010. Do you consider yourself?	1. Branco 2. Preto 3. Pardo 4. Amarelo 5. Indigenous
Colombia (2005)	According to your culture, 'pueblo', or physical features, you are or you recognize yourself as:	1. Indigenous 2. Rom 3. Raizal 4. Palenquero 5. Black/Mulatto/Afro-colombian 6. None	PERLA 2010. According to your culture, 'pueblo', or physical features, you are or you recognize yourself as:	1. Indigenous 2. Rom 3. Raizal 4. Palenquero 5. Black/Mulatto/Afro-colombian 6. None
Dominican Republic	N/A	N/A	AB 2010. Do you consider yourself?	1. White 2. Indio 3. Black 4. Mulatto 5. Other
Ecuador (2001)	How do you consider yourself?	1. Indigenous 2. Black 3. Mestizo 4. Mulato 5. White 6. Other	AB 2010. Do you consider yourself?	1. Indigenous 2. Black 3. Mestizo 4. Mulatto 5. White 6. Other
Guatemala (2002)	What ethnic group do you belong to?	1. 22 Indigenous groups 2. Garifuna 3. Ladino 4. None 5. Other	AB 2010. What ethnic group do you belong to?	1. 22 Indigenous groups 2. Garifuna 3. Ladino 4. None 5. Other
Mexico (2000)	[NAME] is nahuatl, mayan, zapotec, mixtec or from another indigenous group?	1. Yes 2. No	PERLA 2010. According to your ancestors and your customs, do you consider yourself nahuatl, mayan, zapotec or another indigenous group?	1. Yes 2. No
Peru (2006)[a]	According to your ancestors and your customs, do you consider yourself?	1. Quechua 2. Aymará 3. Amazonía 4. Negro/mulato/zambo 5. White 6. Mestizo 7. Other	PERLA. According to your ancestors and your customs, do you consider yourself?	1. Quechua 2. Aymará 3. Amazonía 4. Negro/mulato/zambo 5. White 6. Mestizo 7. Other

[a] Data come from the National Continuous Survey conducted in 2006 by the National Institute of Statistics of Peru.

into account. Using the 2010 America's Barometer of the Latin American Public Opinion Project (LAPOP) and 2010 data from the Project on Ethnicity and Race in Latin America (PERLA), we conduct this analysis for eight of Latin America's largest countries: Bolivia, Brazil, Colombia, Dominican Republic, Ecuador, Guatemala, Mexico and Peru. Specifically, we investigate the extent to which census skin color and ethnoracial identification are related to educational attainment, independently of other characteristics including class origin, which is often used to understand ethnoracial inequalities in the region.

This study is innovative, firstly, because we use questions and categories for ethnoracial identity similar to those developed by the respective national census institutes; we examine the simultaneous influence of skin color and ethnoracial identification while adjusting for class origins and a series of other variables that are believed to affect educational inequality; and our analyses includes fully eight Latin American countries, representing eight of the region's 12 largest countries and more than three-quarters of its population. The systematic comparison of these societies, whose histories and social conditions differ greatly, increases our understanding of the multiple ways in which race and ethnicity operate to produce and reproduce contemporary inequalities.

1. Skin color

Despite Lipschutz's (1944) description of Latin America as a "pigmentocracy," there has been almost no attempt to collect or analyze data on how skin color (or physical features in general) affects stratification in the region. Analysts of Brazil, Puerto Rico and the United States have found skin color to be the most important criteria for determining race (Brown, Dane, & Durham, 1998; Guimarães, 2012; Landale & Oropesa, 2002). We use skin color to examine inequality because of evidence that Latin Americans, like North Americans, use color to make cognitive judgements of others and employ racial stereotypes especially for persons of darker color (Gil-White, 1999; Gravlee, 2005). Hence, they often treat others according to color or phenotype, ranked by a societally understood – although often unnamed – color hierarchy with dark persons near the bottom (Maddox, 2004; Telles, 2004). Although census ethnoracial identification in the region may capture some skin color variation, ethnoracial identity is known to be ambiguous, flexible and variant across contexts and thus, we believe, should be supplemented with a directly phenotypic variable with more gradations, like perceived skin color to more fully account for ethnoracial inequality.

An actual skin color measure may capture a color hierarchy among persons in the same ethnoracial category, most notably the capacious *mestizo* category, which encompasses the majority of the population in several countries. In countries like Mexico, Colombia or Ecuador, mixed-race identity has become normative because of early 20th century elite-led national ideologies of *mestizaje* that sought to homogenize the population as *mestizo* and proclaim them the nation's essence (Knight, 1990; Stutzman, 1981; Wade, 1993). A similar argument can be made about the *pardo* category in the Brazilian census (Telles, 2004). Hence, many in these countries identify uniformly as *mestizo* or *pardo* regardless of their appearance, thus masking a wide range of distinct phenotypes or colors.

Moreover, there may be reverse causal effects between inequality and ethnoracial self-identification as Latin American and U.S. findings show (Saperstein & Penner, 2010; Telles & Flores, 2013). In other words, class sometimes shapes ethnoracial identification as in "money whitening," where upward mobility may provoke reclassification into whiter categories, potentially affecting estimates of ethnoracial inequality.[5] Similarly, persons of the same color and physical appearance might choose to identify in different categories for other reasons including individual experiences of discrimination, family upbringing, or their political and social consciousness (Brunsma & Rockquermore, 2008; Jenkins, 1998; Telles, 2004). Conversely, individuals of different skin colors who identify in the same ethnoracial category might be perceived by others as racially distinct, with possible differential effects on their life chances (Telles & Lim, 1998). In an effort to minimize these social effects and anchor the phenotypical dimension of race, we thus use a measure of actual skin color (rather than self-reported skin color), in which interviewers seek to accurately evaluate skin color using a color chart.

2. The importance of considering class origins

Another feature of this study is its controls for class origins. The dominant tradition of research on socioeconomic inequalities in Latin America has focused on class and class origins while neglecting race or treating racial differences as an epiphenomenon of class (Atria, 2004; Fligueira, 2001; González Casanova, 1965; Portes & Hoffman, 2003). According to various Latin American scholarly writings that derive from Marxist, Weberian, Mertonian and Bourdieuan traditions, stratification and mobility are based mostly on class origins and the class structure (Atria, 2004; Fligueira, 2001). According to González Casanova's (1965) influential sociological text, while class is the fundamental driver of inequality in Mexico, indigenous ethnicity is transitory and race or color are unimportant. Current mobility studies in Latin America continue to ignore the influence of race (Behrman, Gaviria, Székely, Birdsall, & Galiani, 2001; Torche & Spilerman, 2009), whether for conceptual or data availability reasons.

Research on Brazil has repeatedly found that race, as defined in the census, is correlated with SES independent of class origins (Marteleto, 2012; Silva, 1985; Telles & Lim, 1998), Similar research for other Latin American countries is beginning to challenge the notion that race is unimportant. Villarreal (2010) examined the effect of self-reported color (using a popular categorization system) and indigenous ethnicity on social stratification in Mexico but did not examine class background. Responding to Villarreal (2010) examined color, ethnicity, and class

[5] A similar phenomenon could occur as individuals who speak an indigenous language or might be considered indigenous shift their identities toward the less stigmatized *mestizo* or even 'white' as their lot improves.

simultaneously for Mexico and found that, while class origins powerfully shape the life outcomes of present-day Mexicans, skin color has an independent effect, especially in educational attainment.

Thus, in this study, we sought to determine not only if there are significant color differences in SES in contemporary Latin America, but also, by controlling for class origins, to assess whether these race or color gaps originate in the present generation or are inherited from previous generations. We do not suggest that class origins are fully independent of race. Class origins could be largely the historical result of accumulated racial discrimination, including stratification regimes set during the caste system (Fradera, 2010; Morner, 1999), slavery (Andrews, 2004) and forced indigenous labor systems (Psacharopoulos & Patrinos, 1994). Ethnoracial disadvantages are transmitted, along with other causes of stratification, through the reproduction of class inequalities. Following this class-based reasoning, color-based inequalities in contemporary Latin American societies could occur without on-going discrimination in the present. Thus, in our empirical analysis, to which we now turn, we examined whether race effects occur independently of class origins.

3. Blackness, indigeneity, and color

Researchers have noted that Afro-descendants and indigenous people have generally lower socio-economic outcomes than whites or mestizos in Latin America (Marteleto, 2012; Telles, 2004). Nevertheless, a common finding in countries like Brazil is that there are few cultural differences between Afro-descendants and the rest of the population (Telles, 2004). Indeed, some have argued that, with the exception of some small isolated groups, the ethnic boundaries separating blacks from non-blacks in Latin America are not built on perceived cultural differences but on skin color and other physical features (Hooker, 2005).

In contrast, social researchers have noted that color plays a less prominent role in identifying who is indigenous in Latin America (De la Cadena, 2000; Friedlander, 1975). In her classic study of an indigenous village in Mexico, Friedlander writes: "the villagers knew that they did not look very different physically from most non-Indian peasants in the area." Instead, according to Friedlander, the Indigenous/non-Indigenous boundary was based on cultural practices and class. In a similar vein, researchers have commonly disregarded the role of color in explaining indigenous disadvantage and instead they have focused on the geographic isolation and remoteness of many indigenous villages (Telles & Bailey, 2013).

Based on this previous literature, we expect to find large color-based socio-economic inequalities in countries with a significant Afro descendant population such as Brazil, Colombia, and the Dominican Republic. We also expect that skin color will explain a substantial portion of the educational differences presented by Afro-descendants relative to the rest of the population perhaps due to significant color-based discrimination. In contrast, we expect to find substantially smaller color-based socio-economic gaps in societies with a strong indigenous presence like Mexico, Bolivia, Peru, and Guatemala. In addition, we hypothesize that skin color will be a weaker predictor of indigenous inequality since such inequality has primarily been explained in terms of class, cultural practices, and geographic isolation.

4. Data and variables

4.1. Data source

We relied on two sets of nationally representative surveys in the eight countries. The first, the 2010 Americas Barometer, was collected by the Latin American Public Opinion Project (LAPOP) based at Vanderbilt University. These data consist of face-to-face surveys of adults in 18 of the 19 Latin American countries (except Cuba) and usually consist of 1500 cases, although 2500 were collected in Brazil and 3000 in Ecuador. The second set, also based on face-to-face interviews, is from the 2010 Project on Ethnicity and Race in Latin America (PERLA) based at Princeton University, which consists of about 1000 nationally representative cases in Brazil, Colombia and Mexico and 1500 in Peru. We were able to replicate the census ethnoracial identification questions with the AmericasBarometer in Brazil, Bolivia, Ecuador and Guatemala and with the PERLA data in Brazil, Colombia, Mexico and Peru. For most countries, we thus used one or the other survey and in Brazil, we used both data sets. Both surveys include an item on interviewer-rated skin color, a question on ethnoracial identification and another, to capture class origins, on parental occupation when the respondent was 14 or 15. We limited our sample to respondents who were at least age 25 since we expected the large majority to have finished their schooling by then. Our final samples, which include full information on the dependent and independent variables and meet our age restrictions, range from 2220 cases in Brazil and Ecuador to 785 in Mexico.

4.2. Dependent variables

Our first dependent variable was *years of schooling completed*, which ranged from 0 to 20 years and we report in Table 2. Our second dependent variable was completing primary and secondary education, an alternative measurement of schooling (Mare, 1981), which we report in Table 3. We used schooling as our measure of socioeconomic status because it allowed us to rank nearly all respondents in the survey on the same scale across several countries. We did not analyze income, which measures another aspect of SES, because it was available only at the household level in the America's Barometer, and the surveys did not contain household size information, and because it had a considerable non-response rate in both surveys.

4.3. Independent variables

For *ethnoracial identification*, we used an item from either the PERLA survey or the Americas Barometer. Both the PERLA and LAPOP surveys included an ethnoracial identity question similar to that used in the national census of each country, with the exception of Peru and the Dominican Republic. Since we sought to closely replicate

Table 2
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in eight Latin American countries (age 25 and up).

Variables	Means	SD	Model 1			Model 2		
			B	sig	SE	*B*	sig	SE
Bolivia								
Skin Color	5.0	1.47				−0.710	***	(0.077)
Ethno-racial ID (ref = Non-indigenous)								
Quechua	0.36		−1.834	***	(0.202)	−1.531	***	(0.209)
Aymara	0.17		−1.766	***	(0.423)	−1.271	**	(0.434)
Chiquitano	0.03		−0.955	**	(0.315)	−0.664	+	(0.351)
Other Indigenous	0.07		−0.024		(0.470)	0.354		(0.502)
Parental Occupation	33.5	14.16	0.106	***	(0.006)	0.094	***	(0.007)
Observations			2282			2282		
Brazil								
Skin Color	4.6	2.16				−0.503	***	(0.097)
Ethno-racial ID (ref = White)								
Brown	0.45		−0.444	**	(0.178)	−0.010		(0.195)
Black	0.11		−0.939	***	(0.243)	0.196		(0.324)
Indigenous	0.02		−1.172	*	(0.551)	−0.535		(0.558)
Asian	0.03		0.232		(0.426)	0.428		(0.421)
Parental Occupation	31.5	13.18	0.078	***	(0.005)	0.078	***	(0.005)
Observations			2728			2728		
Colombia								
Skin Color	4.5	1.91				−0.389	***	(0.087)
Ethno-racial ID (ref = all others)								
Indigenous	0.07		−0.513		(0.555)	−0.521		(0.567)
Black/mulatto. . .	0.24		−0.786	*	(0.375)	0.068		(0.382)
Parental Occupation	32.0	13.26	0.103	***	(0.012)	0.099	***	(0.012)
Observations			854			854		
Dominican Republic								
Skin Color	5.1	1.82				−0.530	***	(0.115)
Ethno-racial ID (ref = White)								
Indio	0.66		−0.272		(0.478)	0.512		(0.476)
Black	0.10		−0.702		(0.602)	1.112	+	(0.643)
Mulatto	0.11		1.569	*	(0.613)	2.430	***	(0.600)
Parental Occupation	30.6	12.89	0.078	***	(0.011)	0.073	***	(0.011)
Observations			1207			1207		
Ecuador								
Skin Color	4.2	1.44				−0.377	***	(0.077)
Ethno-racial ID (ref = White)								
Mestizo	0.81		0.526	*	(0.262)	0.958	***	(0.277)
Indigenous	0.03		−0.893		(0.608)	−0.241		(0.647)
Black/*Mulato*	0.04		−1.036		(0.651)	0.336		(0.719)
Parental Occupation	32.7	13.72	0.105	***	(0.007)	0.102	***	(0.007)
Observations			2376			2376		
Guatemala								
Skin Color	5.0	1.31				−0.675	***	(0.136)
Ethno-racial ID (ref = non-indigenous)								
Kaqchikel	0.04		−0.678		(0.656)	−0.403		(0.664)
Kiche	0.05		−2.304	***	(0.586)	−2.264	***	(0.612)
Mam	0.05		−2.569	***	(0.629)	−2.243	***	(0.615)
Qeqchi	0.04		−1.134		(1.114)	−0.774		(1.113)
Other indigenous	0.13		−1.849	***	(0.436)	−1.548	***	(0.437)
Parental Occupation	32.2	12.71	0.117	***	(0.011)	0.111	***	(0.011)
Observations			1172			1172		
Mexico								
Skin Color	4.5	1.41				−0.423	**	(0.161)
Ethno-racial ID (ref = non-indigenous)								
Indigenous	0.06		−0.969	*	(0.445)	−0.860	+	(0.453)
Parental Occupation	31.5	12.54	0.101	***	(0.014)	0.097	***	(0.014)
Observations			833			833		
Peru								
Skin Color	4.6	1.38				−0.595	***	(0.128)
Ethno-racial ID (ref = White)								
Quechua	0.18		−1.684	**	(0.496)	−1.085	*	(0.528)
Aymara	0.03		−3.151	**	(0.814)	−2.105	*	(0.903)
Amazonia	0.03		−1.394	*	(0.558)	−0.740		(0.547)
Afro	0.03		−0.696		(0.514)	0.466		(0.610)
Mestizo	0.63		−0.316		(0.380)	0.338		(0.424)
Parental Occupation	33.5	15.19	0.090	***	(0.006)	0.088	***	(0.006)
Observations			1201			1201		

Source: Project on Ethnicity and Race in Latin America 2010 and America's Barometer 2010.
Notes: Robust standard errors in parentheses and adjusted for imputed missing values. All models control for sex, age, community size, and region and for Brazil, PERLA data set. See Table 1 for source of data used in each country. See appendix tables for full regression results.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$ (two-tailed tests).

Table 3
Logit regression predicting educational transitions.

Variables	Elementary			Secondary		
	B	sig	SE	*B*	sig	SE
Bolivia						
Skin Color	−0.242	***	(0.040)	−0.187	***	(0.054)
Ethno-racial ID (ref = Non-indigenous)						
Quechua	−1.018	***	(0.184)	0.112		(0.161)
Aymara	−0.810	***	(0.239)	0.015		(0.404)
Chiquitano	0.341		(0.399)	−0.393	+	(0.238)
Other Indigenous	−0.061		(0.387)	0.105		(0.375)
Parental Occupation	0.065	***	(0.006)	0.029	***	(0.005)
Observations	2282			1413		
Brazil						
Skin Color	−0.152	*	(0.065)	−0.253	*	(0.105)
Ethno-racial ID (ref = White)						
Brown	0.109		(0.129)	−0.098		(0.204)
Black	0.089		(0.223)	−0.015		(0.344)
Indigenous	−0.217		(0.387)	−0.444		(0.525)
Asian	0.469		(0.349)	−0.319		(0.417)
Parental Occupation	0.039	***	(0.005)	0.014	***	(0.005)
Observations	2728			1176		
Colombia						
Skin Color	−0.610	***	(0.167)	−0.306	+	(0.167)
Ethno-racial ID (ref = all others)						
Indigenous	−0.164		(0.332)	0.048		(0.349)
Black/mulatto. . .	0.288		(0.317)	0.168		(0.301)
Parental Occupation	0.075	***	(0.018)	0.037	***	(0.009)
Observations	854			596		
Dominican Republic						
Skin Color	−0.364	***	(0.084)	−0.457	***	(0.138)
Ethno-racial ID (ref = White)						
Indio	0.179		(0.271)	−0.199		(0.400)
Black	0.460		(0.385)	0.419		(0.546)
Mulatto	1.033	**	(0.337)	0.815		(0.509)
Parental Occupation	0.031	***	(0.008)	0.011	*	(0.005)
Observations	1207			523		
Ecuador						
Skin Color	−0.281	***	(0.084)	−0.282	***	(0.060)
Ethno-racial ID (ref = White)						
Mestizo	0.781	***	(0.220)	0.459	**	(0.172)
Indigenous	−0.208		(0.358)	0.102		(0.479)
Black/*Mulato*	0.058		(0.400)	0.455		(0.441)
Parental Occupation	0.046	***	(0.008)	0.032	***	(0.004)
Observations	2376			1507		
Guatemala						
Skin Color	−0.171	+	(0.087)	−0.260	+	(0.134)
Ethno-racial ID (ref = non-indigenous)						
Kaqchikel	−0.332		(0.426)	−1.053	*	(0.456)
Kiche	−1.219	***	(0.351)	0.364		(0.557)
Mam	−1.705	***	(0.361)	0.800		(0.494)
Qeqchi	−0.870		(0.538)	0.415		(0.783)
Other indigenous	−0.917	***	(0.276)	0.363		(0.390)
Parental Occupation	0.065	***	(0.013)	0.027	**	(0.008)
Observations	1172			517		
Mexico						
Skin Color	−0.148		(0.113)	−0.013		(0.222)
Ethno-racial ID (ref = non-indigenous)						
Indigenous	−0.708	**	(0.266)	−0.308		(0.499)
Parental Occupation	0.043	**	(0.014)	0.017		(0.015)
Observations	833			249		
Peru						
Skin Color	−0.300	**	(0.113)	−0.232	*	(0.091)
Ethno-racial ID (ref = White)						
Quechua	−0.354		(0.496)	−0.404		(0.404)
Aymara	−1.169		(0.770)	0.654		(0.801)
Amazonia	−0.191		(0.476)	0.683		(0.904)
Afro	0.593		(0.799)	0.322		(0.499)
Mestizo	0.296		(0.401)	0.462		(0.337)
Parental Occupation	0.064	***	(0.017)	0.052	***	(0.012)
Observations	1201			977		

Source: Project on Ethnicity and Race in Latin America 2010 and America's Barometer 2010.
Notes: Robust standard errors in parentheses and adjusted for imputed missing values. All models control for sex, age, community size, and region and for Brazil, PERLA data set. See Table 1 for source of data used in each country. See appendix tables for full regression results.

* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$ (two-tailed tests).

the national census questions, we chose either the PERLA or the America's Barometer question based on its resemblance to the census. In the case of Brazil, we used both surveys because both had a census-like question. Adhering to the census questions enabled us to model them for each country and evaluate their relative merits vis-à-vis the effects of color and class origins. In our analysis, we used individual dummy variables for the census ethnoracial groups that represent at least three percent (rounded) of the survey sample. Smaller groups were included in the collective "other" category.

The Dominican Republic has not had an ethnoracial census question since 1960. However, we decided to include the Dominican Republic because there has been much academic interest in racial identification but no systematic analysis of racial inequality in that country (Candelario, 2004; Roth, 2012). We used the standard Americas Barometer question on ethnoracial identity, which the Dominican Statistics Institute is studying for possible inclusion in their next census (Republica Dominicana, 2012). Since the Peruvian census has not included a category for afrodescendants and because that population is substantial according to various surveys, we decided to employ the question used by official household surveys, conducted by the Peruvian census, which includes afro-descendant categories. The Peruvian census is considering including such a question for the 2016 round.

We used the dominant ethnoracial group as the reference category, which varied according to the available categories in the census. For half of the countries (Brazil, Dominican Republic, Ecuador and Peru), we used "white" while in Guatemala we used "ladino". In countries where the census used only indigenous categories (Bolivia and Mexico), our reference category was the non-indigenous; in Colombia, where the census used only categories for minority ethnoracial groups, our reference category was the non-indigenous and non-afrodescendant population.

Having a variable denoting skin color as observed by the interviewer using an actual color palette, allowed us to reasonably fix skin tone, arguably the primary physical characteristic associated with race in Latin America (Gravlee, 2005; Guimarães, 2012). Interviewer-rated skin color based on a color scale has been used in several surveys about racial discrimination and racial attitudes in the United States (Gullickson, 2005; Keith & Herring, 1991; Massey & Sánchez, 2010) but not, to our knowledge, in Latin America. Although respondent's socioeconomic status could foreseeably bias interviewer evaluations of skin color, our surveys sought to minimize such effects through the use of a color scale, by evaluating color at first contact between interviewer and respondent and by interviewer training.[6] To minimize distortions in interviewer ratings, both LAPOP and PERLA interviewers were instructed to rate each respondent's facial skin color according to a palette of eleven skin tones (1 = lightest, 11 = darkest), which came from Internet photographs, and not to take into account any other factor when assessing respondents' skin color.[7] Both surveys in all countries used the same palette, produced by a single printing company. The palette was extensively pre-tested in several countries in the region for interviewers' ease of use and to see if it covered the range of skin tones found in the field. Other survey-based studies, seeking to understand classification by others, have also used interviewers' racial categorization (Telles & Lim, 1998) or a racial intensity measure to assess respondents' degree of indigenousness or blackness (Ñopo et al., 2007).

Since the distribution of skin tones is different in each country, reflecting each society's unique history of demographic flows, we standardized our color variable by using z scores. In other words, our new color measure was rescaled to have a mean of zero and a standard deviation of one in the regressions. Therefore a coefficient of 1.5 in our models means that respondents that are one standard deviation darker than their country mean are predicted to have 1.5 fewer years of education than respondents with average skin tones.

To model class origins, we used a *parental occupation* status variable representing the occupation held by the respondents' head of household when they were 14 years old. In both the America's Barometer and PERLA surveys, parental occupation is categorized into 15 occupational groups. To rank these occupations by status, we gave each a value ranging from 16 to 81 according to the International Socio-Economic Index of Occupational Status (ISEI) (Ganzeboom & Treiman, 1996). For example, in this scale, high-level professionals and scientists have a value of 81, retail workers have a mid-range ranking of 45, and domestic workers and farm hands receive the lowest ranking of 16. Parental occupation indexes a wide range of class advantages, including human, cultural and social capital, that are transmitted from the previous to the current generation. While we recognize that occupation is only one way to capture class, this represents an important step in actually subjecting the class versus race argument to empirical analysis[8].

Regarding the other independent variables, *age* was a continuous linear variable from 25 up. *Size of place* consisted of five dummy variables (rural – the omitted category, town/small city, medium city, large city, and metropolitan area). *Female* was a dummy variable and *region* was a set of dummy variables, which varied by country. With Brazil, we used both the America's Barometer and PERLA data and so added a dummy variable that designated which data set cases were drawn from.

4.3.1. Methods

We first examined bivariate differences in years of schooling by ethnoracial identification and skin color.

[6] One concern with relying on interviewers to measure respondents' skin color is that their color classification may have been influenced by factors such as their own sex or class position. Fortunately, our surveys contain such interviewer information. In models not shown, we found that neither the sex nor the educational attainment of interviewers was a significant predictor of their color ratings, which mirrors recent evidence on the lack of interviewer effects when assessing color in Mexico (Villarreal, 2010). Note that Villarreal does not use a color scale but rather interviewer perceptions according to a common color classification system in Mexico.

[7] The actual colors of the palette can be viewed at http://perla.princeton.edu/surveys/perla-color-palette.

[8] Unfortunately, we did not have data on parent's education.

Since our dependent variable, years of education, is right-censored, we used tobit models to examine the determinants of educational attainment in each country, which we show in Table 2. To understand the extent to which census racial identification might be independent of skin color variation, we modeled the effects of color and racial identification variables on years of schooling in two stages. In the first model, we examined the statistical effects of ethnoracial identification without skin color, as race is traditionally operationalized (Column 1 of Table 2) and in the second we add skin color, thus examining ethnoracial identification and skin color together (Column 2). In all models we controlled for parental occupation, sex, age, size of place, and geographical region, which we show in the Appendix. For the regressions in Tables 2 and 3, we used multiple imputation techniques to predict missing values in our key independent variables. We created five samples for each country and predicted missing values based on the conditional density of each variable given other variables. We adjusted the standard errors in our regression models to reflect uncertainty in this process based on Rubin (1987). Next, in Table 3, we examine how ethnoracial identity and skin color are associated with two crucial school transitions: primary and secondary school completion. We model primary and secondary school completion among those that began primary and secondary school, using logit regression and the full model with both ethnoracial identification and skin color. (Unfortunately Ns are too small to model college completion.) Finally, we illustrate the results from Table 2 for our main variables with predicted probabilities (Fig. 3).

5. Findings

5.1. Ethnoracial categories and the national censuses

Table 1 shows the national census question on ethnoracial identity (Column 2) and the question that we used in this analysis (Column 3). The census questions and categories reveal the varied and distinctive ways in which national censuses queried their populations about their ethnoracial status, all based on self-identity. All asked about indigenous populations, either identification in a particular indigenous group such as Kiche or Aymara (Bolivia, Ecuador, Guatemala, Mexico, Peru) or in a collective indigenous category (Brazil, Colombia); most (except for Mexico) asked about the afro-descendant population, sometimes with two categories (Brazil, Ecuador) but others in just one (Bolivia, Colombia, Guatemala and Peru). Only Brazil, Ecuador and Peru included a "white" category and the latter two included a "mestizo" category. Thus, the censuses of these countries represent an array of classification systems.

5.2. Relation between census ethnoracial identification and color

Fig. 1 shows the relation between our two race variables, census ethnoracial identification and skin color, for each of the eight countries. As the graphs show, self-identified whites tended to have the lightest skin color while *negros* were found in the darkest colors. Persons that identified as *mestizo*, *mulato*, and in any of the indigenous categories tended to be of intermediate colors. However, all ethnoracial categories showed substantial overlap by color and tended to span across a wide range of colors. The Colombian, Ecuadorian and Peruvian cases, where all groups are represented, reveal much overlap between indigenous and *mestizos*, although *mulatos* tend to be a bit darker (except perhaps in Colombia).

5.2.1. Descriptive analysis

The three panels of Fig. 2 show the relation between ethnoracial identification or skin color and educational attainment. The vertical brackets on each bar in the histograms represent 95 percent confidence intervals. Panels A1 and A2, depicting the relation between ethnoracial self-identification and education, reveal a mixed pattern of ethnoracial educational inequality across the eight countries. Indigenous peoples tended to have the lowest educational status in all countries where they were counted, although the differences were not always at the 95 percent confidence level. Moreover, blacks tended to have lower levels of education in most countries. However, *mulatos* clearly had higher levels of education than all other ethnoracial categories in the Dominican Republic and in Ecuador, *mestizos* seemed to be better off educationally than whites. Telles and Flores (2013) similarly find that self-identified *mestizos* are better off than whites in several Latin American countries, when whites and *mestizos* are disaggregated and skin color is controlled.

Thus, ethnoracial status, when measured with census ethnoracial identification, is not consistently in the direction expected; in contrast, we found consistent support, as expected, of a skin color effect, as Panel B of Fig. 2 shows. In each of the eight countries, education was highest for the lightest persons (colors 1–3), lowest for the darkest persons (colors 6+) and intermediate for medium color persons (colors 4–5). We now examine whether these results persist in the multivariate analysis.

5.2.2. Statistical analysis

Table 2 presents our multivariate results for the association of skin color, ethnoracial identification and parental occupation with education, for each of the eight countries. (The full regressions are in the appendix tables.) The unstandardized means and standard deviations for each of these primary variables appear in the first two columns of Table 2. In the remaining columns of Table 2, we report regression coefficients, significance tests and standard errors (in parenthesis) for the three models. We first present a traditional model (Model 1) of the effect of ethnoracial identification, using the census categories, on years of schooling while controlling for parental occupation and other variables often associated with socioeconomic status. Model 2 includes both the ethnoracial identification and the skin color variables to examine their combined effect in predicting years of schooling.

5.2.3. Bolivia

Model 1 shows that Bolivia's three major indigenous groups, which together comprised about 56 percent of the national population, were disadvantaged compared to the

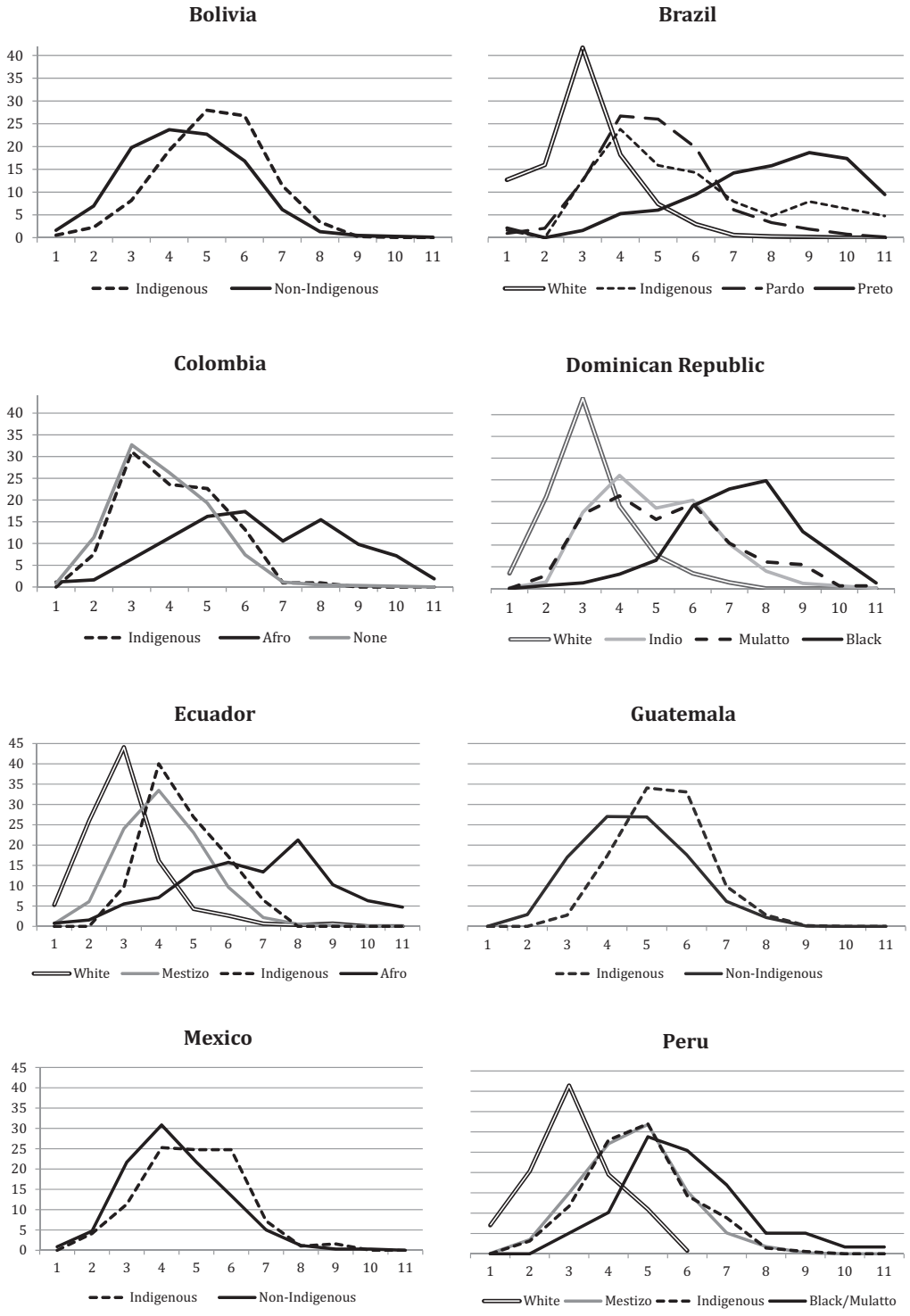

Fig. 1. Relationship between Ethnoracial Identification and Skin Color (1 = Lightest, 11 = Darkest). Lines indicate the percentage of each identity group that was classified in a given skin color. For example, 40% of self-identified whites in Brazil were classified as a number 3 in the color palette scale.

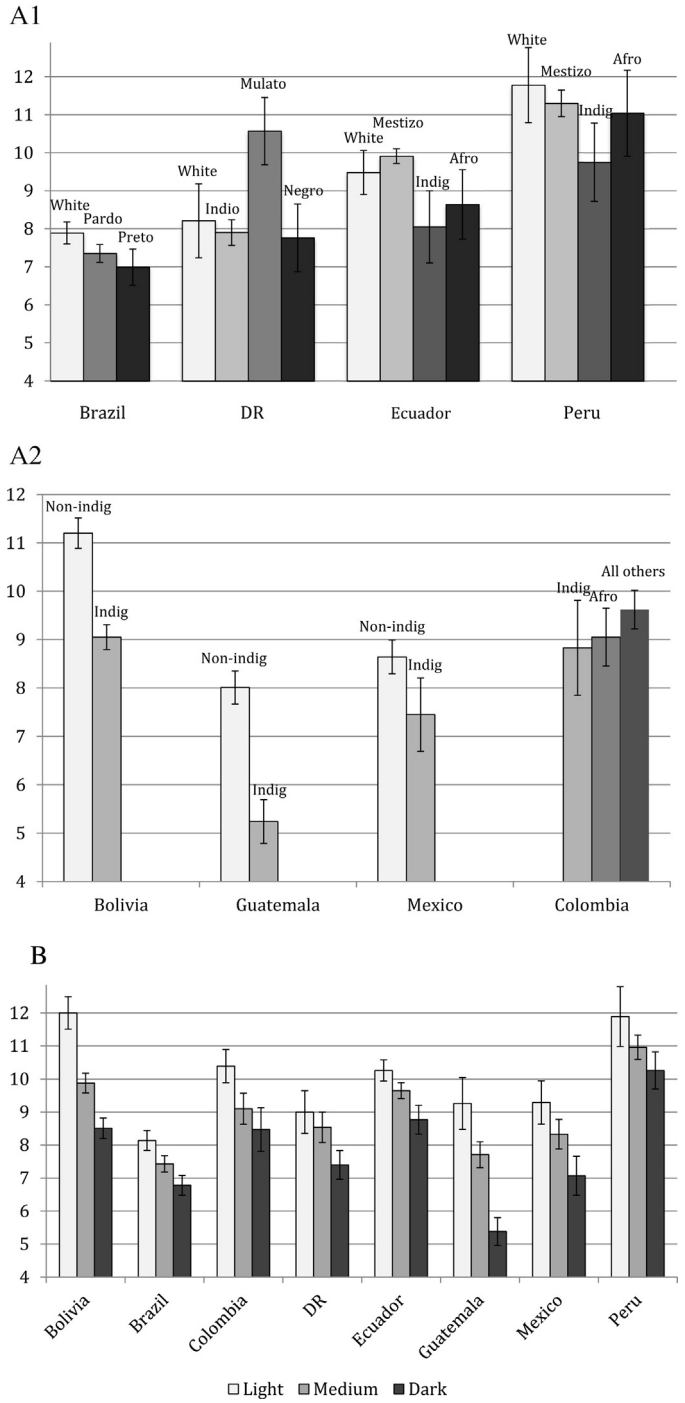

Fig. 2. (A1) Bivariate relationship between ethnoracial self-identification and years of education. Note: 'Indio' is a category only found in the Dominican Republic. 'Afro' refers to blacks and mulattoes in Ecuador and Peru. All indigenous groups were grouped in a panethnic 'indigenous' category. (A2) Bivariate relationship between ethnoracial self-identification and years of education. Note: 'Afro' in Colombia includes 'negro', 'mulato,' 'afro-colombiano,' 'raizal' and 'palenquero.' All indigenous groups were grouped in a panethnic 'indigenous' category. (B) Bivariate relationship between skin color and years of education. *Note*: The continuous skin color palette was grouped into there different categories: 'light' (colors 1–3), 'medium' (4–5), and 'dark' (6–11).

non-indigenous. Quechuas and Aymaras, who themselves were the majority (53 percent), were particularly disadvantaged with nearly two years less of schooling (−1.900 and −1.850) than the non-indigenous. On the other hand, self-identified Chiquitanos had about one less year of formal education (−0.917). Controlling for skin color (Model 2), the extent of disadvantage dropped for all three indigenous groups, though the negative coefficients remained significant for Quechuas and Aymaras (to −1.626 and −1.371) but not for Chiquitanos. In Bolivia, darker skin color consistently reduced educational attainment, more than in any other country.

5.2.4. Brazil

Model 1 shows that persons in the non-white ethnoracial categories of *pardo* and *preto* tended to have lower levels of schooling than whites, at a highly significant level. This confirms the consistent findings showing racial inequality in Brazil, based on the census and other surveys using the same categories. Strikingly, when ethnoracial identification and skin color were both in the model (Model 2), the formerly negative and significant effects of pardo and preto identification disappeared but skin color was statistically significant and negative, revealing that actual skin color washes out the categorical color disadvantages in Brazil. In Models 2, the skin color disadvantage was about one-half (−0.501) of a year of schooling for persons that were one standard deviation darker than the country average on the 11-point color scale. Despite the large literature on Brazilian racial inequality, these findings showing inequality by actual skin color are innovative.

5.2.5. Colombia

Surprisingly, the educational attainment of afro-descendants and indigenous persons was statistically similar to the non-minorities, who were mostly white and *mestizo*, except that Afro-Colombians had a 0.786 year disadvantage. When skin color was included in the model, the negative coefficients for Afro Colombians disappeared. Skin color was highly significant and negative at a level of −0.389. Parental occupation was also particularly important in Colombia, where the coefficient was 0.103 and 0.099.

5.2.6. Dominican Republic

As noted, because the Dominican Republic has not had a census with ethnoracial data since 1960, we used the America's Barometer question, which appears in both the America's Barometer and PERLA surveys and is being considered for the next census (Republica Dominicana, 2012). Regarding ethnoracial identification, Model 1 shows that only *mulatos* were statistically different from whites, with 1.033 more years of schooling than whites. On the other hand, as Models 2 shows, skin color was negatively related to years of schooling at a highly significant level. Model 2 also shows that, when skin color was controlled, the *mulato* advantage increased by about 70 percent to 2.430 more years of schooling. Aside from showing the great significance of skin color in defining educational opportunities in the Dominican Republic, this finding also confirms previous observations that some middle class Dominicans, many of whom are light skinned, are beginning to self-identify as *mulato* rather than the normative *Indio/mestizo* category (Howard, 2001; Simmons, 2009), apparently reflecting class selectivity in choosing *mulato* identities and suggesting reverse causality.

5.2.7. Ecuador

Compared to self-identified whites, ethnoracial identification using the census categories was unrelated to years of schooling in Ecuador, except for identification as *mestizo*, which was associated with more education. Had the reference been *mestizo* instead of white, the indigenous and black/*mulato* categories would probably have been disadvantaged. The coefficient for skin color (−0.377) was positive and significant.

5.2.8. Guatemala

The Guatemalan census identified 22 indigenous groups of which four are presented in Table 2 because they represent 4 percent or more of the sample. Our results show that two of these, Kiche and Mam, were disadvantaged a full 2–3 years and these disadvantages held even with controls for skin color, while the "other indigenous" category, which includes the other 18 indigenous groups, was disadvantaged and also significant. On the other hand, respondents that identified as Kaqchikel and Qeqchi did not appear to be disadvantaged in our sample. In addition, the coefficient for skin color at −0.675, was second only to Bolivia (−0.710).

5.2.9. Mexico

Models 1 and 2 show that Mexicans who identified as indigenous had about one year (−0.969) less schooling than the non-indigenous. Skin color was statistically significant and negative (−0.423), as expected. Our findings for Mexico closely mirror those of Flores and Telles (2012).

5.2.10. Peru

Model 1 reveals that Quechuas and Aymaras, by far the largest indigenous groups in Peru, were highly disadvantaged in relation to whites. Model 2 shows a clear negative relation between skin color and schooling, as in all of the other countries. However, while Model 2 shows that the skin color effect persists, the indigenous disadvantage weakened for all three indigenous groups, suggesting that dark skin color alone accounts for a large proportion of indigenous disadvantage in Peru. We found no disadvantage based on Afro identity, without and especially with skin color controls.

6. Relative effects of skin color, census ethnoracial identification and parental occupation

6.1. Skin color

Comparing skin color effects across the eight countries shows that color effects were particularly strong in Bolivia (−0.710) and Guatemala (−0.675), and lowest in Ecuador (−0.377) and Colombia (−0.389). The biggest penalties for dark skin color are thus in the countries with the largest indigenous populations. More importantly, perhaps, skin color effects were clearly negative and highly significant

statistically in all countries; this contrasts with the effects of non-white ethnoracial identification according to the census categories, which were sometimes negative but sometimes neutral or even positive.

6.2. Ethnoracial identification

Census ethnoracial identification had unexpected statistical effects on years of schooling. Indigenous identification was generally negative but statistically significant in only about half the cases where it was used in the analyses. Not surprisingly, however, the Mexican and Ecuadorian cases remind us that inequality depends also on the comparison category. If whites were separated from *mestizos* in those cases, the amount of indigenous disadvantage would have varied substantially. Also, for countries like Bolivia and Guatemala, the amount of disadvantage for particular indigenous groups varied significantly.

The variables regarding identification in afro-descendant categories were usually not significant, not even when blacks were separated from *mulatos* or *pardos*. Based on evidence for Brazil, we often assume that blacks have substantially lower socioeconomic status than whites and *mestizos*, but no other country showed that level of inequality, based on our results using racial self-identification. In fact, persons identifying as *mulato* in the Dominican Republic had clearly higher education than others, apparently not because of the way they were socially classified but probably because of an incipient middle-class tendency to use that category (Howard, 2001).

Finally, we found that the introduction of skin color to the model with census ethnoracial identification did not generally obviate the effect of being indigenous, though it often affected the coefficient for the black categories. This suggests that, unlike being indigenous, skin color is closely correlated with being an afro-descendant, which is largely based on skin color in the first place (Telles & Paschel, 2014).

6.3. Parental occupation

We presented the important results for parental occupation in Table 2, though we did not interpret them for each country since they were consistently positive and highly significant in all eight countries. This is probably not surprising, considering the dominant literature showing class reproduction in Latin America. More surprising is the consistently negative statistical effect of skin color despite controls for class.

Differences across countries are interesting. Parental occupation mattered the most in Guatemala, at 0.111 and 0.117 and it mattered the least in Brazil at 0.078. Thus, a gain of 30 points in parental occupation – roughly the difference between domestic workers and retail workers – means that the children of retail workers tended to finish 3.3 more years of schooling than the children of domestic workers in Guatemala, compared to 2.3 more years of schooling in Brazil.

We depict these results in Fig. 3. The histograms, based on Table 2 regressions, show predictions of the years of schooling for persons of relatively light and dark skin colors, identifying in different census ethnoracial categories and having parents in relatively high or low status occupations, but with average (mean) characteristics on all other variables. We present histograms for each of these categories with 95% confidence intervals. Because of the relation between skin color and ethnoracial identification shown in Fig. 1, we used Model 1 to calculate the skin color probabilities, a model (not shown) that did not include ethnoracial categories to calculate the ethnoracial probabilities and Model 2 to calculate the parental occupation probabilities. The points at which relatively high and low skin color and parental occupational status were calculated is one standard deviation above or below the mean for each country, which accounts for differences in the color distribution by country.

Fig. 3 reveals graphically the wide range in educational attainment across skin colors, ethnoracial category and class origins in Latin America. Light skin color persons consistently had 1–1.5 more years of schooling than dark persons (although barely so in the Mexican case), with a confidence band of about 0.4–0.8 years. Differences by parental occupation were somewhat greater, ranging from about 2.0 (Brazil) to 2.6 (Guatemala) with about half-year confidence intervals. In contrast, educational disadvantages based on ethnoracial identification were markedly less consistent, although they tended to be greater among the indigenous than the afro-descendants. Interestingly, ethnoracial identification of any kind did not make a difference at high levels of statistical confidence in Colombia, the Dominican Republic and Ecuador. In all of the remaining countries, the indigenous were educationally disadvantaged, while afro-descendants were disadvantaged only in Brazil, in comparison to the reference group. However, the case of Ecuador shows that, had the reference group been *mestizo* instead of white, then blacks, *mulatos and* whites would have been educationally disadvantaged.

7. Educational transitions

Our results for finishing primary and secondary education are shown in Table 3. The results generally reflect those in Table 2, except in a few instances. Darker skin color meant lower completion of both primary and secondary education in all countries but Mexico, where results were not statistically significant perhaps because of small sample sizes. Ethnoracial distinctions tended to be consistent with those of Table 2 and parental occupation was positively correlated with primary and secondary completion in all cases, though it was not statistically significant in only one of the sixteen cases.

For most countries, there is considerable consistency between Tables 2 and 3 results. The coefficient for color is not significant in Mexico for both primary and secondary school completion. Neither skin color, indigenous identification nor parental occupation is significant in predicting secondary attainment in Mexico but perhaps that is because the sample size is especially small (247 compared to next smallest sample size – 519 in Guatemala).

For Guatemala, the skin color coefficient is only nearly significant in Table 3 models, whereas it had the second strongest effect in Table 2. Moreover, while primary educational completion is consistent with educational

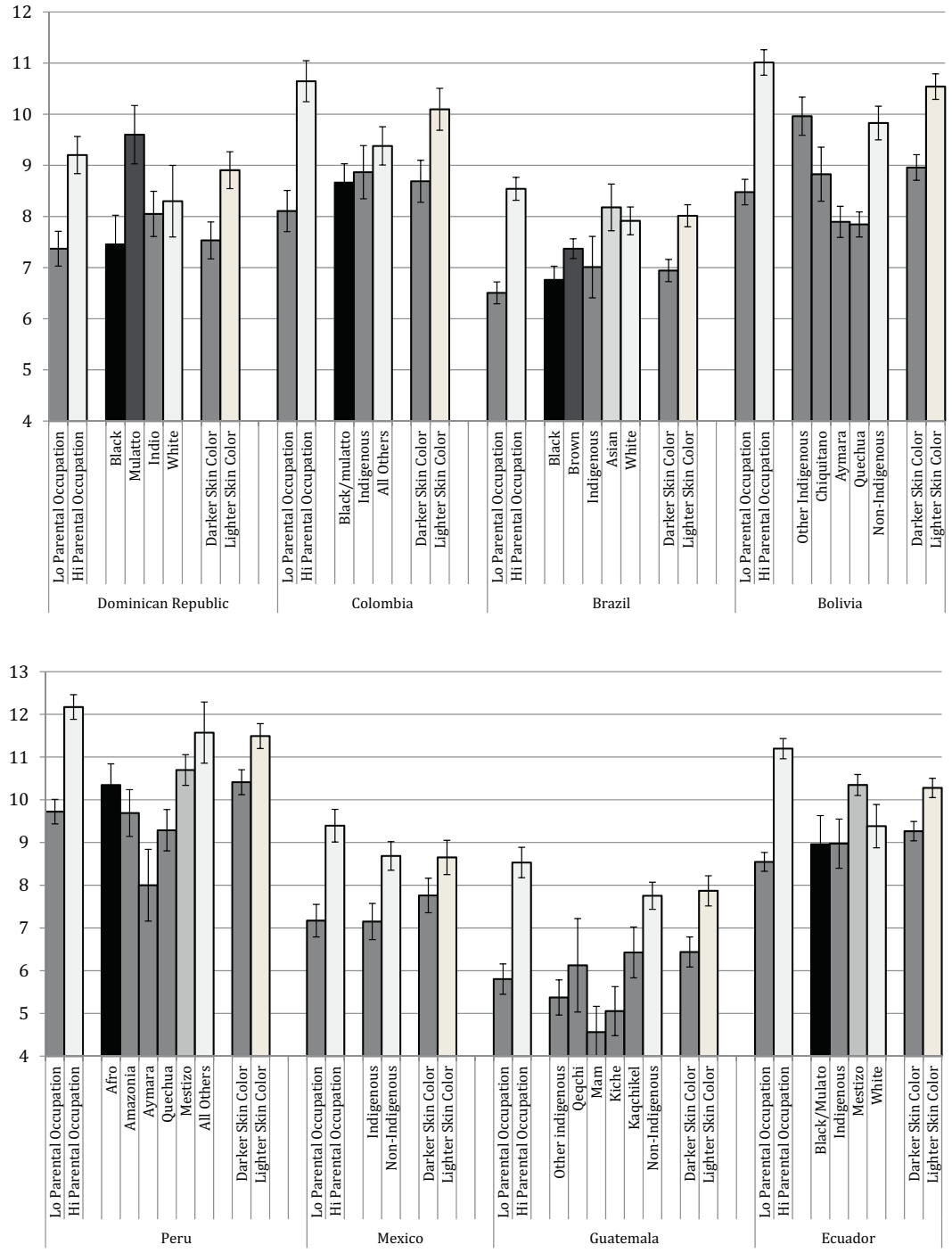

Fig. 3. Predicted years of Schooling of persons with light and darker skin color (set at 1 SD below and above the mean), by ethnoracial self-identification, and high and low parental occupation (set at 1 SD above and below the mean) in eight Latin American countries, with sociodemographic controls set at mean. All estimates come from regression models in Table 2. Color estimates come from model 1, identity results from model 2, and parental occupation results from model 3. The "lighter" and "darker" skin color bars indicate the predicted years of education of respondents with skin tones one standard deviation below or above the mean, respectively, for each country. The parental occupation bars also represent the estimated years of education for respondents one standard deviation below or above their country average occupational status, respectively.

attainment in Table 2 for Guatemala, the results for secondary completion are nearly opposite: the coefficients for Kiche, Mam and other indigenous became positive, though not significant, whereas they had been disadvantaged in educational attainment and finishing primary school. On the other hand, Kaqchikel were not significantly disadvantaged in those models but became so in terms of completing secondary school. We suspect that these results may be due local educational opportunities that are not captured by our region variable or perhaps to a fairly small sample size.

8. Summary

In our study of eight Latin American countries, we have shown that interviewer-rated skin color is strongly and negatively related to educational attainment and completion of primary and secondary schooling. Specifically, darker skin color was consistently associated with less education. In contrast, we found mixed and sometimes unexpected results with self-identification in census ethnoracial categories. Identification as indigenous had a consistent, though not always significant, negative association with schooling. However, of the eight countries, black identification, based on the census categories, translated into a statistically significant schooling disadvantage only in Brazil.

Blacks and mulattoes tended to have intermediate education levels compared to indigenous persons and *mestizos*/whites. Their higher status than the indigenous may be due to their greater spatial and cultural integration in Latin American societies. However, persons who identified as black and mixed-race clearly experienced disadvantage in Brazil, consistent with the extensive literature on race in that country (Paixão et al., 2011; Silva, 1985; Telles, 2004). The lack of a relation between these afro-descendant categories and education in Colombia, Ecuador or Peru suggests that Brazilian findings about a status penalty for afro-descendant identification cannot necessarily be generalized, though black disadvantage would emerge in Ecuador with another reference category. In Colombia and Peru, the finding of no black disadvantage might be due to the lack of an explicit dominant group category rather than the residual (non-indigenous and/or non-black category) that their respective national censuses provide. Nevertheless, the black and *mulato* coefficients in those countries tended to be negative but did not reach statistical significance, perhaps also due to relatively small sample sizes.

The fact that we found a consistent negative association between skin color and education but a weak and inconsistent association between Afro identities and inequality could seem contradictory but this could be due to some dark-skinned respondents identifying in 'lighter' categories such as mestizo or white. Such flows of relatively disadvantaged people out of the Afro categories could artificially increase the SES profile of these Afro categories relative to the rest. There could also be substantial numbers of relatively advantaged lighter-skinned people who choose to identify as black or *mulato*. This flow of higher SES respondents into these categories could neutralize the lower SES of darker people who also identify in the same Afro categories.

In the Dominican Republic, Ecuador and Peru the categories white and *mestizo* were both used. There were no differences in the education of the two groups in the Dominican Republic and Peru, while *mestizos* had higher levels of schooling than whites in Ecuador. Based on our findings for color and expectations of a racial hierarchy, we might have expected whites to do better than *mestizos*. But, as other studies show (Telles & Flores, 2013), identifying as "white" throughout Latin America tends to occur among lower status persons of the same color in countries with strong *mestizaje* ideologies that embraced the mixed race *mestizo* category as the true national category. Had we used the categories white and *mestizo* in Mexico and Colombia, we would have found that *mestizos* did better on average (Telles & Flores, 2013). This apparent *mestizo* advantage may also be due to the tendency of lower status people to identify as "white" since whiteness may still be perceived as a valued source of symbolic capital (Telles & Flores, 2013). Moreover, with the skin color variable added to the model, the effect for self-identifying whites tended to become even greater. This is not surprising since the linear skin color variable had already predicted that lighter-skinned persons would have more education.

When skin color and census ethnoracial identification were in the same regression model, the effects of skin color often diluted a negative relation between racial identification and education. As anticipated in the literature, this was particularly the case for afro-descendants, which is not surprising since they are largely classified as such on the basis of skin color. In the Brazilian case, the disadvantage for each of ethnoracial categories, which are largely defined on the basis of skin color that country, disappeared with controls for actual skin color. Nevertheless, skin color control also tended to diminish the disadvantage for the indigenous, though not as much as for afro-descendants. Unlike identification in black and *mulato* categories, ethnoracial identification as indigenous more often remained statistically significant even after controlling for class background and color, probably reflecting the fact that indigenous identification is more likely to capture non-phenotypic/color traits such as language or accent. At the same time, contrary to our initial expectations, we found some of the largest color-based gaps in education in countries with a significant indigenous presence like Guatemala and Bolivia. This suggests that even if the indigenous/non-indigenous boundary does not entirely depend on color and indigenous people can become recognized as mestizo through cultural assimilation, their descendants may continue to be penalized for their dark skin color even if they no longer identify as indigenous.

Consistent with a vast stratification literature, we also found that class background, measured by parental occupation, was highly predictive of educational attainment in all cases. However, parental occupation, our proxy for class origins, did not negate the powerful effects of race. In the current generation, skin color persisted in its effect on SES despite class origin and other controls related to socioeconomic outcomes, perhaps suggesting discrimination in the present though we recognize that our model does not directly capture that. Moreover, historians have documented how class status was largely shaped by formal and

informal types of racial discrimination, effectively making the parental occupation variable, at least partially, representative of the accumulated effects of race, as indexed by both ethnoracial identification and skin color.

9. Conclusions

In this paper, we have used two measures to capture two dimensions of race and ethnicity: census ethnoracial identification and skin color. The first is the traditional measure of race and the second captures the outward appearing and continuous idea of race, in which groups or categories shade into each other, as is well known for Latin America. Unlike age and sex, race and ethnicity are fluid and multidimensional, and thus the use of multiple measures may be preferable to the traditional use of a single measure, which is often census ethnoracial identification. Our results showed that both skin color and census ethnoracial identification are important predictors of education in Latin America, even when controlling for social class origins and other variables thought to affect SES. Nevertheless, even though census ethnoracial identification has become the standard measure of race and ethnicity, we find that educational inequality estimates based on skin color tended to be more consistent and robust compared to those based on ethnoracial identification. This is perhaps because, net of controls, race captures discrimination, which largely depends on the way persons treat others on the basis of outward appearance.

We found color differences in all eight countries that we examined, despite remarkable social, political, and historical differences. Progressively darker persons consistently exhibited greater educational penalties. Thus, the skin color measure we use provides an important supplement to the census measures because it captures important racial distinctions that are socially recognized but often unnamed, including actual phenotypic variations within traditional racial categories.

In contrast, census ethnoracial identification provided inconsistent and often unexpected results, as shown in the cases of Ecuador, Colombia and the Dominican Republic, where non-whites had statistically significant higher levels of education than self-identified whites. We believe this is so because ethnoracial self-identification reflects not only phenotype, which may be a better predictor of social treatment, but also non-phenotypical factors such as political and culture attachments, social desirability, ethnic assimilation, and exposure to racial ideologies. Since there may be reverse causality between ethnoracial identification and inequality, as in "money whitening", we caution researchers who use these data about making causal statements on the role of race and ethnicity in Latin American inequality.

Our finding that self-identified whites in Ecuador have lower educational levels than self-identified *mestizos*, that these same two groups have the same education level in the Dominican Republic and Peru complicates our ideas about the universality of white privilege and suggests that national ideologies can powerfully shape identification and indirectly disguise inequality. Similarly, self-identified *mulatos* have the highest education in the Dominican Republic, which seems to reflect high status selectivity in that category (Telles & Paschel, 2014). However, when examining education through the prism of skin color rather than self-identification, findings of white privilege and pigmentocracy come into sharp relief. Despite national ideologies of *mestizaje*, researchers have documented a preference for a light-skinned appearance and the prevalence of labor market and educational discrimination, which our findings support (Botelho, Madeira, & Rangel, 2013; Rodríguez Garavito, Cárdenas, Oviedo, & Santamaría, unpublished; Sue, 2013; Wade, 1993).

We do not deny the importance of class origins. We found that class origins, as measured by ranked parental occupation, consistently and strongly predicted educational attainment in the current generation. However, both class and race predicted educational attainment. Moreover, as historical research has shown, the effect of class origins is likely to result from historically accumulated racial privileges and disadvantages. Even if the independent effects of skin color and ethnoracial identification were eliminated, racial inequality would likely remain simply because class inequalities by race would persist across generations. Our findings, based on empirical research, explored the possibility of class and racial origins of inequality. With few exceptions, nation-building ideologies, like *mestizaje*, may have influenced previous scholars to focus primarily on class (and perhaps indigenous ethnicity) rather than study how race shapes inequality in the region.

The growing attempts to collect ethnoracial data in the region are an important step in recognizing the ethnoracial heterogeneity of Latin America. When such data have been collected, the priority has understandably been the recognition of minorities, perhaps at the expense of measuring ethnoracial inequality. We have benefitted from representative surveys, which for the first time, to our knowledge, have collected data on skin color in Latin America, allowing us to show the importance of skin color for capturing racial inequality throughout Latin America. This study has also revealed how multiple measure or dimensions of race and ethnicity can and should be used together for understanding disparities in the region.

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Appendix A. Appendix

Tables A1–H1.

Table A1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in Bolivia (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = Non-indigenous)		
Quechua	−1.834*** (0.202)	−1.531*** (0.209)
Aymara	−1.766*** (0.423)	−1.271** (0.434)
Guarani	−0.132 (0.690)	−0.144 (0.698)
Chiquitano	−0.955** (0.315)	−0.664+ (0.351)
Mojeno	0.271 (0.938)	0.294 (0.908)
Other Native	−0.0245 (0.470)	0.354 (0.502)
DK/NR	−1.159*** (0.314)	−1.057*** (0.303)
Women	−1.741*** (0.261)	−1.870*** (0.261)
Age	−0.122*** (0.00606)	−0.124*** (0.00604)
Community size (ref = rural)		
Small city	0.827*** (0.0557)	0.797*** (0.0558)
Medium city	1.719*** (0.302)	1.583*** (0.310)
Large city	2.521*** (0.360)	2.271*** (0.345)
Parental Occupation	0.106*** (0.00696)	0.0944*** (0.00724)
Region (ref = highlands)		
Andean	−0.481+ (0.249)	−0.517* (0.238)
Lowlands	−1.651*** (0.249)	−1.414*** (0.220)
Skin color		−0.710*** (0.0775)
Constant	12.86*** (0.359)	13.24*** (0.356)
Observations	2282	2282
Imputed Obs.	158	158

Source: 2010 America's Barometer. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$.

Table B1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in Brazil (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = White)		
Pardo	−0.444* (0.178)	−0.0104 (0.195)
Preto	−0.939*** (0.243)	0.196 (0.324)
Indigenous	−1.172* (0.551)	−0.535 (0.558)
Asian	0.232 (0.426)	0.428 (0.421)
Other/DK	−1.579*** (0.421)	−1.136** (0.435)
Parental Occupation	0.0789*** (0.00598)	0.0781*** (0.00597)
Female	0.147 (0.147)	0.103 (0.147)
Age	−0.113*** (0.00529)	−0.112*** (0.00525)
Community size (ref = rural)		
Small city	1.057*** (0.303)	1.103*** (0.301)
Medium city	1.354*** (0.309)	1.419*** (0.308)
Large city	1.609*** (0.279)	1.650*** (0.278)
Metropolitan area	1.828*** (0.268)	1.818*** (0.267)
Region (ref = Central-west)		
North	−0.539+ (0.283)	−0.418 (0.283)
Northeast	−1.393*** (0.253)	−1.360*** (0.252)
Southeast	−0.0630 (0.238)	−0.0481 (0.238)
South	−0.273 (0.295)	−0.259 (0.295)
PERLA data set	−0.604*** (0.172)	−0.572*** (0.171)
Skin color		−0.503*** (0.0978)
Constant	9.530*** (0.454)	9.163*** (0.456)
Observations	2728	2728
Imputed Obs.	450	450

Source: Project on Ethnicity and Race in Latin America 2010 and America's Barometer 2010. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$.

Table C1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in Colombia (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = all others)		
Indigenous	−0.513 (0.555)	−0.521 (0.567)
Black/mulatto/raizal...	−0.786* (0.375)	0.0683 (0.382)
Other	0.0465 (0.529)	−0.102 (0.525)
Female	−0.687* (0.270)	−0.815** (0.266)
Age	−0.112*** (0.0105)	−0.114*** (0.0104)
Community size (ref = rural)		
Small city	1.520* (0.694)	1.366* (0.683)
Medium city	2.484** (0.863)	2.592** (0.850)
Large city	1.643+ (0.841)	1.386+ (0.836)
Metropolitan area	2.043** (0.709)	1.811* (0.705)
Region (ref = Andean)		
Pacific	−0.181 (0.505)	0.157 (0.504)
Caribbean	−0.0394 (0.521)	−0.0139 (0.514)
Parental Occupation	0.103*** (0.0129)	0.0990*** (0.0128)
Skin Color		−1.083*** (0.224)
Constant	10.48*** (1.037)	10.16*** (1.023)
Observations	854	854
Imputed Obs.	38	38

Source: Project on Ethnicity and Race in Latin America 2010. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.1$.

Table D1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in the Dominican Republic (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = white)		
Indio	−0.272 (0.478)	0.512 (0.476)
Black	−0.702 (0.602)	1.112+ (0.643)
Mulatto	1.569* (0.613)	2.430*** (0.600)
Other/DK/NR	−0.485 (1.032)	0.185 (0.997)
Parental Occupation	0.0786*** (0.0119)	0.0734*** (0.0116)
Women	−0.213 (0.236)	−0.343 (0.230)
Age	−0.133*** (0.00834)	−0.135*** (0.00862)
Community size (ref = rural)		
Small city	0.654 (0.624)	0.824 (0.619)
Medium city	1.662** (0.558)	1.557** (0.573)
Large city	1.999** (0.608)	1.887** (0.581)
Metropolitan area	3.448*** (0.604)	3.001*** (0.568)
Region (ref = South)		
Cibao	1.052+ (0.555)	0.737 (0.562)
Oriental	0.185 (0.523)	0.514 (0.512)
Skin color		−0.866*** (0.137)
Constant	10.16*** (0.851)	9.789*** (0.871)
Observations	1207	1207
Imputed Obs.	50	50

Source: 2010 America's Barometer. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$.

Table E1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in Ecuador (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = White)		
Mestizo	0.526* (0.262)	0.958*** (0.277)
Indigenous	−0.893 (0.608)	−0.241 (0.647)
Black/*Mulato*	−1.036 (0.651)	0.336 (0.719)
Other/DK/NR	−1.110 (0.799)	−0.547 (0.785)
Parental Occupation	0.105*** (0.00730)	0.102*** (0.00728)
Female	−0.616*** (0.153)	−0.681*** (0.152)
Age	−0.0952*** (0.00663)	−0.0964*** (0.00670)
Community size (ref = rural)		
Small city	1.098** (0.391)	1.085** (0.389)
Medium city	1.730*** (0.376)	1.699*** (0.359)
Large city	1.020*** (0.281)	1.046*** (0.273)
Metropolitan area	1.332*** (0.338)	1.353*** (0.357)
Region (ref = Coast)		
Sierra	−0.619* (0.277)	−0.742** (0.277)
Oriente	−0.332 (0.399)	−0.389 (0.378)
Skin color		−0.530*** (0.115)
Constant	10.23*** (0.490)	10.01*** (0.485)
Observations	2376	2376
Imputed Obs.	145	145

Source: 2010 America's Barometer. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$.

Table F1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in Guatemala (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = non-indigenous)		
Kaqchikel	−0.678 (0.656)	−0.403 (0.664)
Kiche	−2.304*** (0.586)	−2.264*** (0.612)
Mam	−2.569*** (0.629)	−2.243*** (0.615)
Qeqchi	−1.134 (1.114)	−0.774 (1.113)
Other indigenous	−1.849*** (0.436)	−1.548*** (0.437)
Other/None	1.626+ (0.986)	1.690+ (0.975)
DK/NR	−2.301** (0.845)	−1.869* (0.837)
Parental Occupation	0.117*** (0.0113)	0.111*** (0.0115)
Female	−0.529* (0.244)	−0.783** (0.238)
Age	−0.0924*** (0.00763)	−0.0903*** (0.00763)
Community size (ref = rural)		
Medium city	2.208*** (0.436)	2.147*** (0.423)
Large city	3.110*** (0.498)	2.994*** (0.508)
Metropolitan area	3.850*** (0.726)	3.647*** (0.738)
Region (ref = Metropolitan)		
North	0.661 (0.899)	0.547 (0.913)
Northeast	0.00992 (0.727)	0.0443 (0.730)
Southeast	−0.960 (0.758)	−0.470 (0.737)
Central	0.987 (0.719)	1.344+ (0.761)
Southwestern	0.0989 (0.650)	0.521 (0.698)
Northwestern	1.408+ (0.741)	1.738* (0.779)
Peten	0.342 (1.030)	0.350 (1.026)
Skin color		−0.675*** (0.136)
Constant	6.611*** (0.795)	6.612*** (0.817)
Observations	1172	1172
Imputed Obs.	68	68

Source: 2010 America's Barometer. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$.

Table G1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in Mexico (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = non-indigenous)		
Indigenous	−0.969* (0.445)	−0.860+ (0.453)
DK/NR	−1.959*** (0.354)	−1.955*** (0.362)
Parental Occupation	0.101*** (0.0146)	0.0972*** (0.0148)
Female	−0.740** (0.272)	−0.845** (0.268)
Age	−0.113*** (0.0106)	−0.113*** (0.0104)
Community size (ref = rural)		
Small city	1.845*** (0.554)	1.847*** (0.551)
Medium city	2.412*** (0.571)	2.378*** (0.587)
Large city	3.094*** (0.664)	3.033*** (0.651)
Metropolitan area	3.239*** (0.642)	3.087*** (0.646)
Region (ref = South)		
Center West	−0.711 (0.650)	−0.988 (0.638)
Center	−0.466 (0.607)	−0.646 (0.603)
North West	−0.304 (0.789)	−0.625 (0.788)
North East	0.0478 (0.844)	−0.0620 (0.794)
Skin color		−0.423** (0.161)
Constant	9.455*** (1.050)	9.845*** (1.057)
Observations	833	833
Imputed Obs.	46	46

Source: Project on Ethnicity and Race in Latin America 2010. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$.

Table H1
Tobit regression of years of schooling with color, ethnoracial identification and parental occupation in Peru (age 25 and up).

Variables	(1)	(2)
Ethno-racial ID (ref = White)		
Quechua	−1.684*** (0.496)	−1.085* (0.528)
Aymara	−3.151*** (0.814)	−2.105* (0.903)
Amazonia	−1.394* (0.558)	−0.740 (0.547)
Afro	−0.696 (0.514)	0.466 (0.610)
Mestizo	−0.316 (0.380)	0.338 (0.424)
Other	−2.674*** (0.636)	−2.042** (0.704)
Parental Occupation	0.0903*** (0.00684)	0.0885*** (0.00670)
Female	−1.232*** (0.210)	−1.371*** (0.207)
Age	−0.0839*** (0.0112)	−0.0858*** (0.0115)
Community size (ref = small city)		
Medium city	0.343 (0.500)	0.375 (0.474)
Large city	1.025** (0.344)	0.903* (0.355)
Metropolitan area	0.838 (0.609)	0.781 (0.609)
Region (ref = South Coast)		
North Coast	−1.363*** (0.404)	−1.439*** (0.415)
Central Coast	−0.352 (0.662)	−0.511 (0.685)
North Andes	−1.927* (0.906)	−2.156** (0.821)
Central Andes	−1.083+ (0.581)	−1.216* (0.616)
South Andes	−0.933* (0.424)	−0.813+ (0.488)
Amazones	−2.414*** (0.466)	−2.345*** (0.499)
Skin color		−0.595*** (0.128)
Constant	13.18*** (0.651)	12.91*** (0.643)
Observations	1201	1201
Imputed Obs.	37	37

Source: Project on Ethnicity and Race in Latin America 2010. Robust standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
+ $p < 0.10$.

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